APPENDIX A: GRAT Object-Oriented Analysis And Design

GRAT analysis and diagrams consists of a number of diagrams. These include use-case diagrams made in the analysis stage to the interaction and collaboration diagram made in the design stage. The diagrams are presented in this appendix.

A.1 Use-Case Diagrams

The use-case diagrams depicted in different diagrams based on the phases identified in Chapter 4.

A.1.1 Project Repository

![Diagram of Project Repository use-cases](image)

*Figure A.1: GRAT Project Repository use-cases*

A.1.2 Domain Understanding

*Groupware Supported Requirements Analysis Tool*
Figure A.2: GRAT Domain Understanding use-cases
A.1.3 Requirements Collection

Figure A.3: GRAT Requirements Collection use-cases
APPENDIX A: GRAT Object-Oriented Analysis And Design

A.1.4 Categories Collection

Figure A.4: GRAT Categories Collection use-cases
A.1.5 Classification

Figure A.5: GRAT Classification use-cases
A.1.6 Conflict Resolution

Figure A.6: GRAT Conflict Resolution use-cases
A.1.7 Prioritizing

Figure A.7: GRAT Prioritizing use-cases
A.1.8 Validation

Figure A.8: GRAT Validation use-cases
A.1.9 Activity Scheduling

![Activity Scheduling Diagram]

Figure A.9: GRAT Activity Scheduling use-cases
APPENDIX A: GRAT Object-Oriented Analysis And Design

A.2 Class Diagrams

The class diagrams depicted in the following diagrams are based on the classes and its relationship identified in Chapter 4.

Figure A.10: GRAT Users class diagram.

Figure A.11: GRAT system classes.
Figure A.12: Projects class diagram created on GRAT.

Figure A.13: Create project class diagram.

Figure A.14: Submitting documents for Domain Understanding class diagram.

Figure A.15: Submitting requirement for Requirement Collection class diagram
Figure A.16: Submitting categories for Categories Collection class diagram.

Figure A.17: Classification process class diagram.

Figure A.18: Submitting conflict for Conflict Resolution class diagram.

Figure A.19: Submitting validation for Categories Collection class diagram.
A.3 Interaction

The interaction diagrams depicted in this section will represent the set of message exchanged among objects within a collaboration to effect a desired operation and result based on the phases identified in Chapter 4.
A.3.1 Log in

Figure A.20: Log in interaction diagram.
A.3.2 Create New Project

Figure A.21: Creating new project interaction diagram.
A.3.3 Choosing Team Members for Project

![Diagram of choosing team members interaction](image)

Figure A.22: Choosing team members interaction diagram.
A.3.4 Viewing Projects in Project Repository

Figure A.23: Viewing projects interaction diagram.
A.3.5 Changing phases

Figure A.24: Changing phases interaction diagram.
A.3.6 Deleting documents at any phase

Figure A.25: Deleting document interaction diagram.
A.3.7 Submitting Documents in Domain Understanding

Figure A.26: Add document in Domain understanding interaction diagram.
A.3.8 Viewing in Domain Understanding

Figure A.27: Viewing in Domain Understanding interaction diagram.
A.3.9 Submitting Requirements

![Diagram of submitting requirements interaction](image)

*Figure A.28: Submitting requirements interaction diagram.*
A.3.10 Submitting Categories

Figure A.29: Submitting categories interaction diagram.
A.3.11 Classification

1. request to do classification
2. verify if user have submitted earlier
3. show classification form
4. submits classification form
5. check for any undone ones
6. submits to server
7. updates list
8. show submitted list of name

Figure A.30: Classification interaction diagram

A.3.12 Computation of Classification Result
Figure A.31: Computation of classification result interaction diagram.

A.3.13 Submitting Conflicts
Figure A.32: Submitting conflicts interaction diagram.

A.3.14 Responding to Conflicts
Figure A.33: Responding to conflicts interaction diagram.

A.3.15 Prioritization
Figure A.34: Prioritization interaction diagram.

A.3.16 Computation of Prioritization
Figure A.35: Computation of prioritization interaction diagram.

A.3.17 Validation
Figure A.36: Validation interaction diagram.

A.3.18 Activity Scheduling
Figure A.37: Activity scheduling interaction diagram.
APPENDIX B: GRAT User Interface Design

This figures and diagrams presented here are captured from GRAT during run-time. This appendix is separated accordingly to the various phases of GRAT

B.1 Project Repository

![Yahoo!'s login prompt](image)

Figure B.1: GRAT's login prompt

Groupware Supported Requirements Analysis Tool 166
APPENDIX B: GRAT User Interface Design

Figure B.2: Viewing all active projects

Figure B.3: Creating a new project
Applications B: GRAT User Interface Design

Figure B.4: Choosing Team Members

![Image of Address Book - Microsoft Internet Explorer](image)

Figure B.5: Listing of the created Project

![Image of Project Repository](image)

B.2 Project Main Page
### B.3 Domain Understanding

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<th>Month</th>
<th>July 2000</th>
<th>August 2000</th>
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<td>Saturday</td>
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<td>Sunday</td>
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</tbody>
</table>

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**Figure B.6: As viewed by Project Manager**

**Figure B.7: As viewed by other Team Members**
APPENDIX B: GRAT User Interface Design

Figure B.8: List of information being shared.

Figure B.9: Submitting information or files for sharing

B.4 Requirements Collection
APPENDIX B: GRAT User Interface Design

![Figure B.10: Requirements being collected](image)

![Figure B.11: Edit submitted requirements by author of the requirement](image)

B.5 Categories Collection
Figure B.12: List of Requirements and the Categories

Figure B.13: Submitting Categories

B.6 Classification
APPENDIX B: GRAT User Interface Design

Figure B.14: Classification process

Classification Result for Clinic Management System
by Dr Siti/Hei

1. Security
   - The high level user and the super administrator can access this query.
   - The information to be stored for a user are name, password, permanent address, correspondence address, nationality, passport, race, religion, state and province occupation

2. Patient
   - All of the transactions shall be processed in less than 2 seconds.
   - Administrative high level & low level shall be able to edit his own details in the system.
   - The super administrator shall be able to delete users’ records
   - The system shall allow the high level administrator to edit the diagnosis record
   - This system shall intercede with the database system when retrieving information, adding information and updating information. In other times, the system shall run without communicating with the database system

3. Staff
   - The System shall display a password entry screen for users to key in their password
   - The system shall allow the high level administrator to add the diagnosis record

4. Inventory

Figure B.15: Preview before submitting

B.7 Conflict Resolution
APPENDIX B: GRAT User Interface Design

Figure B.16: Categorized Requirements

Figure B.17: Submit Conflicts
APPENDIX B: GRAT User Interface Design

Figure B.18: Conflicts updated

Figure B.19: Respond to the conflict
Figure B.20: Updated conflicts and responds view
B.8 Prioritization

Figure B.21: Prioritizing Requirements

Figure B.22: Preview before submitting

B.9 Requirements Validation
Figure B.23: Prioritized Requirements

Figure B.24: Requirements validation form
Figure B.25: Update validation information
APPENDIX B: GRAT User Interface Design

B.10 Activity Scheduling

Figure B.26: Submitting schedule activity

Figure B.27: Schedule updated into main project web page
APPENDIX C: GRAT Questionnaire

Section A: Participants background.
Please tick (✓) at the appropriate column.

1. How well did you know requirements analysis process before using the GRAT?
   1 [ ] Very good
   2 [ ] Good
   3 [ ] Moderate
   4 [ ] Very little
   5 [ ] Not at all

2. Have you ever used any tools that support distributed working particularly in a group environment?
   1 [ ] Yes
   2 [ ] No

If yes, please answer the following questions, otherwise move to Section B.

a. Name of the tool(s):

b. Describe the tool(s) that you have used briefly.

______________________________

______________________________

______________________________

______________________________
### APPENDIX C: GRAT Questionnaire

**Section B: Ease of Use**
*Please tick (√) at the appropriate column.*

<table>
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<th></th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>It is relatively easy to move from one part of a task to another.</td>
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<tr>
<td>2.</td>
<td>The software always did what I was expecting</td>
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<td>3.</td>
<td>The instructions and prompts are helpful</td>
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<tr>
<td>4.</td>
<td>I can understand and act on the information provided by this application.</td>
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<tr>
<td>5.</td>
<td>I feel in command of this application when I am using it.</td>
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<tr>
<td>6.</td>
<td>It is easy to see at a glance what the options are at each stage.</td>
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<td>7.</td>
<td>Tasks can be performed in a straightforward manner using this application.</td>
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<td>8.</td>
<td>The speed of this application is fast enough</td>
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<td>9.</td>
<td>The software has a very attractive presentation.</td>
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<td>10.</td>
<td>Working with this application is satisfying</td>
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<td></td>
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</table>
Section C: Components Functionality.
Please tick (√) at the appropriate column.

