



---

# MINGALAR CINEMAS GROUP

Ticket Online Booking System

---

COMP 1181 - PROJECT



NOVEMBER 24, 2018

MCC.I  
Yangon

## Statement and Confirmation of Own Work

**Program/Qualification name:** PROJECT (INFORMATION SYSTEMS AND MULTIMEDIA)

Each University of Greenwich assessed assignment submitted by you must have this statement attached to the assignment as the cover page or it will not be accepted for marking. Please ensure that this statement is either firmly attached to the cover of the assignment or electronically inserted into the front of the assignment.

### Student Declaration

I have read and understood University of Greenwich's Policy on Academic Dishonesty and Plagiarism. I can confirm the following details:

Student ID : 001031940  
 Student Name : Aung Myo Myint  
 Campus Name : MCC Training Institute, Yangon  
 Course Name : Project (Information Systems and Multimedia)  
 Module Lecture : U Nyi Nyi  
 Number of words : 9431

I confirm that this is my own work and that I have not plagiarized any part of it. I have also noted the assessment criteria and pass mark for assignments.

Due Date	24 <sup>th</sup> November 2018
Student Signature	<i>Aung</i>
Submitted Date	24 <sup>th</sup> November 2018

## Table of Contents

Chapter 1 - Introduction.....	6
Explanation of existing System.....	7
Scope of new system, Mingalar Cinema Group Ticket Online Booking System.....	8
Chapter 2 - Software Development Life Cycle (SDLC) .....	9
Survey of Software Development Life Cycle .....	9
Reason for choosing the DSDM Atern Life-Cycle.....	12
Chapter 3 - System Development Approach .....	14
Types of system development approach .....	14
Reason for choosing Adaptive approach.....	15
Chapter 4 – System Investigation (Fact Finding Method) .....	17
Description about fact finding method .....	17
Choice of fact finding methods and reasons for choosing .....	18
Chapter 5 – Feasibility Study .....	19
Chapter 6 - Choice of System Analysis and Design Method.....	20
Survey System Analysis and Design Method .....	20
Reason for choosing OOAD .....	21
Chapter 7 – System Design Using Object Oriented Design Technique .....	23
System Design using UML Diagrams .....	23
Chapter 8 – Choice of Programming Language and Developer Tools.....	31
Survey of Programming Language .....	31
Reason for choosing PHP .....	32
Survey of Developer Tools .....	32
Reason for choosing Notepad++ .....	33
Chapter 9 – Choice of Database Management System .....	34
Survey Database Management System .....	34
Reason for choosing MySQL.....	34
Chapter 10 – System Testing.....	36
Testing Approach.....	36
Testing Levels.....	36
Stages of testing .....	37
Chapter 11 – System Implementation .....	48
Chapter 12 – Human Computer Interaction (HCI).....	53
User Analysis.....	54

Chapter 13 – System Security.....	55
The problem areas and the recommend solutions .....	55
Chapter 14 – Critical Appraisal.....	57
References .....	60

## Introduction

My name is Aung Myo Myint and now I'm studying B.sc in IT from Myanmar. My ID is 001031940 from MCC.i Yangon campus (section-13).

Aung Myo Myint

Mcc.i Yangon



## Chapter 1 – Introduction

All the people in nowadays want to spend their time usefully. Some read books and some get fun and some get relax in their free. For the different type of people, there are also different type of activities that can be done. As for me, I would like to recommend to watch movie in free time.

Watching movies can give the happiness, sadness, knowledge, excitement, scary or love. It entertains you what is happening in the world based on the real lives or some are as the ideas that can happen in future. And it is one of the best places to release the stress. They are not just movies, they speak for those who don't have a voice and they are based on the true stories and give lessons and at the end of the movie, we will know what to do if we have the condition such the one from the movies. So, we need to go to the cinema and watch a movie once a month or twice a month with a family or with friends.

In a cinema, over 60% of tickets are bought by the teenagers and 10% are old person. Most of them are coming with their friends or family or can also be couples but some came alone. In the days of the weekends, the tickets sell rates are so awesomely increasing. There is only two cinemas groups leading in Yangon and they are Mingalar and JCGV.

Mingalar Cinemas Group is the group of cinemas from Yagon, Mandalay, Bago, Taungoo, Magway, MawLaMyaing and Monywa. And the current project is aimed to improve to the online booking system for the cinemas from Yagon, (Thamada Cinema, Mingalar Sanpya, Cineplex Mingalar Cinema, Top Royal Cinema, Shae Saung Cinema, Mingalar Waziyar Cinema, Thwin Cinema, Nay Pyi Daw Cinema, Mingalar Cinema @ Dagon Center II, and Mingalar Cineplex). And the show-times range are started from 10am to 12pm, 12:30pm to 3:00pm, 3:30pm to 5:30, 6:00pm to 8:00pm and 8:15pm to 10pm.

As the technology is rapidly increasing, people are relying on their phone by internet. So, if we can make an online web-based system for the current system that is manual, it is sure that the booking process will be easier and the profits for the cinema will also increase and the loss in tickets can be saved. By making IT based system for the movie tickets online booking system, the customer can easily book from internet.

## Explanation of existing System

1. The location or contact information of a cinema can be known from online or may be from friends, family and can also from the advertisements on TV.
2. For the first step to get a ticket, we need to go to the cinema and checked the movies that is still showing or not.
  - Or he can get booking by phone to the cinema. But it is not for sure. Then when he arrived to the cinema, he would need to make payment for the phone booking.
3. Then we need to pick the one that is showing and select the show date and time.
4. Then, the available seats can be selected and make payment for the tickets where thicket's price is depend on the seat types.
5. For the staff, he will need to check the request booking details with the existing booking and then reply available or not.
6. If available, the customer will make payment and get the tickets. (or)
  - If not, the customer can cancel or remake booking at the other seat no or at the different show-time or on the different show-date.
7. Then, the final step is the staff would need to update the available booking list and reserved booking list and record the booking details.

## Problems of the current system

1. All of the cinemas access phone booking, but need to arrive 45 min earlier before the movie starts. If the customer late to the cinema, the ticket is not sure to confirm.
2. The cinema's phones are not always answered, most of them are in busy mode.
3. And the web pages on Facebook are not official site and not up-to-date and some may be fake so the information are not trusted.
4. If booking is made by phone, there could be error in recording the data like customer name, show time or the staff could forgot to record or the customer forgot to tell the seat number(s).
5. The customers will ask the same question again and again like what movie is showing now and what is the show time and the booking for the upcoming movies and so on. It made the staff get easily annoy or non-patient or angry in relation with customers.
6. The seats from the reseller are limited and can't get what the buyer want exactly and sometime the seats may be in separated place.
7. In the days like the very popular movies are showing, the cinema halls are full with various kind of ticket buyers. It is not good for both staff and customer. The tickets are sold out in rapidly in some cinemas and some are not.



## Scope of new system, Mingalar Cinema Group Ticket Online Booking System

The new system needs to allow customers to order online without having to come to the shop personally. It should store the customer's information and let them log in to book cinema ticket. New customers will need to register and make booking by choosing the cinema, movie and seats. The proposed system should take efficient in time form the side of the staffs and the customers. Make in efficient of time and money and the human power.

If the customer wants to cancel the booking, the system will able to update or delete the existing booking details and marked it as available and the new system is allowed to produce the reports for seats occupancy rate by cinema weekly and reports for weekly/monthly income by cinema and reports for most watched movie type by cinema.

The new system will be developed in DSDM Atern, Agile method (adaptive approach) and the requirements for the new system will be needed to make analysis in economic, technical, legal and in social. As the current system is based on the people, Object Oriented Analysis and Design method is aimed for the design by the use of the UML, use-case diagrams. Then OOP, object-oriented programming is used to implement the design. The tools will be required for OOP and the database management system will be shown below.

The new system will be tested in black box and white box testing method. The when the outcomes are constant or no errors, the new system will be implemented. And the one important to do is the security of the new online system. And the user interface will also need to consider to meet the user-experience goals.

## Functional scope of the proposed system

### Customer Scope

- Customer registration
- Customer login
- Search by cinema
- Select booking date
- Select showing movie
- Select show time
- Select available seat(s)
- Make booking
- Confirm booking
- View Invoice
- Make Payment Offline

### Admin Scope

- Insert/Update/Delete Schedule plan
- Insert/Update/Delete Movie data
- Insert/Update/Delete Cinema data
- Insert/Update/Delete Staff information

### Report

- Reports for monthly income by cinema
- Reports for monthly top three most watched movies list

## Chapter 2 - Software Development Life Cycle (SDLC)

Software Development Life-Cycle (SDLC) is a series of phases that provide a common understanding of the software building process. So whenever we develop a software, there are series of steps that need to be followed.

