


# Glossary

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Characteristic</td>
<td>An attribute of a product or a process in the development of management information systems.</td>
</tr>
<tr>
<td>Checklist</td>
<td>A collection of statements for a criterion of a factor.</td>
</tr>
<tr>
<td>Criterion</td>
<td>A characteristic of a product or a process in the development of management information systems that can be measured directly.</td>
</tr>
<tr>
<td>Data Source Name (DSN)</td>
<td>Stores information necessary for an application to connect to a database.</td>
</tr>
<tr>
<td>Database</td>
<td>A collection of related information that is stored in a structured and organised way where standard methods of retrieval can be used to retrieve the data.</td>
</tr>
<tr>
<td>Factor</td>
<td>A characteristic of a product or a process in the development of management information systems that cannot be measured directly.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Factor Criteria Metric model</td>
<td>One of the earliest approaches to software measurement to obtain a quantitative view of quality.</td>
</tr>
<tr>
<td>(FCM model)</td>
<td></td>
</tr>
<tr>
<td>Fulfilled Statement</td>
<td>A statement of a checklist for a specific factor that is fulfilled by the project.</td>
</tr>
<tr>
<td>Grade</td>
<td>A category that is assigned to a characteristic of a product or a process in the development of management information systems to indicate its quality.</td>
</tr>
<tr>
<td>Grading Scheme</td>
<td>A categorisation of the score of a characteristic of a product or a process in the development of management information systems to differentiate its quality.</td>
</tr>
<tr>
<td>Graphical User Interface</td>
<td>A graphical-based interface between a user and the computer. GUls usually require pointing devices. All the programs of a particular GUI have a similar look and feel.</td>
</tr>
<tr>
<td>(GUI)</td>
<td></td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>------</td>
<td>------------</td>
</tr>
<tr>
<td>Management Information</td>
<td>A software that manages data in the database.</td>
</tr>
<tr>
<td>System (MIS)</td>
<td></td>
</tr>
<tr>
<td>Metric</td>
<td>A formula to calculate a characteristic of a product or a process in the development of management information systems.</td>
</tr>
<tr>
<td>Open Database Connectivity (ODBC)</td>
<td>An open standard API that allows an application to access different SQL data sources at run time without recompiling the application for each target database.</td>
</tr>
<tr>
<td>Process</td>
<td>An activity involved in the development of management information systems. For example, preparing a software requirements specification and performing unit testing.</td>
</tr>
<tr>
<td>Product</td>
<td>An artifact or deliverable produced at the end of a development phase in the development of management information systems. For example, software requirements specification and design specification.</td>
</tr>
<tr>
<td>Glossary</td>
<td></td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td></td>
</tr>
<tr>
<td><strong>Requirements Gathering</strong></td>
<td>A process where the developers interview the clients and users to elicit their needs.</td>
</tr>
<tr>
<td><strong>Interview</strong></td>
<td></td>
</tr>
<tr>
<td><strong>(RGI)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Statement</strong></td>
<td>An item or a condition of a checklist for a specific factor.</td>
</tr>
<tr>
<td><strong>Unavailable Statement</strong></td>
<td>A statement of a checklist for a specific factor that has not been checked by users of the project.</td>
</tr>
<tr>
<td><strong>Unfulfilled Statement</strong></td>
<td>A statement of a checklist for a specific factor that is not fulfilled by the project.</td>
</tr>
</tbody>
</table>
Appendix I

Sample Survey Form –
Criteria and Checklists for
Understandability of a Software Requirements Specification
and
Effectiveness of a Requirements Gathering Interview
Cover Page for Survey by Hand

Chew Wei Yin
Faculty of Computer Science and Information Technology
University of Malaya
Lembah Pantai
50603 Kuala Lumpur
Malaysia

Dear Sir/Madam

Survey on Criteria and Checklists for Understandability of Software Requirements Specifications and Effectiveness of Requirements Gathering Interviews

I am conducting a survey on the criteria and checklists for the understandability of software requirements specifications and for the effectiveness of requirements gathering interviews.

This survey is meant for research purpose only. Data collected will be treated with strictest confidentiality. The analysis results will only be used in the project paper for my Master's degree. The analysis results will not be, in any way, prejudicial to your image. The returned survey form will be destroyed upon completion of the project paper.

Please do not hesitate to email me at cweiyin99@yahoo.com should you require further clarification.

Thank you for your participation in this survey.

Yours sincerely

Chew Wei Yin
Cover Page for Survey by Email

Chew Wei Yin
Faculty of Computer Science and Information Technology
University of Malaya
Lembah Pantai
50603 Kuala Lumpur
Malaysia

Dear Sir/Madam

Survey on Criteria and Checklists for Understandability of Software Requirements Specifications and Effectiveness of Requirements Gathering Interviews

I am conducting a survey on the criteria and checklists for understandability of software requirements specifications, and for effectiveness of interviews.

This survey is meant for research purpose only. Data collected will be treated with strictest confidentiality. The analysis results will only be used in the project paper for my Master’s degree. The analysis results will not be, in any way, prejudicial to your image. The returned survey form will be destroyed upon completion of the project paper.

I hope that you would be able to complete the attached survey form and email it back to me. My email address is cweiyn99@yahoo.com. Your help would be truly appreciated.

Please do not hesitate to email me at cweiyn99@yahoo.com should you require further clarification.

Thank you.

Yours sincerely

Chew Wei Yin
Survey on Criteria and Checklists for:
1. Understandability of Software Requirements Specifications, and
2. Effectiveness of Requirement Gathering Interviews

This survey has two main parts.

Part 1 is about the understandability of software requirements specifications.

Part 1.1 to elicit opinions on whether the stated criteria are appropriate for the understandability of software requirements specifications.

Part 1.2 to elicit opinions on whether the prepared checklists are appropriate for each of the criteria of the understandability of software requirements specifications.

Part 2 is about the effectiveness of requirement gathering interviews

Part 2.1 to elicit opinions on whether the stated criteria are appropriate for the effectiveness of the requirement gathering interviews.

Part 2.2 to elicit opinions on whether the prepared checklists are appropriate for each of the criteria of the effectiveness of the requirement gathering interviews.
Particulars of Participant

Date : ______________________

(1) Name : ______________________

(2) Position : ______________________

(3) Company Name : ______________________

(4) Business Nature : ______________________

(5) Company Address : ______________________

(6) Contact Number : ______________________

(7) Number of Years of Experience in Software Development : ______________________
Part 1 Understandability of Software Requirements Specifications

Introduction


A software requirements specification possesses the quality factor **understandability** to the extent that all the requirements stated are clear to the developers, users and clients.

The understandability of the software requirements specifications has four criteria, namely completeness, conciseness, consistency, and structuredness. Each criterion is given a weight to indicate its significance to the understandability.

If one or more **Compulsory Criteria for Understandability** fail

Understandability Score = 0% (fail)

Else

Understandability Score =

\[
\frac{(\text{Completeness Score})}{\Sigma} \cdot \text{Completeness Weight} + \frac{(\text{Conciseness Score})}{\Sigma} \cdot \text{Conciseness Weight} + \frac{(\text{Consistency Score})}{\Sigma} \cdot \text{Consistency Weight} + \frac{(\text{Structuredness Score})}{\Sigma} \cdot \text{Structuredness Weight}
\]

%  

\[
\sum_{i=1}^{n} \text{Weight}_i
\]

End If

The checklists for the understandability of software requirements specifications are used by the software developers during the review on the prepared software requirements specification in the requirement phase.
Part 1.1 Understandability of Software Requirements Specifications

Question 1.1a
Are the following criteria appropriate for the understandability of the software requirements specifications?

Question 1.1b
Are the following criteria compulsory for the understandability of the software requirements specifications?

Instructions: If you agree, please cross (X) in the ‘Yes’ box.
If you disagree, please cross (X) in the ‘No’ box.

If your answer to question 1.1a is Yes, proceed to question 1.1b,
otherwise, proceed to the next criterion.

<table>
<thead>
<tr>
<th>Quality Criterion for Understandability of Software Requirements Specifications</th>
<th>Quality Criterion Description</th>
<th>Q1.1a Appropriate?</th>
<th>Q1.1b Compulsory?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completeness</td>
<td>A software requirements specification possesses the quality criterion completeness to the extent that all of its parts are present and each of its parts is fully explained.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conciseness</td>
<td>A software requirements specification possesses the quality criterion conciseness to the extent that no excessive information is present.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consistency</td>
<td>A software requirements specification possesses the quality criterion consistency to the extent that it contains uniform notation, terminology, and symbology within itself.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structuredness</td>
<td>A software requirements specification possesses the quality criterion structuredness to the extent that it possesses a definite organisation of all the requirements.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Part 1.2 Understandability of Software Requirements Specifications

Question 1.2a
Are the following checklists appropriate for each of the criteria of the understandability of software requirements specifications (SRS): completeness, conciseness, consistency and structuredness?