1. In Project Repository,

a) How do you feel about the workflow implemented in creating the project?
   1 [ ] Very easy
   2 [ ] Easy
   3 [ ] Average
   4 [ ] Difficult
   5 [ ] Very difficult

b) Could you gain easy access to the project web site?
   1 [ ] Always
   2 [ ] Most of the time
   3 [ ] Moderate
   4 [ ] Very little
   5 [ ] Never

2. In Domain Understanding, how easy did you find it was to share information regarding the project?
   1 [ ] Very easy
   2 [ ] Easy
   3 [ ] Average
   4 [ ] Difficult
   5 [ ] Very difficult

3. In Requirements Collection,

a) How easy did you find it was to produce requirements in a brainstorming manner regarding the project by using GRAT?
   1 [ ] Very easy
   2 [ ] Easy
   3 [ ] Average
   4 [ ] Difficult
   5 [ ] Very difficult

b) Would you agree that by using GRAT, the requirements were more easily collected than previous methods that you used to apply?
   1 [ ] Totally agree
   2 [ ] Agree
   3 [ ] Average
   4 [ ] Disagree
   5 [ ] Totally disagree
4. In Classification, did you find it easy to match the requirements with the appropriate classification by using GRAT?
   1 [ ] Very easy
   2 [ ] Easy
   3 [ ] Average
   4 [ ] Difficult
   5 [ ] Very difficult

5. In Conflict Resolution,
   a) How good was it in solving and clarifying doubts and conflicts?
      1 [ ] Very good
      2 [ ] Good
      3 [ ] Average
      4 [ ] Bad
      5 [ ] Very bad.
   b) How did you find the hierarchy listing of the doubts and the clarifications for the doubts or conflicts?
      1 [ ] Totally Effective
      2 [ ] Effective
      3 [ ] Average
      4 [ ] Ineffective
      5 [ ] Totally Ineffective

6. In Prioritization,
   a) Did you find that all necessary information was included that helped you to match the requirements with the appropriate priority?
      1 [ ] Always
      2 [ ] Most of the time
      3 [ ] Moderate
      4 [ ] Very little
      5 [ ] Never
   b) How did the results of the prioritization effective?
      1 [ ] Totally Effective
      2 [ ] Effective
      3 [ ] Average
      4 [ ] Ineffective
      5 [ ] Totally Ineffective

7. In Requirements Validation,
APPENDIX C: GRAT Questionnaire

a) How good would you rate the requirements invalid form?
   1 | Very good
   2 | Good
   3 | Average
   4 | Bad
   5 | Very bad.

b) Did it effectively help you in identifying the invalid requirements?
   1 | Totally Effective
   2 | Effective
   3 | Average
   4 | Ineffective
   5 | Totally Ineffective

8. In Activity Scheduling,

a) Was electronic mail (e-mail) notifications helpful?
   1 | Totally helpful
   2 | Helpful
   3 | Average
   4 | Unhelpful
   5 | Totally unhelpful

b) How effective is the scheduling in the tracking the project development?
   1 | Totally Effective
   2 | Effective
   3 | Average
   4 | Ineffective
   5 | Totally Ineffective

c) How useful were the utilities provided?
   1 | Totally helpful
   2 | Helpful
   3 | Average
   4 | Unhelpful
   5 | Totally unhelpful

9. How would you rate the overall facilities provided in GRAT?

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<th>Totally Good</th>
<th>Fairly Good</th>
<th>Satisfactory</th>
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<th>Totally Poor</th>
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<td>b. Domain Understanding</td>
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APPENDIX C: GRAT Questionnaire

Section D: Objectives fulfillment of GRAT
Please tick (✓) at the appropriate column.

1. How would you rate the set of requirements produced by using GRAT?

<table>
<thead>
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<th></th>
<th>Completely satisfied</th>
<th>Satisfied</th>
<th>Average</th>
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<th>Completely dissatisfied</th>
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2. GRAT is a groupware application that supports and augments the activities of groupware. How would you rate GRAT for the following characteristics?

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Totally Good</th>
<th>Fairly Good</th>
<th>Satisfactory</th>
<th>Fairly Poor</th>
<th>Totally Poor</th>
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<tbody>
<tr>
<td>a) Arranging time to work together or for meetings. (e.g., brainstorming to produce a requirements list)</td>
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<td>b) Sharing information among group members. (e.g., providing information regarding the domain of the project to other group members)</td>
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<td>c) Having discussions and making decisions. (e.g., consolidating a requirements list)</td>
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<td>d) Participation of group members throughout the project</td>
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<td>e) Awareness of self involvement or participation during the project</td>
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<td>f) Communication between you and other team members throughout the requirements analysis process</td>
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APPENDIX C: GRAT Questionnaire

Section E: Enhancements of GRAT

1. What other enhancements could be done on GRAT that could improve the effectiveness of the system in your opinion.

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________

2. Is there anything else about the system that you would like to add?

__________________________________________________________________________

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