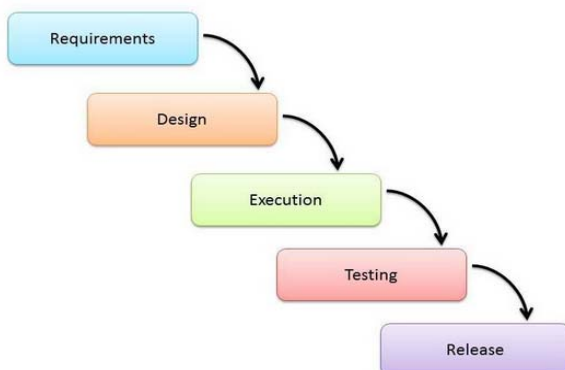


Although there are so many kinds of different lifecycle, the steps undertaken are based on evolution plan, analysis, design, implementation and maintenance.

### Survey of Software Development Life Cycle

#### Waterfall Model

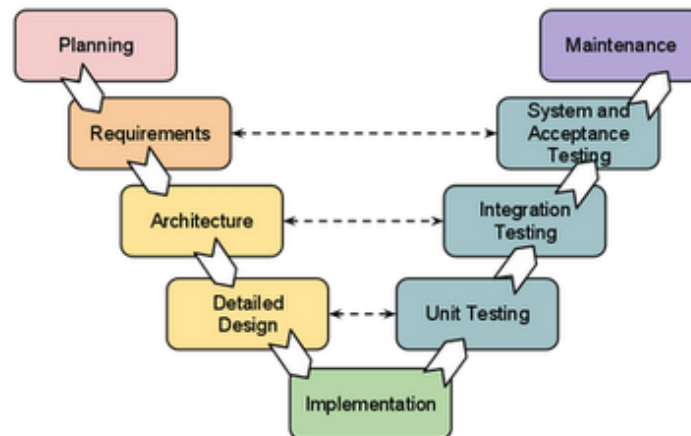
Waterfall Model is a sequential model of software development. It contains the steps of requirements, design, implementation, verification and maintenance and all the steps are followed in order, the second step cannot start until the first step finished and it is not flexible if one of the step is wrong, it can't go back to the previous step and it need to start from the first stage again.



Mostly used in the projects that are fixed in the requirements or when the organization clearly understand its requirement.

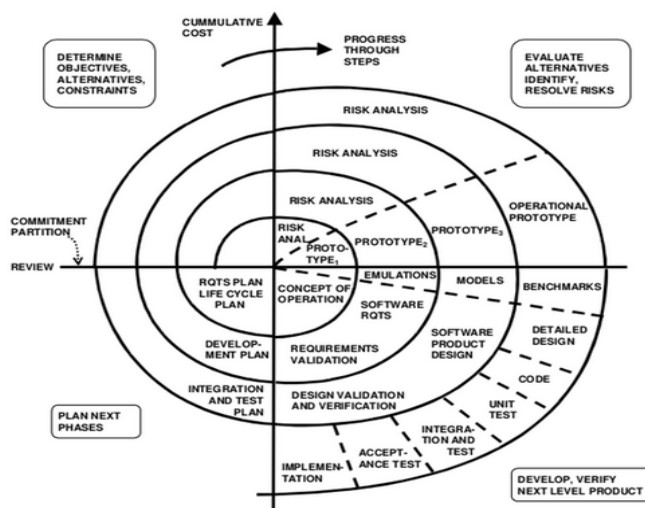
## V-Shaped Model

V-shaped model is an update version of the waterfall model and also called as validating and verification model. It contains the steps of business and operation process, system requirements, architecture design, modular design and development and coding taking one after another with downfall style and going up with each steps in testing.



So, it is called V shaped model. The early test planning in the V-shaped model is different with waterfall. It is used only when software requirements are clearly known are specific and the tools and technologies for the development can also get easily.

## Spiral Model (SDM)

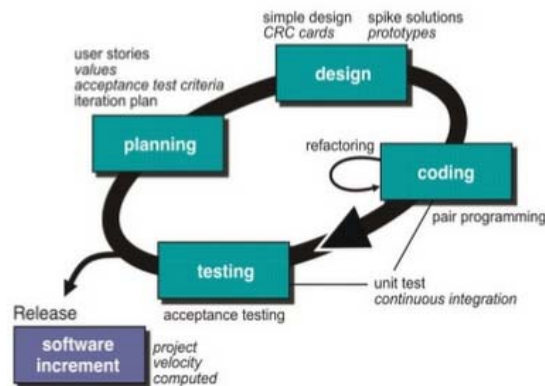


Spiral Model works in four steps of determine objectives, identify and resolve risk, development and test and plan next phases. It is the combination of risk analysis and prototyping in second step and in third stage, it looks more like waterfall, designing and the final step is plan

for the next iteration. It is mostly used for complicated and large and expensive projects by splitting up into small part.

### Extreme Programming (XP)

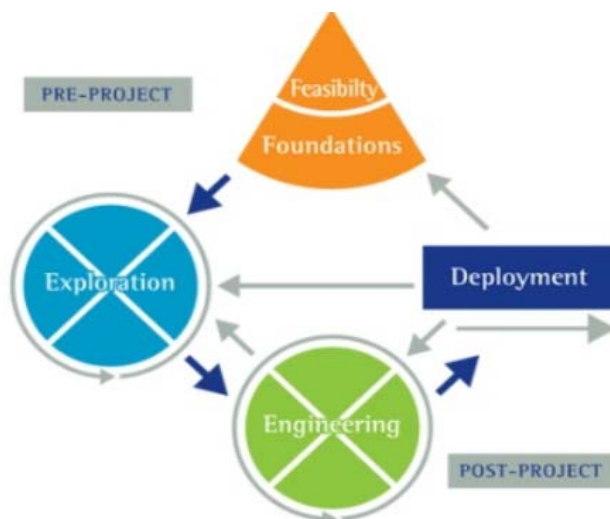
XP is one of the software development methodologies that is used in early development for the user involvement and aim to improve the quality. It need the skill persons to develop the multiple short development lifecycles, focusing on coding and reduces the time required by breaking into the small lifecycles rather the large one.



It is used to produce higher quality software and aim to reduce the cost in requirements by the short lifecycles.

### Dynamic System Development Methodology (DSDM Atern)

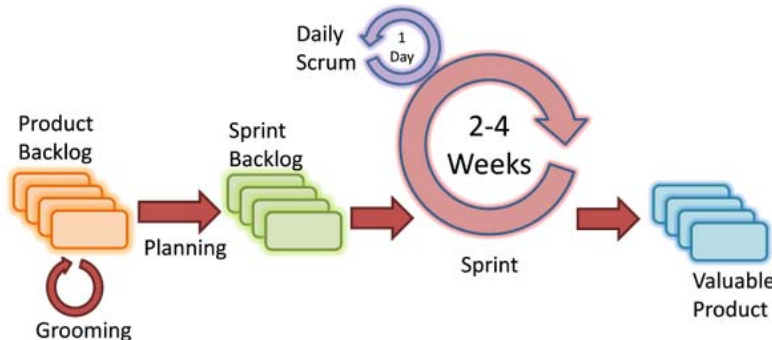
DSDM Atern is based on RAD approach, which use the iterative and incremental model for rapid development. It is used to target the quality as fixed, while the resources and time values are variable for the development.



© Copyright DSDM Consortium 2009. All rights reserved

DSDM is famous for its flexibility that allow the development to go back to the previous stage if one of the phase is wrong. And the user are allowed to involve in the development to identify the exact user requirements with the use of prototypes.

### Scrum Model



It is mostly used in product development, and also used when the requirement are not clear and the time given is less. The team works in by creating the sprint backlogs that they figure out and commit tasks by 15 min meeting every day, checking the reports from each members. The team members need to be skillful in different areas. This will enable more valuable and workable piece for software early which also increase the customer satisfaction.

### Reason for choosing the DSDM Atern Life-Cycle

The reasons for using DSDM Atern is that the user requirements are not exactly identified and to develop in the short time. Waterfall approach is not flexible, which means if one of the stages in waterfall is wrong, the lifecycle can't go back to the previous stage and it need to start from the start again. So, to solve this problem, DSDM Atern is used.

DSDM is one of the agile methods that provide the iterative and incremental approach. The development process is breaking down into small stages and develop iteratively (iteration). In this way, it is developed rapidly with the result of time saving.

The requirements are split into Must, Should, Could and Wouldn't with MoSCoW prioritization. And by use of time-boxing (time-boxes), the project can deliver on time.

And by the involvement of users in each iteration, the user requirements can be identified more precisely by the use of prototyping and the incremental values (increments) need to be added into the next iteration until the user requirements are fixed. In this way, DSDM never comprise quality target and provide collaboration between the users.

And DSDM Atern is one of the cost saving methods because it is not depend on the special tools and not required the skill person to use that tools and does not need much documentation like waterfall approach.

### More Description of DSDM Atern

DSDM Atern is focus on the people problems than technology. The philosophy of DSDM Atern is that any product must be aligned with the strategic goals and focus upon early delivery of real benefits to the business. It is depend on principle, process, people, products and practices.

The eight principle of DSDM Atern is to -

- Focus on the business need: understand the business true priorities,
- Deliver on time: time-boxing and hit deadline,
- Collaborate: right stakeholders and member of team work together,
- Never compromise quality: ensure the quality in constant,
- Build incrementally from firm foundations: create strong foundation by analysis.
- Develop iteratively: take feedbacks and develop,
- Communicate continuously and clearly: face-to-face communication between users,
- Demonstrate control: measure progress through focus on delivery of product.

In DSDM Atern, there are seven processes that need to be taken. They are -

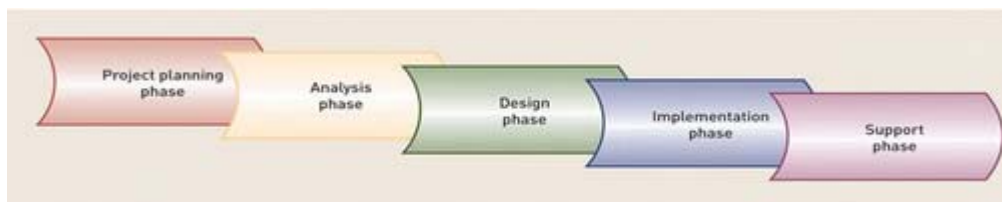
- Pre-project: identify the business problem and time and cost,
- Feasibility: studying the environment and outline possible approach,
- Foundations: details analysis to business case and risk management,
- Exploration: identify the best solution and plan the time required with team,
- Engineering: developing functional requirements iteratively with increment,
- Deployment: sent the solution into live environment and give training,
- Post-project: the solution actually benefits for the business and close.

## Chapter 3 - System Development Approach

### Types of system development approach

#### Predictive approach

The predictive approach is used when the requirements and outcomes of the project are well-known or planned out in advance. It is also called as the waterfall approach or linear development because it is developed sequentially, that means it is not flexible to change, every single stage of the predictive approach need to follow in one by one and the lifecycle can't go back to the previous stage, ending in the delivery of the wrongly developed result. In this kind of approach, the pre-determined result of the project is determined in a specific time and need to keep in the baselines.



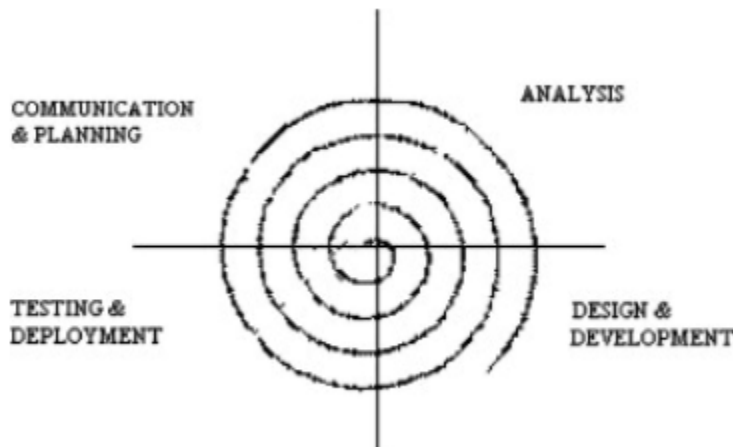
The steps in a predictive water-fall approach are:

- Planning : the project is identified and feasibility study of the plan, the schedule and resources are identified
- Analysis : understand the business condition and produce the real needs and functional requirements
- Design : define the solution for the new system based on the result of analysis
- Implementation : construct and testing the system design and training users
- Support : keep system running and make improvement

The predictive approach places a great deal of responsibility on the project team to understand and implement provided objectives. If project representatives fail to provide the team with complete and accurate information, the final product will not meet the needs of the organization. Subsequent changes could be time-consuming and costly.

#### Adaptive approach

Adaptive approach can be used in the conditions like the organization does not have clear aim and objectives or can't give the full requirements. In an adaptive approach, the development process are broken down into small phase and completed in separated way. And it is famous for its flexibility, it can easily go back to the previous stage when a part of the project is wrongly developed and welcome changes. In the last stage, the series of delivery are combined as the final result.



In an adaptive approach,

- Plan : planning the time and resources and methods
- Analysis : requirement are gathering by the user involvement, showing them documentation about what they want
- Design : the user requirement are changing into the prototype and development start
- Testing : testing the system by the increments and iterative model and deploy the system

### Reason for choosing Adaptive approach

Changes in adaptive approach are easier and less expensive to implement in the earliest stages of development than predictive approach. The chosen life cycle, DSDM Atern, is also based on agile approach, to provide flexibility which means if one of the stages is wrong, the lifecycle can go back to the previous stage.

The first reason for choosing adaptive approach is that the project is divided into smaller stages with a series of deliverables and develop iteratively and allow to modify easily. By the use of the feedback from customer and the new requirement will be found and develop iteratively until we realize all the expectations.

Mostly used in an industry like it needs rapid changes. Adaptive approach allow to take incremental feedback from the development process. The whole project is broken down into small stages (increments) and at the end, the series of deliverables combined as the final product. In this way, the project can be developed easily and efficient in time.

And the development process can rapidly deliver because of the short iterations for the increments in return for acceptance of the high level of uncertainty about the overall delivery of the correction. These approaches are mostly used in exploratory approach, survey and finding the best solution.



Adaptive approach often favor in identification of the needs and designs using group coordinates and collects information from the feedback. Enforced requirements are limited to items at the top of the prioritized list. Additional references may also be created to the needs of the group, and typically include a development model to increase the group's understanding of specific issues. Documentation samples are usually produced after the problem is solved.

Adaptive approach is mostly current used in the organizations because they feel that this approach leads to improved quality and effectiveness.

### **More description about Adaptive approach**

The adaptive approach is used to develop by the use of iterative and incremental development in which iterative duration is within two or four weeks and time and cost are fixed. Iteration is the process of plan, analysis, code and testing.

The results of the increment values from iteration are shown to user by prototyping which is the presentation of incomplete versions of the software that is being developed or may be the final one.

As the users are allowed to involve at the early development of the lifecycle, the user requirements will not be misunderstood and more likelihood of the client acceptance on the final product. The risk for the project fail can also be reduced by splitting the project into sub-sections and making it easy to change the development process.

### **Iterative development**

Adaptive approach is based on the iterative development of the small life cycles to make the additional values into the current stage and the iteration times may also depend on the organization and it may also need not too long because too many iterations can lead to misunderstanding in user real requirements. Using iterative model will allow the software developers to take advantage of what was learned during the development of earlier parts of the system.

As changes in the early of development are easier and less expensive to implement than the complete failed one. And more than one iterations of the software development cycle may be in progress at the same time and this process may be described as an evolutionary acquisition or incremental build approach.

Each stage is delivered to the client by the prototype, which can be called as the first version of the software and the series of released can be called as increments, in which each increment providing more functionality to the customers. Then the feedbacks from the clients or requirements of the released version will be fixed in the next iteration of the increment until the exceptions is achieved or user accepted. It can consist of mini waterfalls or mini v-shaped model.

## Chapter 4 – System Investigation (Fact Finding Method)

### Description about fact finding method

When a new or upgraded system is introduced to an organization, the current system will need to be analyzed and documented. To identify the problems of existing system, the data will need to be accurate and realistic upon current time. And there are several ways of fact finding to gather information. An analysis of the existing system, therefore, provides a firm basis for the design of the new system.

Fact finding is the method of getting the functional requirements of the system by studying the existing documents or making research and observe in the market or making questionnaires or workshops aimed to the different types of users. It is used to fully understand the nature of the problems of the business and aimed to reduce solutions.

Fact finding techniques are used in the early stage of SDLC, system analysis, and can also use in design and implementation phase. Facts included in any information system can be tested based on three steps of creating the useful data, process to make functions and interface design for user. The common fact-finding techniques are as below.

### Sampling of existing documentation (Studying documentation)

Collect and organize facts from existing documentation e.g. customer complaints, e-mails, suggestion box notes, program documentation and etc.

### Research and Site visits

Examine the problems of the others which are same and had been solved in a particular way and search the information from Internet, case studies, reference books and from database.

### Observation of the work environment

Observe the organization from user point of view because it needs to study the documents' flow and is used to apply in the existing system, and the interaction will be needed between users.

### Questionnaires

It is a one of the useful methods that is used to collect the large amount of useful information from the large pool of users, filling up the questions and giving the answers back.

### Interviews

Interviewing in face-to-face relation with the interviewee by asking, finding, verification and the questions until the interviewer got the satisfied answer. And as the modern technologies are developing, the interview methods are also increasing in also by phone or in website.

### Joint requirements planning (workshops)

JRP is the group of work that is organized structured and used for identifying the problems and produce the possible solutions for the system. As it is the structured group of work, it is mostly used in short time gathering requirements and can also use for separated interviews.

## **Choice of fact finding methods and reasons for choosing**

### **Sampling of existing documentation (Studying documentations)**

By the use of sampling technique, the facts from existing documentation from customer complaints, e-mails, suggestion box notes and program documentation are collected and organized. Randomization, which is selecting of the questions randomly, and stratification, which is the process to deduct the variance of sampling data, are commonly used in this technique. It is less expensive than other and only need to study from internet.

### **Research and Site visits**

Examine the problems of the others which are same and had been solved in a particular way and search the information from Internet, case studies, reference books and from database. It can save the time and get different view of solving method and experience by researching the problems of how to solve.

### **Joint requirements planning (workshops)**

JRP can use to survey the facts in a short time efficiently as it is not required to ask one-on-one interviewing of and it can replace to the other places with different questions and separate interviews. It is aimed to target on the different types of user with each specialized roles to perform in structured way. Business sponsor, scribes, IT staff, managers, facilitator and users are included in JRP.

## Chapter 5 – Feasibility Study

The feasibility stage in a software development life cycle is to stage of decision making of the project whether it should be developed or abandoned and the study of the project success chance based on the economic, social, legal, technical and operational factors.

Feasibility studies to identify strengths and weaknesses in existing businesses, threats and the available resources and the best opportunities for success.

### **Economic/Financial Feasibility Study**

An economic feasibility study is used for cost benefit analysis of a proposed plan. In the total cost, the building cost and the employee fees and the software cost and the cost in saving the employee and the profits from the development. The time for the payback period will also contained in the calculation for the development.

### **Operational Feasibility Study**

As the toughest part of a feasibility study is making the actual decision, we start with determining what is most important to the social sector organization (e.g. revenue, mission alignment, ease of implementation).

It is used to measure of how well a proposed system solves the problems, and takes advantage of the opportunities identified during scope definition and how it satisfies the requirements identified in the requirements analysis phase of system development.

### **Legal Feasibility Study**

It is used to determine whether the proposed system conflicts with legal requirements. So, for the booking ticket online system can't be aligned with the legal problems.

### **Technical Feasibility Study**

Each business needs an information system to store data. Before a system is built, a technical feasibility study can identify the potential challenges and problems that the system may encounter technically based on the requirements and goals of the business. The study analyzes possible technical solutions to ensure that the system is achievable in its effectiveness to the business. The study identifies a number of technical options based on the business's resources and requirements and a final recommendation.

## Chapter 6 - Choice of System Analysis and Design Method

Systems analysis and design is aimed to produce specification for converting practice the business requirements. System analysis is used to identify the problems system design is used to accomplish the objective of the system or used to solve the problem. System analysis and design method are mainly focused on technology, processes and type of system.

If you can't analyze the problems and design the solution, you would not have any solution to code. The result of the systems design are passed on to the developers who develop the system. If the output of the systems design are incompatible with the needs of the organization, then the developed new systems will be wasted.

### Survey System Analysis and Design Method

The main methods used for system analysis and design are Structured Analysis and Design method (SAD) and Object-Oriented Analysis and Design method (OOAD).

### Structured Analysis and Design Method (SAD)

Structured analysis is used to study the flow of data and the relationship between them. Firstly, the system requirements are determined and produce the required process requirements. And, there is three orthogonal views in SAD:

- The data view (logical view): use entity relationship diagrams (Context Diagram) to show the relationship between data, the input and outside of the system and it is in stable view.
- The functional view (physical view): use data flow diagrams (Data Flow Diagram) to show the flow of data and structural changes can occur if functionality of the system is changed.
- The dynamic view: use of state transition diagrams (Data Dictionary) to define the condition of when things happen and how to counter them.

Structured Design inscribes the combination of the sequence of models. Cohesion and coupling principles are used to benefit from the modular structure and the appropriate interface. Cohesion principle is concerned with the grouping of processes involved in the work in the particular module. Coupling principle is concerned with the flow of data or parameters between modules. Optimal coupling reduces the complexity of software output and the interfaces modules.

The structural chart shows the range of modules or integrated module sequences. There is a module specification for each module shown on the structure chart. The data dictionary is like that of structured analysis. At this stage in the software development lifecycle, after analysis and design have been performed, it is possible to automatically generate data type declarations, and procedure or sub routine templates.

## Object-Oriented Analysis and Design Methodology (OOAD)

OOA is taken by the use of the user requirements, the system is break down into splits, which can be contain sub-tasks and can analyzed separately. Then construct the conceptual design of the system by the use of UML diagram.

Common used tools in OOA are UML diagram, showing by the object models and use cases. Use cases describe scenarios for standard domain functions that the system must accomplish. Object models describe the names, class relations, operations, and properties of the main objects. User-interface mockups or prototypes can also be created to help understanding.

During object-oriented design (OOD), a developer applies implementation constraints, to the conceptual model produced in object-oriented analysis. Such constraints could include the hardware and software platforms, the performance requirements, persistent storage and transaction, usability of the system, and limitations imposed by budgets and time. Concepts in the analysis model which is technology independent, are mapped onto implementing classes and interfaces resulting in a model of the solution domain, i.e., a detailed description of how the system is to be built on concrete technologies.

The OOD process takes the conceptual systems model, use cases, system relational model, user interface (UI) and other analysis data as input from the OOA phase. This is used in OOD to identify, define and design systems classes and objects, as well as their relationship, interface and implementation.

There are several object-oriented techniques and tools but the object model, dynamic model and the functional model are widely used. The object model is used to illustrate the objects of the system, showing them with class. The dynamic model is used to illustrate the behaviour of the system by the use of Event-Trace diagram or State Transition diagram. The functional model is showed in data flow diagram (DFD) to illustrate the internal processes independently.

## Reason for choosing OOAD

- Re-usability of analysis, objects, design and programming
- Improved communication among them
- Increased consistency among the models developed
- Easy to understand
- More flexible and easier to make update in response to changing user requirements
- Systems can be developed more rapidly
- Systems can often be developed at a lower cost

**Fuller Description about OOAD**

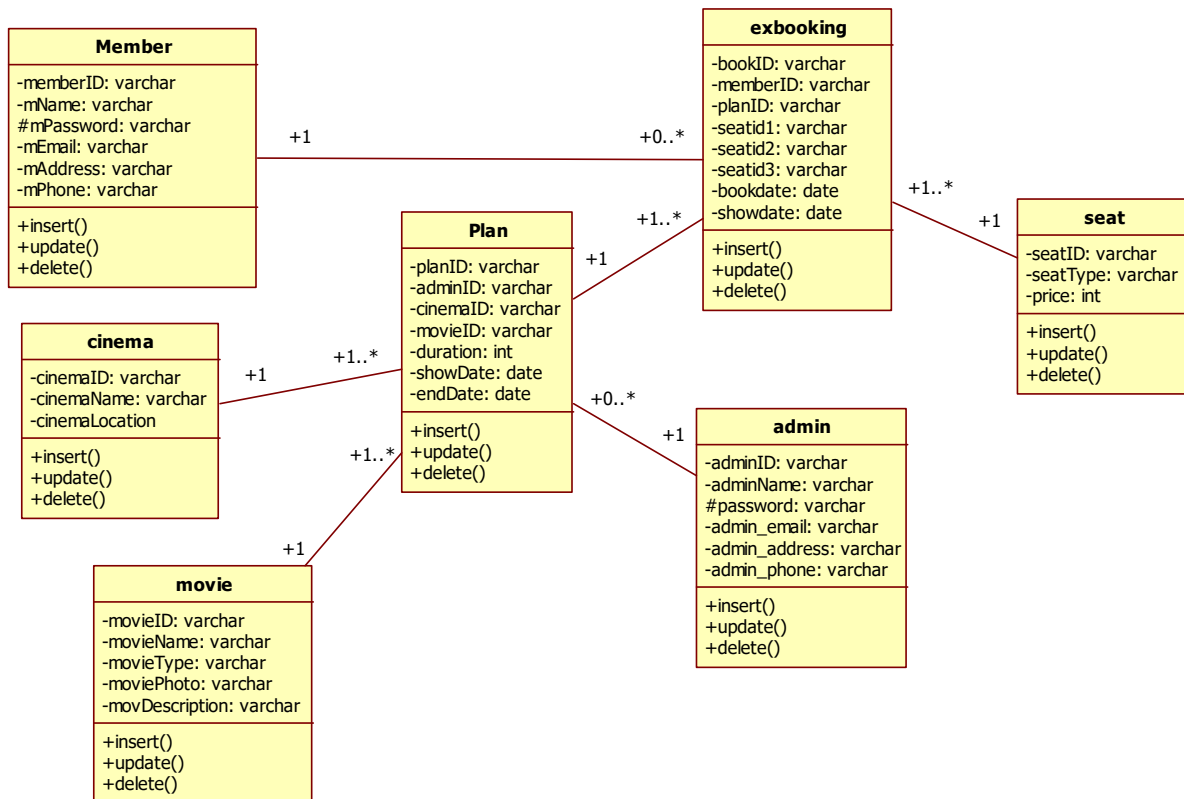
Object-oriented methodologies do not focus solely on the processes or data of a system but view an information system as a collection of interacting objects that work together to accomplish tasks.

1. Define all the types of objects in the system and the required use cases are selected
2. The object modeling technique is used for analyzing the functional requirements
3. Produce the solution for the requirements of the current system, producing conceptual model of the system
4. Before the analysis is taken, the pre-required information for analysis are gathered
5. The system is then analysis without consider the implementation constraints
6. A system is divided into different sections and other areas and then each sections are separately analyzed.
7. By the result of the object oriented analysis, the UML diagram like class diagrams, interaction diagrams, sequence diagram, timing diagram and overview diagram can be used in designing for the purposed system.

## Chapter 7 – System Design Using Object Oriented Design Technique

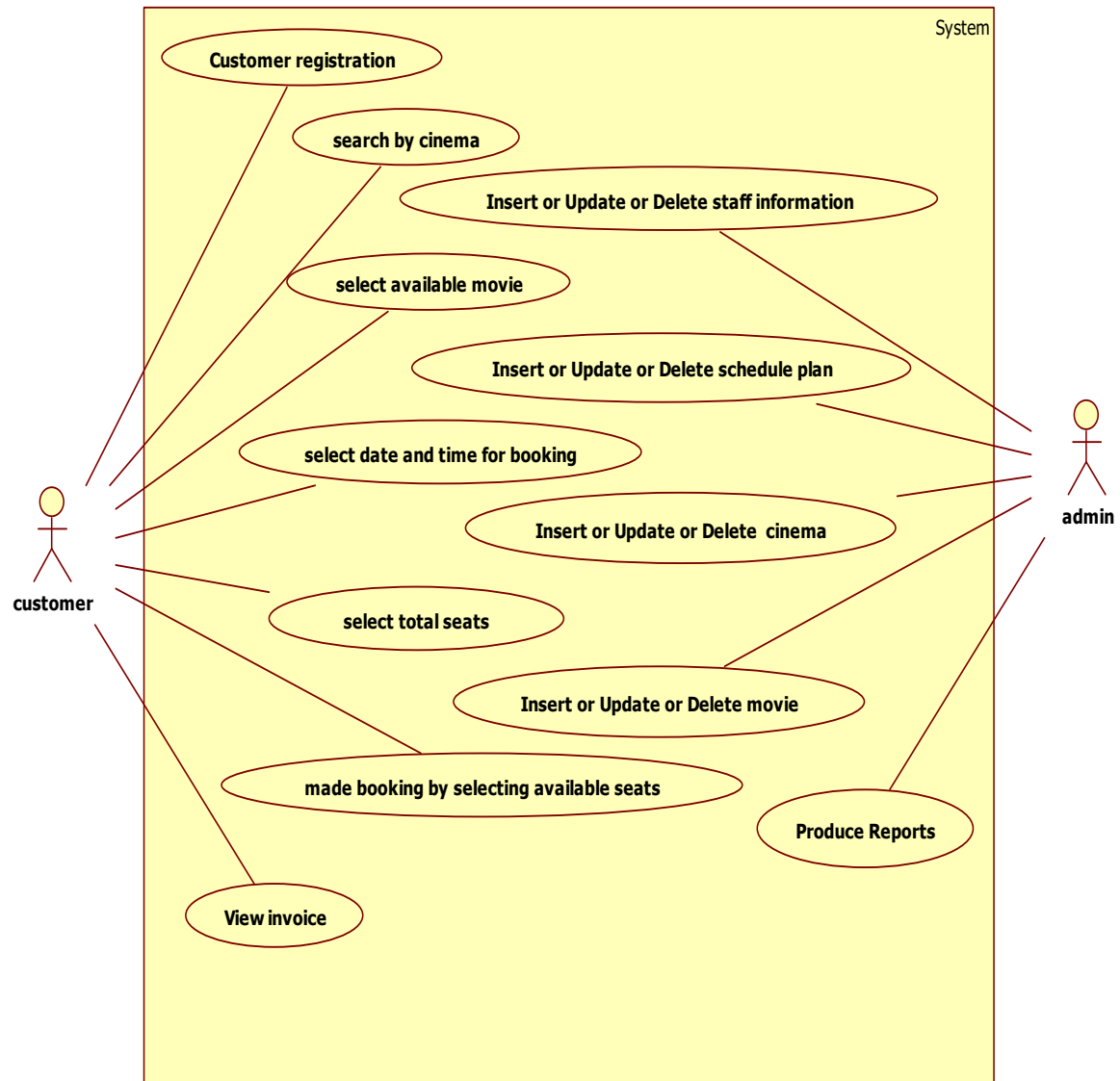
### System Design using UML Diagrams

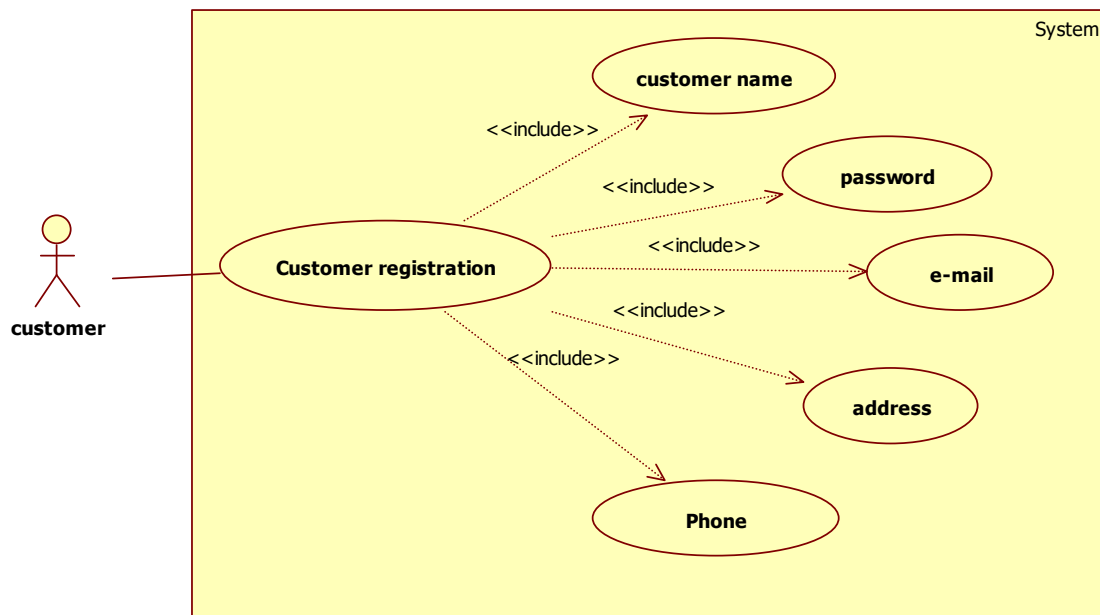
#### Class Diagram



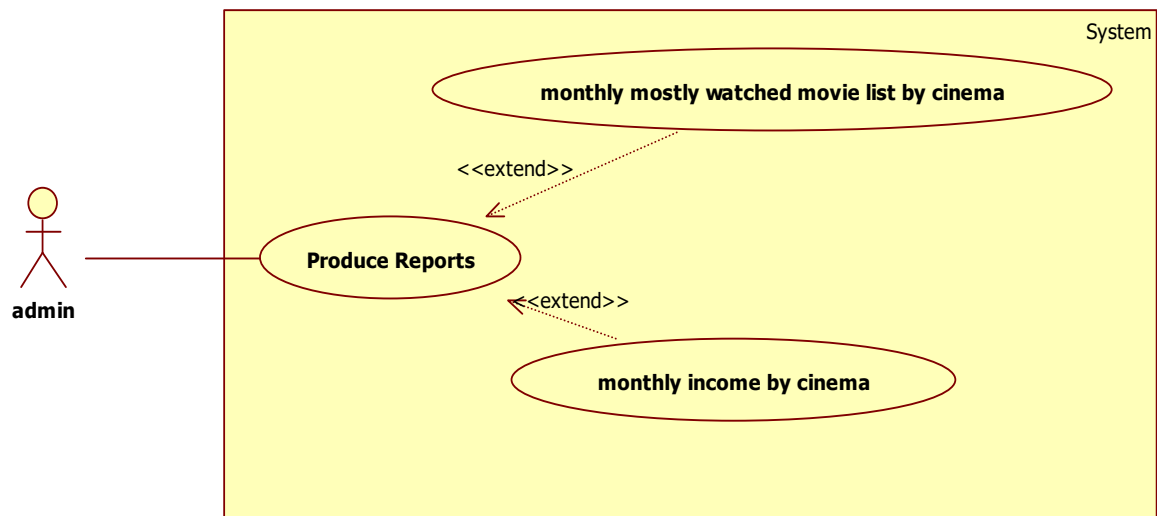


## Use-Case Diagram





UC01 – customer registration process



UC02 – admin produce invoice

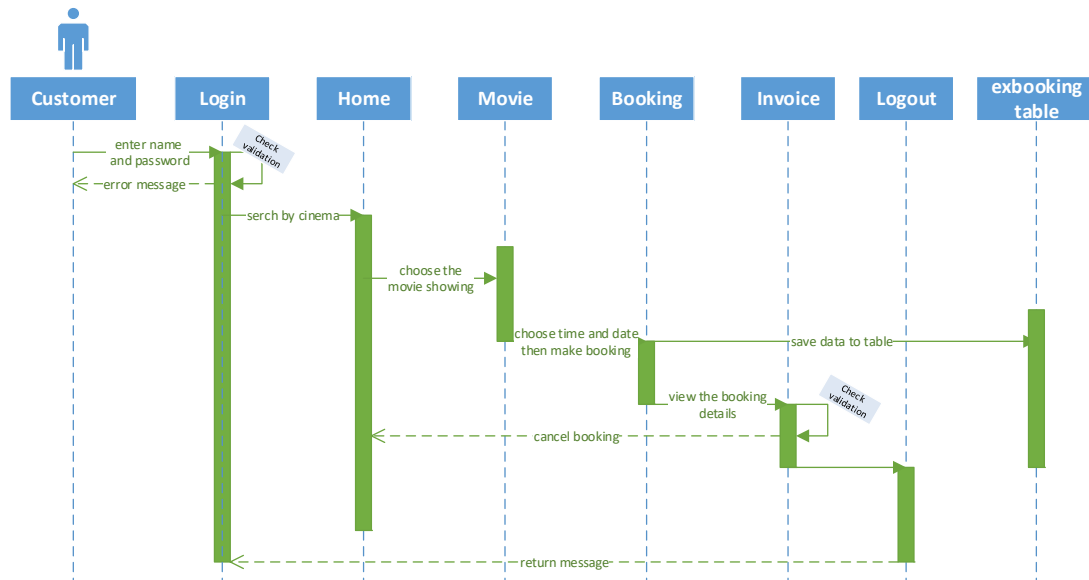
## Usecase distriction for the customer registration process

Number	UC01	Req Doc Ref:
Name:	Customer Registration	
Status:	Working	
Actor:	Customer	
Date	20/11/2018	
Pre-requisites:	None	
Goal:	To enable to login	
Use Case Relationship		
Extend:	-	
Include:	customer name, password, email, address, phone number	
Association:	Customer	
Generalization:	-	
Description: Enter user name, password, confirm password, email, address and phone number and then click on the submit “Sign up”		
Index	Registration to the system	
1	Go to index page	
2	Click on Sign Up from the navigation bar	
3	Input customer details	
4	Click on the submit button ‘Sign Up’	
5	Show customer registration successfully message	
Alternatives:		
2	Click on another page	
3	The input data may be wrong, password and retype password need to be same and the required field needed be to fill	
5	If the customer with the same name or email already existed, the system would show that it has already existed.	
Post condition	The registration success will display and the page will reach to login page	

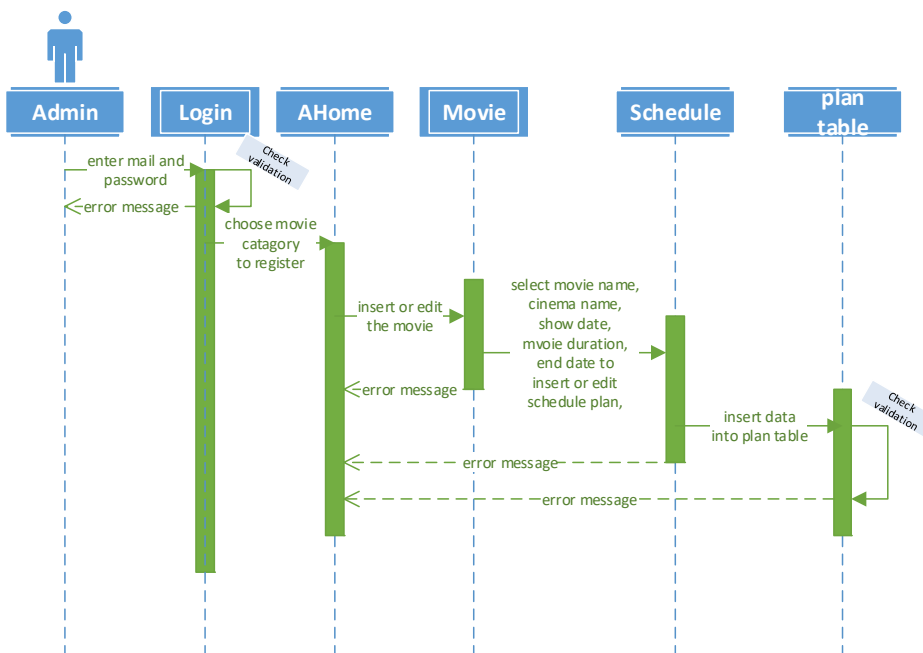
Number	UC02	Req Doc Ref:
Name:	Produce Reports	
Status:	Working	
Actor:	Admin	
Date	21/11/2018	
Pre-requisites:	None	
Goal:	To produce the report	
Use Case Relationship		
Extend:	monthly income by cinema, monthly mostly watched movie list by cinema	
Include:	-	
Association:	Admin	
Generalization:	-	
Description: Select the month to produce the report for the selected report types, monthly income or monthly most watched movie list.		
Index	Produce Reports	
1	Go to report page	
2	Select the report for mostly watched movie list by cinema	
3	Choose on the month for the selected report	
4	Click on the submit button 'Show'	
5	The report table will show	
Alternatives:		
3	The selected month for the selected report can be wrong	
5	No table will be showed then go to index 3	
Post condition	The reports for the selected category will be show n	

## Sequence Diagram

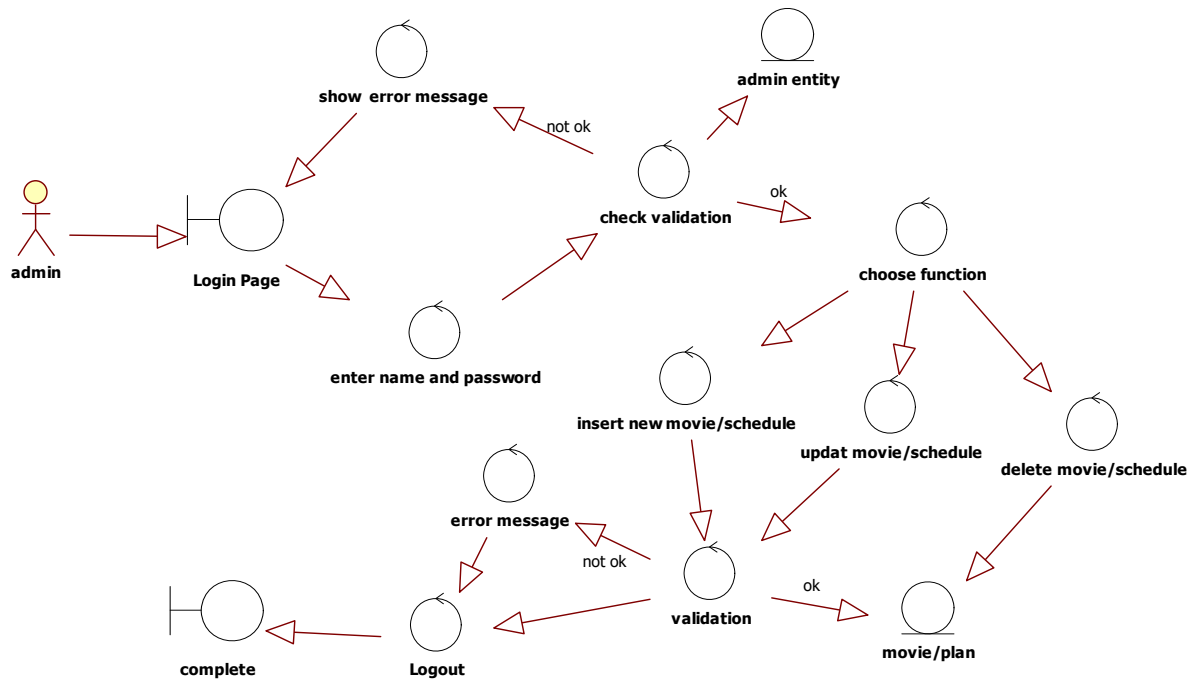
Sequence diagram for the customer to login and make booking movie



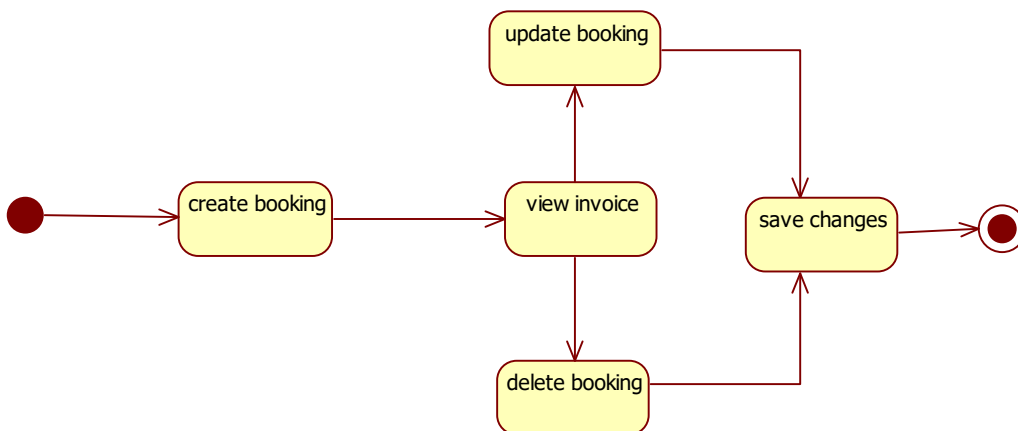
Sequence diagram for admin to insert or edit the schedule plan for the movie



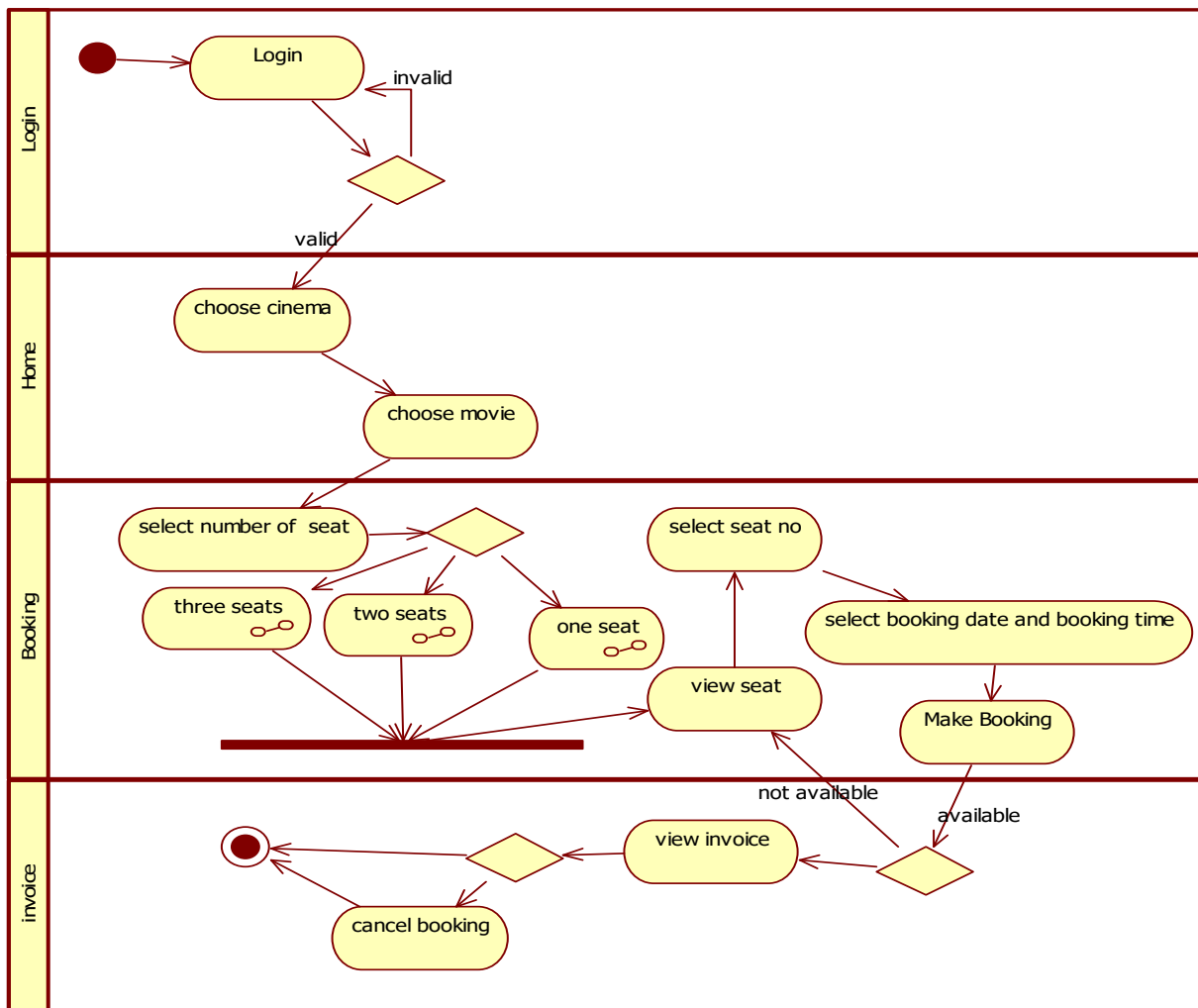
## Robust Diagram for admin



## State Diagram for booking



## Activity Diagram for booking process



## **Chapter 8 – Choice of Programming Language and Developer Tools**

### **Survey of Programming Language**

A programming language is a formal language, which is a grammatical rules for instructing a computer to produce various kinds of output. A programming language acts as a translator between human and computer by translating human language into machine language that the computer understand.

#### **JavaScript**

JavaScript is most known as client-side scripting language for web pages and also used in many non-browser environments. It is dynamic, prototype-based, multi pattern scripting language, and it is object-oriented, functional programming and imperative styles.

#### **PHP**

Hypertext Preprocessor, that earlier stood for Personal Home Pages, is a server-sided scripting language which is designed for developing websites and PHP programming language is used as a general-purpose.

#### **Python**

Python is an interpreted high-level programming language for general-purpose programming language. Python is most praised for its elegant syntax and readable coding, particularly used significant whitespace. Python allows programming language to enable clearer on large and small scales.

#### **Ruby**

Ruby on Rails is one of the most popular web development frameworks and currently tons of startups use it. Ruby is a dynamic system, object-oriented, reflective, and interpreted and it used as general-purpose language.



## Reason for choosing PHP

- Having large pool of community of users and developers
- Open sourced software
- Great frameworks
- The best glue on the web
- Continual improvements
- Good old web
- Web foundation
- Easy to learn
- Allows execution of code in restricted environments
- Works on almost every operating system and platform

PHP is flexible, fast and it is realistic and empowers everything from the blog to the popular websites. PHP allows developers to host a website without having to worry about server configuration which is great for beginners.

## Survey of Developer Tools

### NetBeans

NetBeans is free open source software development tools which provide to write the Java, desktop application and mobile (Android). It also support IDE (Integrated Development Environment) to develop other programming languages which contains C++, C, Java, PHP and JavaScript etc. It can run on various operating system (Windows, Linux, Mac OS, etc.) and support the features like smart editing for coding and bug-free writing, easy to management process and quick user development. Especial features in NetBeans are profiling, dedicated support community, debugging, GUI builder, support Java platform and out of box working.

### Eclipse

Eclipse is the most popular IDE that is used by Java developers. It is used to develop other programming language like PHP, C, C++, C#, ABAP, HTML, CSS, XML and etc. It is available for free and is an open source software. The frameworks like TestNG, JUnit, and other plug-ins can be easily integrated in eclipse.

### Notepad++

Notepad++ is the update version of Notepad text editor that is supported with several languages like C/C++, C #, Java, PHP, Python, or .NET. It is the simple IDE and it is contained in windows computers. And notepad++ is also free and easy to use.

**Reason for choosing Notepad++**

Notepad++ is a free source code and it is simple and easy to use as it is supported in windows environments, allows working with multiple open files in a single window.

The "++" builds on the basic Notepad text editor, adding a tabbed interface, syntax highlighting, auto completion, and other programming-specific features. It supports also -

- Auto saving mode
- Finding and replacing strings of text with regular expressions
- Split screen editing and synchronized scrolling
- Macros recording
- Line bookmarking
- Simultaneous editing and
- Guided indentation.

## Chapter 9 – Choice of Database Management System

### Survey Database Management System

#### dbForge Studio for SQL Server

dbForge Studio is an integrated environment for SQL Server development, management, administration, data reporting and analysis. SQL manager tools allows easily to create, edit, copy, attach, detach, backup and restore databases from one server to another. These SQL tools help developers to manage databases, speed up routine tasks and make complex database changes.

#### Oracle Database

Oracle database is high-end business-related databases with secure data management and transactional coordination. It can provide with high performance quality like stability and scalability, and also supports database design language (PL / SQL) that allows implementing active designs, with triggers and stored procedures, with a fairly powerful declarative referential integrity.

#### MySQL

MySQL is an open source relational database management system based on Structured Query Language (SQL) and popularity in creating web application with PHP and JavaScript. MySQL can support the scalability, security, reliability, and uptime and reduces the risk, cost, and complexity in developing, deploying, and managing business-critical MySQL applications.

#### Microsoft SQL Server

Microsoft SQL Server is developed by Microsoft as a relational database management system for querying, storing and retrievals of different tables and aimed to use for corporate application and take benefits from availability and performance while turning raw data into meaningful reports.

#### Reason for choosing MySQL

- MySQL can also be easily managed using visual web tools such as phpMyAdmin for beginner.
- It is the simple, fast and open source software and supports highly complex and advanced SQL queries.
- It provides adapter to integration to almost all types of programming languages.
- It can handle a multitude of data in a fast and reliable manner all while allowing users to access a number of databases efficiently.

- It is certainly fast and light, the installation requirements are minimal and with few resources, MySQL can be run on Windows, UNIX and Mac OS.
- Anyone can download and use MySQL without paying.
- It is popular as the web application is related to PHP, which usually appears in combination with MySQL.
- It is easy to install and easy to learn: it is simple to find an application that connects to the database and do the administration in graphical mode.
- MySQL ensures that financial transactions from online have data integrity.
- MySQL provides ultimate platform flexibility to enterprises who need additional features and functionalities for their database servers.
- MySQL ensures data security with exceptional data protection features. Finally, the data backup feature facilitates point-in-time recovery.
- MySQL is exceptionally quick, regardless of the underlying platform.

## Chapter 10 – System Testing

Testing is the process of checking the functionality of the software or checking the correctness of the software based on requirements of the target groups of user. It is used to improve the quality and reliability of system. It may be expensive time consuming but a successful testing is the one that finds the error.

### Testing Approach

- Black Box Testing Approach: the internal structure /design /implementation of the item being tested is not known to the tester.
- White Box Testing Approach: the internal structure/ design/ implementation of the item being tested is known to the tester. White box testing is testing beyond the user interface and into the nitty-gritty of a system.
- Grey Box Testing Approach: combination of black box and white box testing method. In Gray Box Testing, the internal structure is partially known.

### Testing Levels

#### Unit Testing

Use to test independently each program or each type from one another. In unit testing, it is difficult to make testing for many different input in detail and the accuracy of program cannot be assured.

#### Integration Testing

It is the testing of multiple modules working together. It is used to find discrepancies between the system and its original objective, current specifications, and systems documentation. In integration testing, the areas where modules have been designed with different specifications for data length, type, and data element name are fined.

#### Functional Testing

Used to determine whether the system is functioning correctly according to its specifications and relevant standards documentation. Functional testing typically starts with the implementation of the system, which is very critical for the success of the system.

## Stages of testing

### Test Strategy

Statement of how to make testing by the provided information from the various methods, levels, techniques and tools for the system.

### Test Plan

Plan for testing the system and verifies that expected result of the system before fully testing all the estimation time for testing are included.

Test Plan	Function Name	Expected Result	Duration	Tester
P01	Member Registration	Display "Registration success" message and go login page	1 day	Aung Myo Myint
P02	Member Login	Display login success by "You are now log in as yourname"	1 day	Aung Myo Myint
P03	Staff Registration	"Staff Registration Success" message will show	1 day	Aung Myo Myint
P04	Staff Login	Display login success by "You are now log in as yourname"	1 day	Aung Myo Myint
P05	Movie Registration	"Movie Registration Success" message will display	1 day	Aung Myo Myint
P06	Cinema Registration	"Cinema Registration Success" message will display	1 day	Aung Myo Myint
P07	Schedule Plan Registration	"Schedule Registration success" message will display	1 day	Aung Myo Myint
P08	Booking Process	"Booking Success" message will display	1 day	Aung Myo Myint
P09	Show Report	The selected monthly report will display	1 day	Aung Myo Myint

## Test Case Design

Test Case	Test Plan	Input	Expected Result	Actual Result
1	P01	- Fill user name, password, email, address and phone	Display "Registration success" message and go login page	- The message "Registration success" is appeared in Fig (10.1.1), (10.1.2)
2	P02	- Fill username and password	Display login success by "You are now log in as + yourname"	- "You are now login as+ Username" is appeared in Fig (10.1.3)
3	P03	- Fill staff name, password, email, address and phone	"Staff Registration Success" message will show	- The message "Staff Registration Success" is appeared in Fig (10.2.3), (10.2.4)
4	P04	- Fill admin e-mail and password	Display login success by "You are now log in as yourname"	- "You are now login as+ admin_name" is appeared in Fig (10.2.1), (10.2.2)
5	P05	- Fill movie name, type, image and description	"Movie Registration Success " message will display	- The message "Movie Registration Success" is appeared in Fig (10.5)
6	P06	- Fill cinema name, location	"Cinema Registration Success" message will display	- The message "Cinema Registration Success" es appeared in Fig ((10.4.1), (10.4.2)
7	P07	- Select cinema name, movie name, movie length, show-date and end-date	"Schedule Registration success" message will display	- The message "Movie Registration Success" es appeared in Fig (10.7)
8	P08	- Select the number of seats and choose the available seats for the selected schedule plan and select the show -date and time	"Booking Success" message will display	- The message "Booking Success" is appeared in Fig (10.3.1), Fig (10.3.2), Fig (10.3.3.1), Fig (10.3.3.2), Fig (10.3.4.3), Fig (10.3.4.1), Fig (10.3.4.2)
10	P09	- choose the reports type to show	The selected monthly report will display	- The message "Movie Registration Success" will appeared in Fig Fig (10.5.1), (10.5.2)

## Test Logs

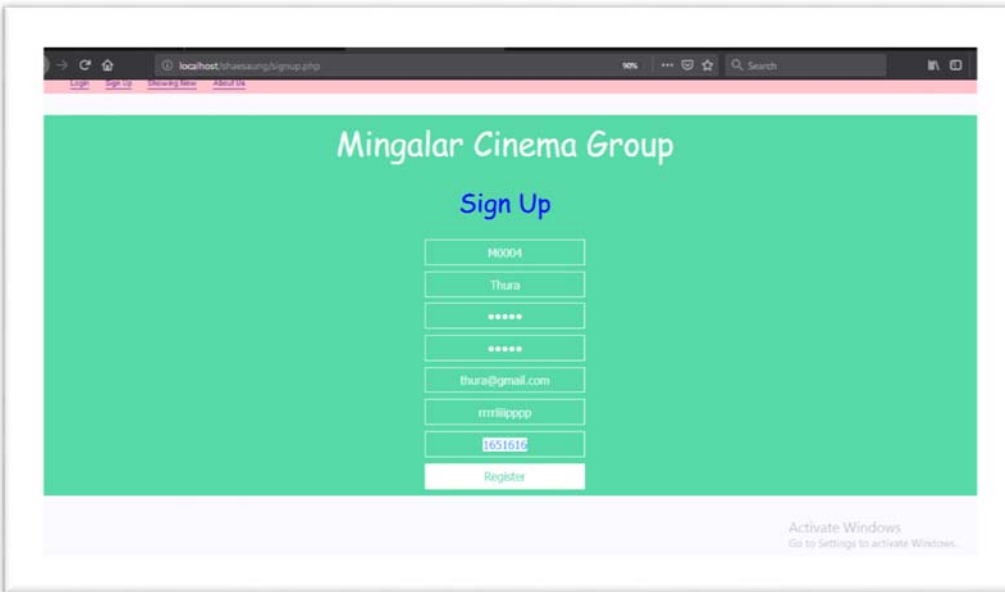


Fig (10.1.1) Fill the required input to the singing up page for customer

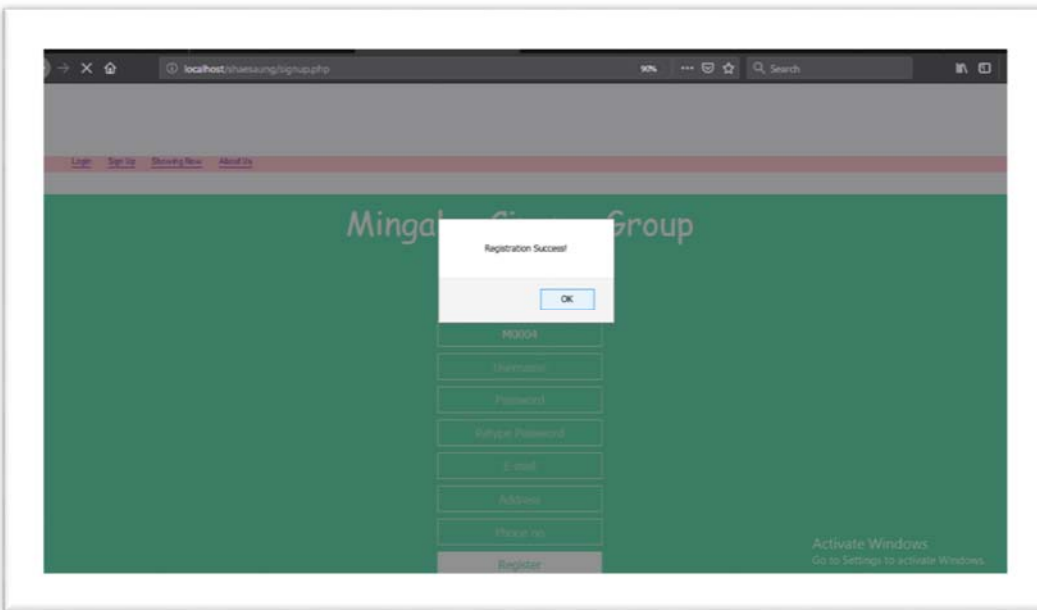


Fig (10.1.2) