1.0 INTRODUCTION

From E-Connection (Internet) to E-Contents (Web Portals) to E-Commerce, the world is witnessing successive milestones of ongoing digital revolution - the former being pre-requisite of the latter. The digital revolution leading to information society is silently but surely triggering transformation of social infrastructure within the nation for its socio-economic development as well as acting as a vehicle to integrate itself as a part of global networked/digital economy. (Arvind Panagariya, 1999)

While there is no single globally accepted definition of E-Commerce, it is gradually leaning towards "goods and services transacted over Internet". E-Commerce is thus a new way of conducting, managing and executing business transactions using modern Information Technology. The Internet provides access 24 hours a day, seven days a week – any time anywhere. Thus, time and place are no longer the binding factors. Electronic Commerce builds on the structures of traditional commerce by adding the flexibility offered by electronic networks. This facilitates improvement in operations leading to substantial cost savings as well as increasing competitiveness and efficiency through the redesign of traditional business. (Kalakota, Ravi & Whinston A, 1996)

Payment gateways are credit card processing services that allow organizations to authorize and process credit card orders online in real time. Payment gateways act as a
bridge between the merchant’s website and the financial institutions that process the transaction. Payment gateways are an integral part of e-commerce. Existing brick and mortar companies may find that they can target a new market by selling online. Whether or not a business becomes more competitive by providing online sales will depend on the marketing mix, product, place, promotion and price. The marketing mix will help to determine whether the particular business will be competitive. (Kathy Brown, 2000)

Online course registration meaning students can register for classes online via a custom, Web-based registration application. Students can view and choose the list of all the online courses offered each semester.

1.1 Introduction of the Project

Online course registration and payment system is yet to apply in University of Malaya (UM), and other local universities in Malaysia as well. But, it is popular in European countries.

Online payment means using credit card (visa or master card) to pay fees for the course they have registered online. But, students can also directly pay cash to UM Bursar’s Office after they have registered their course online. All fees are payable after online course registration and registration is not complete until these fees have been paid. Fees are subject to change prior to each semester. All the payment record
such as mode of payment, credit card type, credit card number, expire date of the credit card, name of the card holder and address of the card holder will be stored in the database.

UM Bursar’s Office will process students’ credit card information immediately for an authorization after the students have made the online course registration. This means that UM Bursar’s Office will contact the bank electronically and verify that credit card information students have provided matches the credit card information where their credit cards are mailed. If the information they have provided is different from information that bank has provided to UM Bursar’s Office, the course registration will be delayed or canceled. UM Bursar’s Office will resolve problems that may arise from the address verification process by contact the bank or the student. UM Bursar’s Office will contact the local police department to report all fraudulent fees payment.

Online Postgraduate Course Registration and Payment System is implemented for the postgraduate students in Faculty of Computer Science and Information Technology (FSKTM) in University of Malaya. This project is done for postgraduate students in Faculty Computer Science & Information Technology, as the scope is too broad if it is expanded for all students in UM. The system will cater for students in Master of Information Technology, Master of Computer Science, Master of Library and Information Science, Master of Software Engineering, and PhD’s.
Besides registering online for their courses and make payment with this system, students can also view their latest timetable for the semester. For administrators, they can view, delete and update students’ record, course information, administrators’ information and registration report. User ID and password are needed for both students and administrators to access into the online course registration and administrator site.

1.2 Problem Statements

The current system of course registration and fees payment in UM shows inefficiency in the method of course registration and fees payment. UM allocates specific windows of time each semester for different populations of students to register for classes. The largest window is for the courses that are popular, and it accommodates nearly 400 to 1000 students trying to register simultaneously for that particular course. Therefore, every time during the registration period, course registration application will become overloaded, and some students experienced delays in registering for courses.

In addition, students have to wait in a long queue at the bank to pay their fees. After that, they have to go to UM Bursar’ Office to submit the bank statement to prove that they have paid the fees. The students have to queue up again.
Then, students have to endure another queue to submit their course registration form in the faculty’s office. On top of that, if the students want to change courses, UM staff will need to do a lot of work like checking all the information in the forms is correctly written by the students, check the redundancy of courses that register by students. After that, the staff will submit all the forms to the person in charge in order for him to record the new information into the database.

With the Web-based registration application, these problems are resolved. The students can access to the Web site to pay fees online and register their courses online.

1.3 Mission
The purpose of Online Postgraduate Course Registration and Payment System is to overcome the queuing problem and paperwork during course registration. It will facilitate faster course registration and payment process.

1.4 Objectives
This project has the following objectives:

❖ Online course registration and payment system can save students’ and UM administrators’ time in course registration and fees payment.
• Online course registration and fees payment will lessen queuing problem in Administrators Office, Bank and UM Bursar’s Office.

• Online course registration can avoid unnecessary hassle during course registration and increase the effectiveness of course registration process.

• Online course registration will decrease the workload of the UM administrators and staffs during and after the registration.

• Online payment using credit card will make the fees payment process faster rather than paying in bank or UM Bursar’s Office.

1.5 Project Scope

The scopes of the project are as follows:

➢ Develop a web application system for FSKTM postgraduate students to register their course and pay fees online.

➢ Implement course fees calculation facility for students during the process of course registration in the system.

➢ Provide the latest online timetable for students.

➢ Provide UM an administrative facility, where UM administrators can view, delete and update students’ records, course information as well as administrators’ records on the web.

➢ UM administrators can see the registration report after students register online.
1.6 Expected Outcomes

The final outcome of using this system is expected to have the following features.

- A web application system that can register students’ course and pay fees online.
- A web application system that enables UM administrators to view, delete and update course information, student records, and administrators information.
- A database system that will store and organize all records pertaining to the registration, such as the students personal information, administrator records, course registered by students, fees, and payment information.
- Automatic calculating facility for students to find out how much they need to pay.
- UM administrators can check the registration report after students register their course online.

1.7 Report

The purpose of this report is to document all the essential information gathered and used to develop this system. It covers several instructional design phases that include analysis, design, development, testing, implementation, and evaluation phase of the system. This report is divided into 6 chapters. A brief synopsis of each chapter is listed below.
Chapter 1: Introduction gives overview of developing the system, problem statements, project mission, objectives, project scope, and expected outcomes of the system.

Chapter 2: Literature Review serves to build up the basic knowledge of the setting up of the whole system, with the involvement of various softwares. For a better knowledge of developing the system, research of case studies also have been done. Software preference is also discussed, and comparison between softwares is done to choose the most suitable one.

Chapter 3: System Analysis focuses on the methodology of developing the system, project schedule, requirement analysis, where functional and non-functional requirements are described, run time requirement and also data flow diagram (DFD).

Chapter 4: System Design focuses on architectural design, system architecture, database design, and user interface design.

Chapter 5: System Testing and Implementation stresses on the implementation part and system testing.

Chapter 6: System Evaluations and Conclusions begin with various evaluation techniques. Technical problems, recommended solutions and future enhancement are also discussed here.