Question 1.2b
Are the following checklists compulsory for each of the criteria of the understandability of software requirements specifications (SRS): completeness, conciseness, consistency and structuredness?

Instructions: If you agree, please cross (X) in the ‘Yes’ box.
If you disagree, please cross (X) in the ‘No’ box.

If your answer to question 1.2a is Yes, proceed to question 1.2b, otherwise, proceed to the next criterion.

Quality Criterion: Completeness

<table>
<thead>
<tr>
<th>Completeness Checklist</th>
<th>Q1.2a Appropriate?</th>
<th>Q1.2b Compulsory?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Each functional requirement has an introduction section.</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Each functional requirement has an input section.</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Each functional requirement has a process section.</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Each functional requirement has an output section.</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>There are descriptions to explain each requirement.</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Each requirement statement that cross-references another requirement states the requirement number of the referenced requirement.</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Each requirement has one interpretation only.</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>All referenced requirements are defined.</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Each requirement can be realised by the current technology.</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>
### Quality Criterion: Conciseness

<table>
<thead>
<tr>
<th>Conciseness Checklist</th>
<th>Q1.2a</th>
<th>Q1.2b</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Appropriate?</td>
<td>Compulsory?</td>
</tr>
<tr>
<td>Each requirement statement states only one function.</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>There is no repetitive statement of user's needs in the SRS.</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Each requirement contains no repetitive description.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Quality Criterion: Consistency

<table>
<thead>
<tr>
<th>Consistency Checklist</th>
<th>Q1.2a</th>
<th>Q1.2b</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Appropriate?</td>
<td>Compulsory?</td>
</tr>
<tr>
<td>All requirements are stated in the active voice.</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>The same entity, feature or concept is referred to with the same term.</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>The same referencing method is used to refer to another requirement in the SRS.</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>A systematic indentation is used throughout the SRS.</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>A consistent numbering format is used throughout the SRS.</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

### Quality Criterion: Structuredness

<table>
<thead>
<tr>
<th>Structuredness Checklist</th>
<th>Q1.2a</th>
<th>Q1.2b</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Appropriate?</td>
<td>Compulsory?</td>
</tr>
<tr>
<td>All requirements are decomposed based on the development methodology used.</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Each requirement is decomposed into between two to eight lower level requirements.</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>All requirements are prioritised.</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>The ordering of introduction, input, process and output is used to describe each requirement.</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Each requirement statement is indented systematically.</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Each requirement can be located in the SRS easily.</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Each referenced requirement can be located in the SRS easily.</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>
Part 2 Effectiveness of Requirements Gathering Interviews

Introduction

A requirement gathering interview possesses the quality factor effectiveness to the extent that the outcome of the interview aids the preparation of the software requirements specification.

The effectiveness of the requirements gathering interviews has three criteria, namely completeness, understandability, and conciseness. Each criterion is given a weight to indicate its significance to the effectiveness of the requirements gathering interviews.

If one or more Compulsory Criteria for Effectiveness fail

Effectiveness Score = 0% (fail)

Else

Effectiveness Score =

\[
\frac{(\text{Completeness Score} \cdot \text{Completeness Weight}) + (\text{Understandability Score} \cdot \text{Understandability Weight}) + (\text{Conciseness Score} \cdot \text{Conciseness Weight})}{\sum_{i=1}^{n} \text{Weight}_i}
\]

End If

The checklists for the effectiveness of the requirements gathering interviews are used by the software developers after an interview report for the conducted interview has been written and has been verified with interviewees. These checklists are used during the requirement phase of the software development life cycle.
Part 2.1 Effectiveness of Requirements Gathering Interviews

Question 2.1a
Are the following criteria appropriate for the effectiveness of the requirements gathering interviews?

Question 2.1b
Are the following criteria compulsory for the effectiveness of the requirements gathering interviews?

Instructions: If you agree, please cross (X) in the 'Yes' box.
If you disagree, please cross (X) in the 'No' box.

If your answer to question 2.1a is Yes, proceed to question 2.1b, otherwise, proceed to the next criterion.

<table>
<thead>
<tr>
<th>Quality Criterion of Effectiveness of Interviews</th>
<th>Quality Criterion Description</th>
<th>Q2.1a Appropriate?</th>
<th>Q2.1b Compulsory?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completeness</td>
<td>A requirements gathering interview possesses the quality criterion completeness to the extent that all the necessary preparation and planning for the interview are carried out.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Understandability</td>
<td>A requirements gathering interview possesses the quality criterion understandability to the extent that the interviewee can answer each question without further queries.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conciseness</td>
<td>A requirements gathering interview possesses the quality criterion conciseness to the extent that only relevant questions are asked.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Part 2.2 Effectiveness of Requirements Gathering Interviews

Question 2.2a
Are the following checklists appropriate for each of the criteria of the effectiveness of the requirements gathering interview: completeness, understandability and conciseness?

Question 2.2b
Are the following checklists compulsory for each of the criteria of the effectiveness of the requirements gathering interview: completeness, understandability and conciseness?

Instructions: If you agree, please cross (X) in the 'Yes' box.
If you disagree, please cross (X) in the 'No' box.

If your answer to question 2.2a is Yes, proceed to question 2.2b, otherwise, proceed to the next criterion.

Quality Criterion: Completeness

<table>
<thead>
<tr>
<th>Completeness Checklist</th>
<th>Q2.2a Appropriate?</th>
<th>Q2.2b Compulsory?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>An objective has been determined before the interview.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Questions have been formulated before the interview.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interviewees have been identified before the interview.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appointments have been made with interviewees before the interview.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Each appointment states interview objective, time and venue.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Each appointment has been confirmed before the interview.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A report has been produced for each completed interview.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Each report has been verified with the interviewee.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Quality Criterion: Understandability

<table>
<thead>
<tr>
<th>Understandability Checklist</th>
<th>Q2.2a</th>
<th>Q2.2b</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Appropriate?</td>
<td>Compulsory?</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Simple language is used during the interview.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Questions are based on common concepts.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Questions are based on widespread information.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambiguous words are clarified.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Answer to each question needs no recall of information.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Each question has an interpretation only.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Same entity, feature or concept is referred to with the same term.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Questions are ordered according to priority.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Quality Criterion: Conciseness

<table>
<thead>
<tr>
<th>Conciseness Checklist</th>
<th>Q2.2a</th>
<th>Q2.2b</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Appropriate?</td>
<td>Compulsory?</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Questions are related to interview objective.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Questions are specific and not general.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix II

FCMware System Functional Requirements
Contents

1.0 Administrator Handling .............................................................. 1
  1.1 Administrator Login to FCMware ............................................... 1
  1.2 Administrator Changes Login ID and Password .......................... 2

2.0 User Handling ............................................................................. 3
  2.1 Administrator Creates a New User ............................................ 3
  2.2 User Login to FCMware ............................................................ 4
  2.3 User Changes Login Password ................................................ 5
  2.4 Administrator Updates an Existing User ................................. 5
  2.5 Administrator Deletes an Existing User ................................. 6

3.0 Project Handling ......................................................................... 7
  3.1 Administrator Creates a New Project ....................................... 7
  3.2 User Opens an Existing Project ............................................... 8
  3.3 User Closes a Project .............................................................. 9
  3.4 Administrator Updates an Existing Project ............................ 10
  3.5 Administrator Deletes an Existing Project ............................ 11

4.0 Criterion Handling ..................................................................... 11
  4.1 Administrator Creates a New Criterion ................................. 12
  4.2 User Selects a Criterion ......................................................... 12
  4.3 Administrator Updates an Existing Criterion ....................... 13
  4.4 Administrator Deletes an Existing Criterion ....................... 14
1.0 Administrator Handling

The operations in handling administrators allow the following:

i. administrator login to FCMware

ii. administrator changes the administrator login ID and password

1.1 Administrator Login to FCMware

i. Introduction

This function enables the administrator to login to FCMware.

ii. Input

The administrator shall enter a login ID and a password.

iii. Process

This function shall validate the entered login ID and password. If the login ID is incorrect, the function shall display an error message stating that the login ID is incorrect and login is unsuccessful. If password is incorrect, the function shall display an error message stating that the password is incorrect and login is unsuccessful. The function shall allow a maximum of three login attempts. If the login ID and password are correct, the function shall allow the administrator to enter FCMware.
iv. Output

The administrator login to FCMware.

1.2 Administrator Changes Login ID and Password

i. Introduction

This function enables the administrator to edit the administrator login ID and password.

ii. Input

The administrator shall enter the administrator login ID, old password and new password. The administrator shall need to confirm the new password.

iii. Process

This function shall check the old password entered. If the old password is incorrect, this function shall display an error message stating that the old password is incorrect. This function shall check whether the new password matches the confirmed new password. If no, this function shall display an error message stating that the passwords do not match. This function shall check the new password entered. The minimum length is four characters. The maximum length is thirty characters. If the length is invalid, this function shall display an error message stating that the password must be between four and thirty characters long. This function shall update the administrator login ID and password.

iv. Output

The administrator login ID and password are updated.
2.0 User Handling

The operations in handling users allow the following:

i. administrator creates a new user

ii. administrator updates an existing user

iii. user login to FCMware

iv. user changes the login password

v. administrator deletes an existing user

2.1 Administrator Creates a New User

i. Introduction

This function enables the administrator to create a new user.

ii. Input

The administrator shall enter a user login ID, user name and user password for the new user. The administrator shall need to confirm the user password. The function shall allow the administrator to enter the user description. The user description is an optional entry.

iii. Process

The function shall check whether the user login ID entered by the administrator has already existed. If yes, this function shall display an error message stating that the user login ID has already existed. This function shall check the user login ID and user password. The minimum length is four characters. The maximum length is thirty characters. This function shall check the user name. The minimum length is one character. The maximum length is fifty characters. This function shall check the user
description. The maximum length is two hundred characters. This function shall check whether the user password matches the confirmed password. If an error occurs, this function shall display an error message. This function shall create the new user.

iv. Output

The new user is created.

2.2 User Login to FCMware

i. Introduction

This function enables the user to login to FCMware.

ii. Input

This function shall require the user to enter a login ID and a password.

iii. Process

This function shall validate the entered login ID and password. If the login ID is incorrect, the function shall display an error message stating that the login ID is incorrect and login is unsuccessful. If the password is incorrect, the function shall display an error message stating that the password is incorrect and login is unsuccessful. The function shall allow a maximum of three login attempts. If the login ID and password are correct, the function shall allow the user to enter FCMware.

iv. Output

The user login to FCMware.
2.3 User Changes Login Password

i. Introduction
This function enables the user to change the user login password.

ii. Input
The user shall enter the old password and new password. The user needs to confirm the new password.

iii. Process
This function shall check whether the new password matches the confirmed new password. If no, the function shall display an error message stating that the passwords do not match. This function shall check whether the old password entered is correct. If no, this function shall display an error message stating that the old password entered is incorrect. This function shall check whether the new password entered is between four and thirty characters long. If no, this function shall display an error message. This function shall then update the new password in the database.

iv. Output
The user login password is updated.

2.4 Administrator Updates an Existing User

i. Introduction
This function enables the administrator to update an existing user.
ii. Input

This function shall display the list of existing users. The administrator shall select a user from the list. This function shall not allow the administrator to type in the user input box. The administrator shall edit the user login ID, user name and user description. This function shall allow the administrator to add a project to and remove a project from the list of projects that the user has right to.

iii. Process

This function shall check the edited user login ID. If the user login ID has already existed, this function shall display an error message stating that the user login ID has already existed. The minimum length is four characters. The maximum length is thirty characters. This function shall check the user name. The minimum length is one character. The maximum length is fifty characters. This function shall check the user description. The maximum length is two hundred characters. If an error occurs, this function shall display an error message. This function shall update the user login ID, user name, user description and the list of projects that the user has right to in the database.

iv. Output

The user is updated.

2.5 Administrator Deletes an Existing User

i. Introduction

This function enables the administrator to delete an existing user.
ii. Input
This function shall display the list of existing users. The administrator shall select a user from the list. This function shall not allow the administrator to type in the user input box.

iii. Process
This function shall delete the selected user.

iv. Output
The user is deleted.

### 3.0 Project Handling

The operations involved in handling projects allow the following:

i. administrator creates a new project

ii. user opens an existing project

iii. user closes a project

iv. administrator updates an existing project

v. administrator deletes an existing project

### 3.1 Administrator Creates a New Project

i. Introduction

This function allows the administrator to create a new project.
ii. Input

The administrator shall assign a name for the new project. The function shall allow the administrator to enter the project description. The project description is an optional entry.

iii. Process

This function shall check the project name entered. The minimum length of the project name is one character. The maximum length is two hundred characters. If the length is invalid, this function shall display an error message stating that the project name must be between one and two hundred characters long. This function shall check whether the project name entered has already existed. If yes, this function shall display an error message stating that the new project cannot be created due to duplicate project name. This function shall check whether the project description entered exceeds two hundred characters. If yes, this function shall display an error message stating that the project description must not exceed two hundred characters. This function shall create the new project.

iv. Output

A new project is created.

### 3.2 User Opens an Existing Project

i. Introduction

This function enables the user to retrieve a project. The user can use this function if the user has right to at least a project.
ii. Input
This function shall display a list of projects that the user has right to. The user shall select a project from this list. This function shall not allow the user to type in the project input box.

iii. Process
This function shall open the project that is selected by the user.

iv. Output
The selected project is opened.

3.3 User Closes a Project

i. Introduction
This function closes the currently opened project. The user can use this function if a project is opened.

ii. Input
Nil

iii. Process
This function shall close the opened project.

iv. Output
The project is closed.
3.4 Administrator Updates an Existing Project

i. Introduction

This function enables the administrator to update an existing project. The administrator can use this function if there is at least one existing project.

ii. Input

The administrator shall select a project from the list of existing projects. This function shall not allow the administrator to type in the project input box. The administrator shall update the name and description of the selected project.

iii. Process

This function shall check the updated project name. The minimum length of the project name is one character. The maximum length is two hundred characters. This function shall check the updated project description. The maximum length is two hundred characters. If the length is invalid, this function shall display an error message stating the error. This function shall check whether the updated project name is used by another project. If yes, the function shall display an error message stating that the update is unsuccessful because the project name has already existed. The function shall update the name and description of the project.

iv. Output

The project is updated.
3.5 Administrator Deletes an Existing Project

i. Introduction

This function enables the administrator to delete an existing project. The administrator can use this function if there is at least one existing project.

ii. Input

The administrator shall select a project from the list of existing projects. This function shall not allow the administrator to type in the project input box.

iii. Process

This function shall delete the selected project from the database.

iv. Output

The project is deleted.

4.0 Criterion Handling

The operations in handling criteria allow the following:

i. administrator creates a new criterion

ii. user selects a criterion

iii. administrator updates an existing criterion

iv. administrator deletes an existing criterion
4.1 Administrator Creates a New Criterion

i. Introduction
This function enables the administrator to create a criterion for the selected factor. The administrator can use this function if a factor is selected.

ii. Input
The administrator shall enter the new criterion, whether the new criterion is compulsory and criterion weight. The function shall allow the administrator to enter the criterion description. The criterion description is an optional entry.

iii. Process
This function shall check whether the new criterion entered is between one and two hundred characters. If no, the function shall display an error message stating that the criterion must be between one and two hundred characters long. This function shall check whether the new criterion entered has already existed for the selected factor. If yes, the function shall display an error message stating that the new criterion has already existed. The function shall add the new criterion for the selected factor in the database.

iv. Output
The new criterion is added for the selected factor.

4.2 User Selects a Criterion

i. Introduction
This function enables the user to select a criterion for the selected factor. The user can use this function if a project is opened and a factor is selected.
ii. Input

The user shall select a criterion from the list of criteria for the selected factor. This function shall not allow the user to type in the criterion input box.

iii. Process

This function shall retrieve details on whether the selected criterion is compulsory and criterion weight. For each statement of the checklist, this function shall retrieve the statement, whether the statement is compulsory, statement weight and whether the project fulfils the statement.

iv. Output

This function shall display whether the selected criterion is compulsory and criterion weight. For each statement of the checklist, the function shall display the statement, whether statement is compulsory, statement weight and whether the project fulfils the statement. If the user has not checked or unchecked a statement of the checklist, the function shall display the statement unchecked.

4.3 Administrator Updates an Existing Criterion

i. Introduction

This function enables the administrator to update an existing criterion for the selected factor. The administrator can use this function if a factor is selected and it has at least one criterion.
ii. Input

The administrator shall select a criterion from the list of existing criteria for the selected factor. The function shall not allow the administrator to type in the criterion input box. The administrator shall update the criterion, criterion description, whether criterion is compulsory and criterion weight.

iii. Process

This function shall check whether the updated criterion entered is between one and two hundred characters. This function shall check whether the updated criterion entered has already existed for the selected factor. If an error occurs, the function shall display an error message. The function shall update the criterion, criterion description, whether criterion is compulsory and criterion weight.

iv. Output

The criterion is updated.

4.4 Administrator Deletes an Existing Criterion

i. Introduction

This function enables the administrator to delete an existing criterion of a selected factor. The administrator can use this function if a factor is selected and it has at least one criterion.
ii. Input

The administrator shall select a criterion from the list of existing criterion for the selected factor. This function shall not allow the administrator to type in the criterion input box.

iii. Process

This function shall check whether any project is using any statement of the checklist for the selected criterion. If yes, the function shall display an error message stating that the criterion cannot be deleted because it is in use. If no, the function shall delete the criterion from the selected factor from the database.

iv. Output

The criterion is deleted.

5.0 Checklist Handling

The operations in handling checklists allow the following:

i. administrator creates a new statement for a checklist

ii. user checks whether a statement is fulfilled

iii. administrator updates an existing statement of a checklist

iv. administrator deletes an existing statement of a checklist
5.1 Administrator Creates a New Statement for a Checklist

i. Introduction

This function enables the administrator to add a statement for the checklist. The administrator can use this function if a factor is selected and a criterion for the selected factor is selected.

ii. Input

The administrator shall select a factor from the list of existing factor. This function shall not allow the administrator to type in the factor input box. This function shall display the list of criteria for the selected factor. The administrator shall select a criterion from the list of existing criteria. This function shall not allow the administrator to type in the criteria input box. The administrator shall enter the new statement for the checklist, whether the statement is compulsory and statement weight.

iii. Process

This function shall check whether the statement entered is between one and two hundred characters long. This function shall check whether the new statement entered by the administrator has already existed in the checklist. If an error occurs, the function shall display an error message. The function shall add the statement to the checklist.

iv. Output

The new statement is added to the checklist.
5.2 User Checks Statement Fulfilness

i. Introduction

This function enables the user to check whether a project fulfils the statements of the checklist for the selected criterion for the selected factor. The user can use this function only if project is opened, a factor is selected, a criterion is selected and checklist has at least one statement.

ii. Input

The user shall check or uncheck the statements of the checklist for the selected criterion. If the project fulfils the statement, check the statement. Else, uncheck the statement.

iii. Process

This function shall update the checkness of the statements of the checklist in the database.

This function shall calculate the score of the selected criterion in the following manner:

If a statement of the checklist is checked

\[
\text{Statement Score} = 1
\]

Else

\[
\text{Statement Score} = 0
\]

End If
If one or more compulsory statements of the checklist are not checked

Criterion Score = 0% (failed)

Else

\[
\text{Criterion Score} = \frac{\sum_{i=1}^{S} (\text{Statement Score}_i \times \text{Statement Weight}_i)}{\sum_{i=1}^{S} \text{Statement Weight}_i} \times 100%
\]

where S is the total number of statement of the checklist.

End If

iv. Output

This function shall display the new criterion score.

5.3 Administrator Updates an Existing Statement in a Checklist

i. Introduction

This function enables the administrator to update an existing statement of the checklist for a selected criterion for a selected factor. The administrator can use this function if a factor is selected, a criterion is selected and there is at least one statement in the checklist.

ii. Input

The administrator shall select a factor from the list of existing factors. This function shall not allow the administrator to type in the factor input box. This function shall display the list of criteria for the selected factor. The administrator shall select a criterion from the list. This function shall not allow the administrator to type in the criteria input box. This function shall display the list of statements of the checklist for
the selected criterion. The administrator shall select a statement from the list. This function shall not allow the administrator to type in the statement input box. The administrator shall enter the updated statement, change whether the statement is compulsory or change the statement weight.

iii. Process
This function shall check whether the statement entered is between one and two hundred characters long. This function shall check whether the updated statement entered by the administrator has already existed in the checklist. If an error occurs, the function shall display an error message. The function shall update the statement.

iv. Output
The statement is updated.

5.4 Administrator Deletes an Existing Statement in a Checklist

i. Introduction
This function enables the administrator to delete an existing statement of the checklist for the selected criterion for the selected factor. The administrator can use this function if a factor is selected, a criterion is selected and there is at least one statement in the checklist.

ii. Input
The administrator shall select a factor from the list of existing factors. This function shall not allow the administrator to type in the factor input box. This function shall display the list of criteria for the selected factor. The administrator shall select a
criterion from the list of existing criteria. This function shall not allow the administrator to type in the criteria input box. This function shall display the list of statements of the checklist for the selected criterion. The administrator shall select a statement from the list. This function shall not allow the administrator to type in the statement input box.

iii. Process

This function shall check whether any project is using the selected statement. If yes, the function shall display an error message stating that the statement cannot be deleted because it is in use. If no, the function shall delete the statement from the checklist.

iv. Output

The statement is deleted.

6.0 Grading Scheme Handling

The operations in handling grading schemes allow the following:

i. system assigns default grading scheme to a factor

ii. administrator updates grading scheme of a factor

6.1 System Assigns Default Grading Scheme to a Factor

i. Introduction

This function assigns the default grading scheme to a factor when a factor is created.

ii. Input

Nil
iii. Process

The table below shows the default grading scheme for a factor. This function shall assign the default grading scheme to the factor.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Lower Score (%)</th>
<th>Upper Score (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Poor</td>
<td>0</td>
<td>19</td>
</tr>
<tr>
<td>Poor</td>
<td>20</td>
<td>39</td>
</tr>
<tr>
<td>Acceptable</td>
<td>40</td>
<td>59</td>
</tr>
<tr>
<td>Good</td>
<td>60</td>
<td>79</td>
</tr>
<tr>
<td>Excellent</td>
<td>80</td>
<td>100</td>
</tr>
</tbody>
</table>

iv. Output

The default grading scheme is assigned to the new factor.

6.2 Administrator Updates Grading Scheme of a Factor

i. Introduction

This function enables the administrator to update the grading scheme of a factor.

ii. Input

This function shall display the list of factors. The administrator shall select a factor from the list. This function shall not allow the administrator to type in the factor input box. This function shall allow the administrator to edit the upper scores of Very Poor, Poor, Acceptable and Good.

iii. Process

This function shall update the grading scheme for the selected factor.
iv. Output

The grading scheme for the selected factor is updated.

7.0 Analysis and Report

The operations for analysis and report allow the following:

i. user requests for factor score and criterion scores

ii. user requests for unfulfilled or unavailable statement

iii. user requests for factor and criterion information

iv. user requests for inter project factor analysis

v. administrator requests for report on all factors, criteria and checklists

vi. administrator requests for report on grading scheme for each factor

vii. administrator requests for report on all projects

viii. administrator requests for report on all users

7.1 User Requests for Factor Score and Criterion Scores

i. Introduction

This function analyses the selected factor for the opened project. The user can use this function if a project is opened and a factor is selected.

ii. Input

Nil
iii. Process

The function shall determine the statement score for each statement of each checklist for the selected factor in the following manner:

If a statement of a checklist is checked

\[ \text{Statement Score} = \begin{cases} 1 & \text{if checked} \\ 0 & \text{if not checked} \end{cases} \]

Else

\[ \text{Statement Score} = 0 \]

End If

The function shall calculate the criterion score for each criterion in the following manner:

If any statement of the checklist has not been updated before

\[ \text{Criterion Score} = \text{Not Available} \]

Else If one or more compulsory statements of the checklist are not checked

\[ \text{Criterion Score} = 0\% \text{ (failed)} \]

Else

\[ \text{Criterion Score} = \frac{\sum_{i=1}^{s} (\text{Statement Score}_i \times \text{Statement Weight}_i)}{\sum_{i=1}^{s} \text{Statement Weight}_i} \times 100\% \]

where \( S \) is the total number of statement of the checklist.

End If
The function shall calculate the factor score for the project in the following manner:

If one or more criterion scores are not available

$$\text{Factor Score} = \text{Not Available}$$

Else If one or more compulsory criteria fail

$$\text{Factor Score} = 0\% \text{ (failed)}$$

Else

$$\text{Factor Score} = \frac{\sum_{i=1}^{C} \text{(Criterion Score}_i \times \text{Criterion Weight}_i)}{\sum_{i=1}^{C} \text{Criterion Weight}_i} \times 100\%$$

where C is the total number of criterion for the factor.

End If

iv. Output

The function shall display the criterion score for each criterion. The function shall display the factor score.

7.2 User Requests for Unfulfilled or Unavailable Statements

i. Introduction

This function displays the unfulfilled and unavailable statements. The user can use this function if a project is opened and a factor is selected.

ii. Input

Nil
iii. Process

This function shall retrieve the following details from the database:

All criteria for this factor, whether each criterion is compulsory, weight of each criterion, unfulfilled or unavailable statements of checklists, whether they are compulsory and their weights.

iv. Output

This function shall display the following details:

All criteria for this factor, whether each criterion is compulsory, weight of each criterion, unfulfilled or unavailable statements of checklists, whether they are compulsory and their weights. This function shall group the unfulfilled or unavailable statements by criterion.

7.3 User Requests for Factor and Criterion Information

i. Introduction

This function displays the selected factor, factor details, criteria for the factor, and criterion details. The user can use this function if a project is opened and a factor is selected.

ii. Input

Nil
iii. Process

This function shall retrieve the following details from the database:

Factor description, all criteria for this factor, their descriptions, whether they are compulsory and their weight.

iv. Output

This function shall display the following details:

Selected factor, factor description, all criteria for this factor, their descriptions, whether they are compulsory and their weight.

7.4 User Requests for Inter Project Factor Analysis

i. Introduction

This function displays a bar graph on how a few projects score for a selected factor.

ii. Input

This function shall display the list of factors. This function shall require the user to select a factor from the list. This function shall display the list of projects. This function shall require the user to select one to five projects.

iii. Process

This function shall retrieve the factor scores for the selected projects.

iv. Output

This function shall display a bar graph on the score of the selected factor for each of the selected projects.
7.5 Administrator Requests for Report on All Factors, Criteria and Checklists

i. Introduction

This function displays a report on all the factors, criteria, checklists and their respective details.

ii. Input

Nil

iii. Process

This function shall retrieve the following details from the database:

All the factors, their descriptions, all criteria for each factor, their descriptions, whether they are compulsory, their weight, statements in the checklists for each factor, whether they are compulsory and their weight.

iv. Output

This function shall display a report with the following details:

All the factors, their descriptions, all criteria for each factor, their descriptions, whether they are compulsory, their weight, statements in the checklists for each factor, whether they are compulsory and their weight.
7.6 Administrator Requests for Report on Grading Scheme for Each Factor

i. Introduction

This function displays a report on the grading scheme for each factor.

ii. Input

Nil

iii. Process

This function shall retrieve the upper score and lower score for all the grades for each factor.

iv. Output

This function shall display a report on the upper score, lower score and grade for all the grades for each factor.

7.7 Administrator Requests for Report on All Projects

i. Introduction

This function displays a report on all the projects and their respective details.

ii. Input

Nil

iii. Process

This function shall retrieve the project name and project description for each project.
iv. Output

This function shall display a report on the project name and project description for each project.

7.8 Administrator Requests for Report on All Users

i. Introduction

This function displays a report on all the users, their respective details and the list of projects that each user has right to.

ii. Input

Nil

iii. Process

This function shall retrieve the user login ID, user name, user description and the list of projects that user has right to for each user.

iv. Output

This function shall display a report on the user login Id, user name, user description and list of projects that user has right to for each user.
Appendix III

FCMware Database Tables
i. Factor Table

Factor table stores the factor and factor details.

<table>
<thead>
<tr>
<th>Field</th>
<th>Data Type</th>
<th>Field Size</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor_Number</td>
<td>AutoNumber</td>
<td>Long Integer</td>
<td>key</td>
</tr>
<tr>
<td>Factor</td>
<td>Text</td>
<td>255 Characters</td>
<td>factor</td>
</tr>
<tr>
<td>Factor_Description</td>
<td>Text</td>
<td>255 Characters</td>
<td>factor description</td>
</tr>
</tbody>
</table>

ii. Criterion Table

Criterion table stores all the criteria for each factor.

<table>
<thead>
<tr>
<th>Field</th>
<th>Data Type</th>
<th>Field Size</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Criterion_Number</td>
<td>AutoNumber</td>
<td>Long Integer</td>
<td>key</td>
</tr>
<tr>
<td>Factor_Number</td>
<td>Number</td>
<td>Long Integer</td>
<td>to which factor this criterion belongs to</td>
</tr>
<tr>
<td>Criterion</td>
<td>Text</td>
<td>255 Characters</td>
<td>criterion</td>
</tr>
<tr>
<td>Criterion_Description</td>
<td>Text</td>
<td>255 Characters</td>
<td>criterion description</td>
</tr>
<tr>
<td>Criterion_Compulsory</td>
<td>Yes/No</td>
<td>Yes/No</td>
<td>whether criterion is compulsory</td>
</tr>
<tr>
<td>Criterion_Weight</td>
<td>Number</td>
<td>Integer</td>
<td>importance of criterion</td>
</tr>
</tbody>
</table>

iii. Checklist Table

Checklist table stores the statements of the checklists for each factor.

<table>
<thead>
<tr>
<th>Field</th>
<th>Data Type</th>
<th>Field Size</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statement_Number</td>
<td>AutoNumber</td>
<td>Long Integer</td>
<td>key</td>
</tr>
<tr>
<td>Criterion_Number</td>
<td>Number</td>
<td>Long Integer</td>
<td>to which criterion this statement belongs to</td>
</tr>
<tr>
<td>Statement</td>
<td>Text</td>
<td>255 Characters</td>
<td>statement</td>
</tr>
<tr>
<td>Statement_Compulsory</td>
<td>Yes/No</td>
<td>Yes/No</td>
<td>whether statement is compulsory</td>
</tr>
<tr>
<td>Statement_Weight</td>
<td>Number</td>
<td>Integer</td>
<td>statement weight</td>
</tr>
</tbody>
</table>
iv. Grade Table

Grade table stores the grading scheme for each factor.

<table>
<thead>
<tr>
<th>Field</th>
<th>Data Type</th>
<th>Field Size</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor_Number</td>
<td>Number</td>
<td>Long Integer</td>
<td>key to which factor this grading scheme belongs to</td>
</tr>
<tr>
<td>Lower_Score</td>
<td>Number</td>
<td>Integer</td>
<td>key lower score</td>
</tr>
<tr>
<td>Upper_Score</td>
<td>Number</td>
<td>Integer</td>
<td>key upper score</td>
</tr>
<tr>
<td>Grade</td>
<td>Text</td>
<td>50 Characters</td>
<td>grade (Very Poor, Poor, Acceptable, Good, Excellent)</td>
</tr>
</tbody>
</table>

v. Project_Factor

Project_Factor table stores the factor score for a project.

<table>
<thead>
<tr>
<th>Field</th>
<th>Data Type</th>
<th>Field Size</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project_Name</td>
<td>Text</td>
<td>255 Characters</td>
<td>key which project</td>
</tr>
<tr>
<td>Factor_Number</td>
<td>Number</td>
<td>Long Integer</td>
<td>key which factor</td>
</tr>
<tr>
<td>Factor_Score</td>
<td>Number</td>
<td>Integer</td>
<td>factor score</td>
</tr>
<tr>
<td>Factor_Score_Temp</td>
<td>Number</td>
<td>Integer</td>
<td>temporary factor score for reporting purpose</td>
</tr>
</tbody>
</table>

vi. Project_Criterion

Project_Criterion table stores the criterion scores for a project.

<table>
<thead>
<tr>
<th>Field</th>
<th>Data Type</th>
<th>Field Size</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project_Name</td>
<td>Text</td>
<td>255 Characters</td>
<td>Key which project</td>
</tr>
<tr>
<td>Criterion_Number</td>
<td>Number</td>
<td>Long Integer</td>
<td>key which criterion</td>
</tr>
<tr>
<td>Criterion_Score</td>
<td>Number</td>
<td>Integer</td>
<td>criterion score</td>
</tr>
<tr>
<td>Criterion_Score_Temp</td>
<td>Text</td>
<td>Integer</td>
<td>temporary criterion score for reporting purpose</td>
</tr>
</tbody>
</table>
vii. Project Checklist

Project Checklist table stores the fulfillment of the statements of the checklists for a project.

<table>
<thead>
<tr>
<th>Field</th>
<th>Data Type</th>
<th>Field Size</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project_Name</td>
<td>Text</td>
<td>255 Characters</td>
<td>key which project</td>
</tr>
<tr>
<td>Statement_Number</td>
<td>Number</td>
<td>Long Integer</td>
<td>key which statement</td>
</tr>
<tr>
<td>Fulfilled</td>
<td>Yes/No</td>
<td>Yes/No</td>
<td>whether this project fulfills this statement</td>
</tr>
</tbody>
</table>

viii. Admin Table

Admin table stores the administrator login account.

<table>
<thead>
<tr>
<th>Field</th>
<th>Data Type</th>
<th>Field Size</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admin Number</td>
<td>AutoNumber</td>
<td>Long Integer</td>
<td>key</td>
</tr>
<tr>
<td>Admin Login ID</td>
<td>Text</td>
<td>30 Characters</td>
<td>admin login ID</td>
</tr>
<tr>
<td>Admin Password</td>
<td>Text</td>
<td>30 Characters</td>
<td>admin login password</td>
</tr>
</tbody>
</table>

ix. User Table

User table stores the user login accounts.

<table>
<thead>
<tr>
<th>Field</th>
<th>Data Type</th>
<th>Field Size</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>User Number</td>
<td>AutoNumber</td>
<td>Long Integer</td>
<td>key</td>
</tr>
<tr>
<td>User Login ID</td>
<td>Text</td>
<td>30 Characters</td>
<td>user login ID</td>
</tr>
<tr>
<td>User Password</td>
<td>Text</td>
<td>30 Characters</td>
<td>user login password</td>
</tr>
<tr>
<td>User Name</td>
<td>Text</td>
<td>50 Characters</td>
<td>user name</td>
</tr>
<tr>
<td>User Description</td>
<td>Memo</td>
<td>255 Characters</td>
<td>user description</td>
</tr>
</tbody>
</table>
User_Project

User_Project table stores the list of projects that a user has the right to access.

<table>
<thead>
<tr>
<th>Field</th>
<th>Data Type</th>
<th>Field Size</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>User_Number</td>
<td>Number</td>
<td>Long Integer</td>
<td>key which user</td>
</tr>
<tr>
<td>Project_Name</td>
<td>Text</td>
<td>255 Characters</td>
<td>key which project</td>
</tr>
</tbody>
</table>
Appendix IV

FCMware User Manual
Contents

Part 1 FCMware Administrator User Manual ............................................. 1

1.1 Login to FCMware Administrator ......................................................... 1

1.2 Maintain FCM ..................................................................................... 1

1.2.1 Add New Factor ............................................................................. 3

1.2.2 Edit Existing Factor ....................................................................... 3

1.2.3 Delete Existing Factor ..................................................................... 3

1.2.4 Add New Criterion to a Factor ...................................................... 4

1.2.5 Edit Existing Criterion of a Factor .................................................. 4

1.2.6 Delete Existing Criterion of a Factor .............................................. 5

1.2.7 Add New Statement in a Checklist ................................................ 5

1.2.8 Edit Existing Statement in a Checklist ........................................... 6

1.2.9 Delete Existing Statement in a Checklist ....................................... 7

1.3 Maintain Grading Scheme .................................................................. 7

1.4 Maintain Project .................................................................................. 9

1.4.1 Add New Project ........................................................................... 10

1.4.2 Edit Existing Project ...................................................................... 11

1.4.3 Delete Existing Project .................................................................. 11

1.5 Maintain User .................................................................................... 11

1.5.1 Add New User ................................................................................ 13

1.5.2 Edit Existing User .......................................................................... 13

1.5.3 Delete Existing User ....................................................................... 14

1.6 Report on Factors, Criteria and Checklists ....................................... 14

1.7 Report on Grading Scheme for Each Factor ....................................... 15

1.8 Report on Projects ............................................................................. 15

1.9 Report on Users ................................................................................ 16

1.10 Change Administrator Login Details ................................................. 16

1.10.1 Change Admin Login ID .............................................................. 17

1.10.2 Change Admin Login Password ................................................... 17

1.10.3 Change Admin Login ID and Password ...................................... 17

1.11 Exit from FCMware Administrator .................................................... 18
Part 2 FCMware Client User Manual ........................................... 19
2.1 Login to FCMware Client ........................................... 19
2.2 Open a Project ........................................... 20
2.3 Close a Project ........................................... 21
2.4 Select a Factor ........................................... 21
2.5 Select a Criterion ........................................... 22
2.6 Check Fulfillness of Statements of a Checklist ....................... 23
2.7 View Details of Selected Factor and Its Criteria ....................... 24
2.8 View Details of Selected Factor and Its Criteria and Checklists ........... 24
2.9 View Grading Scheme of Selected Factor .......................... 25
2.10 View Report on Factor Score and Criterion Scores for a Project .......... 26
2.11 View Graph on Criterion Scores for a Selected Factor for a Project ........ 27
2.12 View Report on Unfulfilled Statements for Selected Factor for a Project .......... 28
2.13 Inter Analyse Projects ........................................... 29
2.14 Change User Login Password ...................................... 30
2.15 Exit from FCMware Client ........................................... 31
Part 1 FCMware Administrator User Manual

1.1 Login to FCMware Administrator

This function enables the administrator to login to FCMware Administrator.

At FCMware Login screen,

i. Select FCMware Administrator
ii. Enter administrator login ID
iii. Enter password
iv. Click on Login, or press Alt-L

Click on Reset, or press Alt-R to clear login ID and password entered.
Click on Exit, or press Alt-X to exit from FCMware.

Note: You have a maximum of three login attempts.

1.2 Maintain FCM

This function allows the administrator to add new, edit existing and delete existing factors, criteria and statements.
At FCMware Administrator main screen, Click on Maintenance-FCM, or Press Ctrl-F, or Click on Maintain Factors, Criteria and Checklists toolbar button.

The Maintain Factors, Criteria and Checklists screen is displayed.

Click on Close to close Maintain Factors, Criteria and Checklists screen.
1.2.1 Add New Factor

At Factor corner,

i. Select Add New from the list of factor modes
ii. Click on Go Factor Mode
iii. Enter factor
iv. Enter factor description (optional)
v. Click on Add New

Click on Reset to clear factor and factor description entered.

Note: A new factor can be added if new factor does not exist.

1.2.2 Edit Existing Factor

At Factor corner,

i. Select Edit from the list of factor modes
ii. Click on Go Factor Mode
iii. Select a factor from list of factors
iv. Edit factor and factor description
v. Click on Edit

Click on Reset to display original factor and factor description.

Note: A factor can be edited if edited factor does not exist.

1.2.3 Delete Existing Factor

At Factor corner,

i. Select Delete from the list of factor modes
ii. Click on Go Factor Mode
iii. Select a factor from list of factors
iv. Click on Delete

Note: A factor can be deleted if no project is using it.

Its respective criteria and statements in the checklists are deleted as well.
1.2.4 Add New Criterion to a Factor

At Factor corner,

i. Select Edit from the list of factor modes
ii. Click on Go Factor Mode
iii. Select a factor from the list of factors

At Criterion corner,

iv. Select Add New from the list of criterion modes
v. Click on Go Criterion Mode
vi. Enter criterion, criterion description (optional), whether criterion is compulsory and criterion weight.

vii. Click on Add New

Click on Reset to clear criterion, criterion description, whether criterion is compulsory and criterion weight entered.

Note: A new criterion can be added to a factor if the factor does not have the new criterion.

1.2.5 Edit Existing Criterion of a Factor

At factor corner,

i. Select Edit from the list of factor modes
ii. Click on Go Factor Mode
iii. Select a factor from the list of factors

At Criterion corner,

iv. Select Edit from the list of criterion modes
v. Click on Go Criterion Mode
vi. Select a criterion from the list of criteria
vii. Click on Go Criterion
viii. Enter the edited criterion, criterion description (optional), whether criterion is compulsory and criterion weight.
ix. Click on Edit
Click on Reset to display the original criterion, criterion description, whether criterion is compulsory and criterion weight.

Note: A criterion can be edited if the factor does not have the edited criterion.

1.2.6 Delete Existing Criterion of a Factor

At factor corner,
i. Select Edit from the list of factor modes
ii. Click on Go Factor Mode
iii. Select a factor from the list of factors

At Criterion corner,
iv. Select Delete from the list of criterion modes
v. Click on Go Criterion Mode
vi. Select a criterion from the list of criteria
vii. Click on Go Criterion
viii. Click on Delete

Note: A criterion can be deleted if no project is using it.

1.2.7 Add New Statement in a Checklist

At factor corner,
i. Select Edit from the list of factor modes
ii. Click on Go Factor Mode
iii. Select a factor from the list of factors

At Criterion corner,
iv. Select Edit from the list of criterion modes
v. Click on Go Criterion Mode
vi. Select a criterion from the list of criteria
vii. Click on Go Criterion
At Statements in Checklist corner,

viii. Select Add New from the list of statement modes
ix. Click on Go Statement Mode
x. Enter statement, whether statement is compulsory and statement weight
xi. Click on Add New

Click on Reset to clear the statement, whether statement is compulsory and statement weight entered.

Note: A new statement can be added to a checklist if the new statement has not existed in the checklist.

**1.2.8 Edit Existing Statement in a Checklist**

At factor corner,

i. Select Edit from the list of factor modes
ii. Click on Go Factor Mode
iii. Select a factor from the list of factors

At Criterion corner,

iv. Select Edit from the list of criterion modes
v. Click on Go Criterion Mode
vi. Select a criterion from the list of criteria
vii. Click on Go Criterion

At Statements in Checklist corner,

viii. Select Edit from the list of statement modes
ix. Click on Go Statement Mode
x. Enter the new statement, whether statement is compulsory and statement weight
xi. Click on Edit

Click on Reset to display the original statement, whether statement is compulsory and statement weight entered.
Note: A statement of a checklist can be edited if the edited statement has not existed in the checklist.

1.2.9 Delete Existing Statement in a Checklist

At factor corner,
i. Select Edit from the list of factor modes
ii. Click on Go Factor Mode
iii. Select a factor from the list of factors

At Criterion corner,
iv. Select Edit from the list of criterion modes
v. Click on Go Criterion Mode
vi. Select a criterion from the list of criteria
vii. Click on Go Criterion

At Statements in Checklist corner,
vi. Select Delete from the list of statement modes
ix. Click on Go Statement Mode
x. Select a statement from the list of statements in checklist
xi. Click on Delete

Note: A statement of a checklist can be deleted if no project is using it.

1.3 Maintain Grading Scheme

This function enables the administrator to edit the grading schemes of a factor.
At FCMware Administrator main screen,
Click on Maintenance-Grading Scheme, or
Press Ctrl-G, or
Click on Maintain Grading Schemes toolbar button.
The Maintain Grading Schemes screen is displayed.

i. Select a factor from the list of factors
ii. Click on Go Factor
iii. Enter the new upper scores for each grade
iv. Click on Edit

Click on Reset to display the original lower scores and upper scores for each grade.

Click on Close to close Maintain Grading Schemes screen.

1.4 Maintain Project

This function enables the administrator to add new, edit existing and delete existing projects.

At FCMware Administrator main screen,
Click on Maintenance-Project, or
Press Ctrl-P, or
Click on Maintain Projects toolbar button.
The Maintain Projects screen is displayed.

Click on Close to close Maintain Projects screen.

1.4.1 Add New Project

i. Select Add New from the list of project modes

ii. Click on Go Project Mode

iii. Enter project name and project description

iv. Click on Add New

Click on Reset to clear the project name and project description entered.

Note: A new project can be added if there is no project with this project name.
1.4.2 Edit Existing Project

i. Select Edit from the list of project modes
ii. Click on Go Project Mode
iii. Select a project from the list of projects
iv. Click on Go Project
v. Enter new project name and project description
vi. Click on Edit

Click on Reset to display the original project name and project description entered.

Note: A project can be edited if edited project name does not exist.

1.4.3 Delete Existing Project

i. Select Delete from the list of project modes
ii. Click on Go Project Mode
iii. Select a project from the list of projects
iv. Click on Go Project
v. Click on Delete

Note: When a project is deleted, information on the fulfillness of the statements of all its checklists is deleted as well.

1.5 Maintain User

This function enables the administrator to add new, edit existing and delete existing users.
At FCMware Administrator main screen, Click on Maintenance-User, or Press Ctrl-U, or Click on Maintain User Login Accounts toolbar button.

The Maintain User Login Accounts screen is displayed.

Click on Close to close Maintain User Login Accounts screen.
1.5.1 Add New User

i. Select Add New from the list of user modes

ii. Click on Go User Mode

iii. Enter the user login ID, user name, user password, confirm user password and user description (optional)

iv. Click on Add New

Click on Reset to clear the user login ID, user name, user password, confirm user password and user description (optional) entered.

Note: A new user can be added if the user login ID entered does not exist.

1.5.2 Edit Existing User

i. Select Edit from the list of user modes

ii. Click on Go User Mode

iii. Select a user from the list of users

iv. Click on Go User

v. Enter the new user login ID, user name and user description (optional)

vi. To add a project to the list of projects that user has right to, select the project from the list of projects, and click on Add Project

vii. To remove a project from the list of projects that user has right to, highlight the project in the list of projects that user has right to, and click on Remove Project

viii. Click on Edit

Click on Reset to display the original user login ID, user name, user password, confirm user password, user description (optional) and the list of projects that user has right to.

Note: A user can be edited if the edited user login ID does not exist.

User password cannot be edited by the administrator.
1.5.3 Delete Existing User

i. Select Delete from the list of user modes
ii. Click on Go User Mode
iii. Select a user from the list of users
iv. Click on Go User
v. Click on Delete

1.6 Report on Factors, Criteria and Checklists

This function enables the administrator to view the report on all the factors, and their respective factor description, criteria, criterion details, statements of each checklist and statement details.

At FCMware Administrator main screen, click on Report-FCM.

A report on all the factors, and their respective factor description, criteria, criterion details, statements of each checklist and statement details is displayed.
1.7 Report on Grading Scheme for Each Factor

This function enables the administrator to view the report on the grading scheme for each factor.

At FCMware Administrator main screen, click on Report-Grading Scheme.

A report on the grading scheme for each factor is displayed.

1.8 Report on Projects

This function enables the administrator to view the report on all the projects and their descriptions.

At FCMware Administrator main screen, click on Report-Project.

A report on all the projects and their respective description is displayed.
1.9 Report on Users

This function enables the administrator to view the report on all the users, and their respective details and the list of projects that each user has right to.

At FCMware Administrator main screen, click on Report-User.

A report on all the users, their respective details and the list of projects that each user has right to is displayed.

1.10 Change Administrator Login Details

This function enables the administrator to change the administrator login Id and password.

At FCMware Administrator main screen,
Click on Admin-Change Admin Login Details, or
Click on Change Administrator Login Details toolbar button.
The Change Administrator Login Details screen is displayed.

1.10.1 Change Admin Login ID

i. Enter the new login ID and old password

ii. Enter the new password and confirm new password as old password

iii. Click on Change

1.10.2 Change Admin Login Password

i. Enter the old password, new password and confirm new password

ii. Click on Change

1.10.3 Change Admin Login ID and Password

i. Enter new admin login ID, old password, new password and confirm new password

ii. Click on Change

Click on Reset to clear the old password, new password and confirm the new password entered.

Click on Close to close Change Admin Login Details screen.
1.11 Exit from FCMware Administrator

This function enables the administrator to exit from FCMware Administrator.

At FCMware Administrator main screen,
Click on File-Exit, or
Press Alt-X.

FCMware Administrator confirms whether to exit.
Click on OK to exit from FCMware Administrator, or
Click on Cancel to cancel exit from FCMware Administrator.
Part 2 FCMware Client User Manual

2.1. Login to FCMware Client

This function enables the user to login to FCMware Client.

At FCMware Login screen,

i. Select FCMware Client
ii. Enter user login ID
iii. Enter password
iv. Click on Login, or press Alt-L

Click on Reset, or press Alt-R to clear login ID and password entered.
Click on Exit, or press Alt-X to exit from FCMware.

Note: You have a maximum of three login attempts.
2.2 Open a Project

This function enables the user to open a project that the user has right to.

At FCMware main screen,
Click on File-Open, or
Press Ctrl-O, or
Click on Open a Project toolbar button.
The Open a Project screen is displayed.

i. Select a project from list of projects that the user has right to
ii. Click on Open

Click on Cancel to close Open a Project screen without opening a project.

2.3 Close a Project

This function enables the user to close an opened project.

Note: You can close a project if a project is opened.

At FCMware main screen,
Click on File-Close, or
Press Ctrl-L.

2.4 Select a Factor

This function enables the user to select a factor from the list of factors.

Note: You can select a factor if a project is opened.
At FCMware main screen,

i. Select a factor from the list of factors

ii. Click on Go Factor, or press Alt-T

List of criteria of selected factor is loaded.

2.5 Select a Criterion

This function enables the user to select a criterion from the list of criterion of a selected factor.

Note: You can select a factor if a project is opened and a factor is selected.

At FCMware main screen,

i. Select a criterion from the list of criteria for the selected factor

ii. Click on Go Criterion, or press Alt-C

Criterion weight and whether criterion is compulsory are displayed.

For each statement in the checklist, the statement, whether statement is compulsory, statement weight and statement fulfillness are displayed.
2.6 Check Fulfillness of Statements of a Checklist

This function enables the user to check the fulfillness of the statements of the checklist of a selected criterion.

Note: You can check the fulfillness of the statements in a checklist if a project is opened, a factor is selected and a criterion is selected.

For each statement of the checklist, click on its check box if the project fulfills the statement.

Click on Next, or press Alt-N to view the next ten statements of the checklist.
Click on Back, or press Alt-B to view the previous ten statements of the checklist.

Click on Update, or press Alt-U to update the fulfillness of all the statements of this checklist for this project in the database.
2.7 View Details of Selected Factor and Its Criteria

This function enables the user to view report on the selected factor, factor details, its criteria and criterion details.

Note: You can view the details of a selected factor and its criteria if a project is opened and a factor is selected.

At FCMware main screen, click on View-Factor Criteria.

The report on the factor and criteria is displayed.

2.8 View Details of Selected Factor and Its Criteria and Checklists

This function enables the user to view the report on the selected factor, factor details, its criteria, criterion details, statements in each checklist and statement details.

Note: You can view the details of the selected factor, its criteria and checklists if a project is opened and a factor is selected.
At FCMware main screen,
Click on View-Factor Criteria Checklists, or
Press Ctrl-K, or
Click on View Details of Selected Factor toolbar button.

The report on the factor, criteria and checklists is displayed.

2.9 View Grading Scheme of Selected Factor

This function enables the user to view the report on the grading scheme of the selected factor.

Note: You can view the grading scheme of a selected factor if a project is opened and a factor is selected.

At FCMware main screen, click on View-Factor Grading Scheme.

The report on the grading scheme of the selected factor is displayed.
2.10 View Report on Factor Score and Criterion Scores for a Project

This function enables the user to view the report on the scores of the selected factor and its criteria for the opened project.

Note: You can view the report on the factor score and criterion scores for a project if a project is opened and a factor is selected.

At FCMware main screen,
Click on Analysis-Factor Criteria, or
Press Ctrl-F, or
Click on View Factor Score and Criterion Scores toolbar button.

The report on the factor score and criterion scores of the selected factor for the opened project is displayed.
2.11 View Graph on Criterion Scores for a Selected Factor for a Project

This function enables the user to view the graph on the scores of the criteria for the selected factor for the opened project.

Note: You can view the graph on the criterion scores for a selected factor for a project if a project is opened and a factor is selected.

At FCMware main screen,
Click on Analysis-Criterion Scores, or
Press Ctrl-C, or
Click on View Graph on Criterion Scores for This Factor toolbar button.

The graph on the criterion scores for the selected factor for the opened project is displayed.
2.12 View Report on Unfulfilled Statements for Selected Factor for a Project

This function enables the user to view the report on the unfulfilled and unavailable statements for the selected factor for a project.

Note: You can view the report on the unfulfilled and unavailable statements for a selected factor for a project if a project is opened and a factor is selected.

At FCMware main screen,
Click on Analysis-Statements Unfulfilled, or
Press Ctrl-S, or
Click on View Report on Unfulfilled and Unavailable Statements for This Factor toolbar button.

The report on the unfulfilled and unavailable statements for the selected factor for the opened project is displayed.
2.13 Inter Analyse Projects

This function enables the user to view the report on the scores of a selected factor for one to five projects.

At FCMware main screen, click on InterAnalysis.

The Inter Project Analysis screen is displayed.
To display the factor scores of one to five projects, do the following:

i. Select a factor from the list of factor, and click on Go Factor.

ii. To select a project to analyse, select a project from the list of project, and click on Add Project. Selected project is shown in table.

   To remove a project, click on a project, and click on Remove Project.

iii. Click on Analyse to analyse the selected factor for the selected projects.

iv. Graph on the scores of the selected factor for the selected projects is displayed

Click on Close to close the Inter Project Analysis screen.

Note: You can analyse a maximum of five projects.

2.14 Change User Login Password

This function enables the user to change the user login password.

At FCMware main screen,
Click on User-Change Password, or
Click on Change User Login Password toolbar button.
The Change User Login Password screen is displayed.

Enter the old password, new password and confirm new password.
Click on Change to change password.

Click on Reset to clear the old password, new password and confirm new password entered.
Click on Close to close Change User Login Password screen.

2.15 Exit from FCMware Client

This function enables the user to exit from FCMware Client.

At FCMware main screen,
Click on File-Exit, or
Press Alt-X.
FCMware confirms whether to exit.
Click on OK to exit from FCMware, or
Click on Cancel to cancel exit from FCMware.
Appendix V

Reports on SRS Understandability Scores
### Analysis on
**Factor SRS Understandability for Generic Office Environment (Document Management System)**

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Criterion Completeness</td>
<td>44%</td>
</tr>
<tr>
<td>Criterion Conciseness</td>
<td>67%</td>
</tr>
<tr>
<td>Criterion Consistency</td>
<td>60%</td>
</tr>
<tr>
<td>Criterion Structuredness</td>
<td>71%</td>
</tr>
</tbody>
</table>

Factor SRS Understandability Score: 61%

### Analysis on
**Factor SRS Understandability for Online Stock Management (OSM)**

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Criterion Completeness</td>
<td>44%</td>
</tr>
<tr>
<td>Criterion Conciseness</td>
<td>67%</td>
</tr>
<tr>
<td>Criterion Consistency</td>
<td>60%</td>
</tr>
<tr>
<td>Criterion Structuredness</td>
<td>71%</td>
</tr>
</tbody>
</table>

Factor SRS Understandability Score: 61%

### Analysis on
**Factor SRS Understandability for Software Tool to Implement FDM (FCMware)**

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Criterion Completeness</td>
<td>78%</td>
</tr>
<tr>
<td>Criterion Conciseness</td>
<td>100%</td>
</tr>
<tr>
<td>Criterion Consistency</td>
<td>80%</td>
</tr>
<tr>
<td>Criterion Structuredness</td>
<td>71%</td>
</tr>
</tbody>
</table>

Factor SRS Understandability Score: 82%
Appendix VI

FCMware Sample Reports

i. Bar Graph on Score Analysis

ii. FCM Report

iii. Grading Scheme Report

iv. User Report
Score Analysis on
SRS Understandability
for Configurable Template for Accounting Systems (WebAcc)

SRS Understandability 59 %
<table>
<thead>
<tr>
<th>No.</th>
<th>Effectiveness of Requirements Gathering Interview</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>An interview possesses the quality factor effectiveness to the extent that the outcome of the interview aids the preparation of the software requirements specification.</td>
</tr>
<tr>
<td></td>
<td><strong>Completeness</strong></td>
</tr>
<tr>
<td></td>
<td>A requirements gathering interview possesses the quality criterion completeness to the extent that all the necessary preparation and planning for the interview are carried out.</td>
</tr>
<tr>
<td></td>
<td>An objective has been determined before the interview.</td>
</tr>
<tr>
<td></td>
<td>Questions have been formulated before the interview.</td>
</tr>
<tr>
<td></td>
<td>Interviewees have been identified before the interview.</td>
</tr>
<tr>
<td></td>
<td>Appointments have been made with interviewees before the interview.</td>
</tr>
<tr>
<td></td>
<td>Each appointment states interview objective, time and venue.</td>
</tr>
<tr>
<td></td>
<td>Each appointment has been confirmed before the interview.</td>
</tr>
<tr>
<td></td>
<td>A report has been produced for each completed interview.</td>
</tr>
<tr>
<td></td>
<td>Each report has been verified with the interviewee.</td>
</tr>
<tr>
<td></td>
<td><strong>Conciseness</strong></td>
</tr>
<tr>
<td></td>
<td>A requirements gathering interview possesses the quality criterion conciseness to the extent that only relevant questions are asked.</td>
</tr>
<tr>
<td></td>
<td>Questions are related to interview objective.</td>
</tr>
<tr>
<td></td>
<td>Questions are specific and not general.</td>
</tr>
<tr>
<td></td>
<td><strong>Understandability</strong></td>
</tr>
<tr>
<td></td>
<td>A requirements gathering interview possesses the quality criterion understandability to the extent that the interviewee can answer each question without further queries.</td>
</tr>
<tr>
<td></td>
<td>Simple language is used during the interview.</td>
</tr>
<tr>
<td></td>
<td>Questions are based on common concepts.</td>
</tr>
<tr>
<td></td>
<td>Questions are based on widespread information.</td>
</tr>
<tr>
<td></td>
<td>Ambiguous words are clarified.</td>
</tr>
<tr>
<td></td>
<td>Each question has an interpretation only.</td>
</tr>
<tr>
<td></td>
<td>Same entity, feature or concept is referred to with the same term.</td>
</tr>
<tr>
<td></td>
<td>Questions are ordered according to priority.</td>
</tr>
</tbody>
</table>
## Grading Scheme

### Effectiveness of Requirements Gathering Interview

<table>
<thead>
<tr>
<th>No.</th>
<th>Factor</th>
<th>Grade</th>
<th>Lower Score</th>
<th>Upper Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Effectiveness of Requirements Gathering Interview</td>
<td>Very Poor</td>
<td>0</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Poor</td>
<td>30</td>
<td>49</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acceptable</td>
<td>50</td>
<td>69</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Good</td>
<td>70</td>
<td>89</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Excellent</td>
<td>90</td>
<td>100</td>
</tr>
</tbody>
</table>

### SRS Understandability

<table>
<thead>
<tr>
<th>No.</th>
<th>Factor</th>
<th>Grade</th>
<th>Lower Score</th>
<th>Upper Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>SRS Understandability</td>
<td>Very Poor</td>
<td>0</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Poor</td>
<td>20</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acceptable</td>
<td>40</td>
<td>59</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Good</td>
<td>60</td>
<td>79</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Excellent</td>
<td>80</td>
<td>100</td>
</tr>
<tr>
<td>No.</td>
<td>User Login ID</td>
<td>User Name</td>
<td>User Description</td>
<td></td>
</tr>
<tr>
<td>-----</td>
<td>---------------</td>
<td>------------------</td>
<td>-------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>pyen</td>
<td>Man Peck Yen</td>
<td>MIS department user</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Project Name</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Configurable Template for Accounting Systems (WebAcc)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Generic Office Environment (Document Management System)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>weiyin</td>
<td>Chew Wei Yin</td>
<td>This user has access rights to all projects</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Project Name</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Configurable Template for Accounting Systems (WebAcc)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Generic Office Environment (Document Management System)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Investor Relations Unit - Personal Information Manager (IRU-PIM)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Online Stock Management (OSM)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Software Tool to Implement FCM (FCMware)</td>
<td></td>
</tr>
</tbody>
</table>

Date: 30 April 2000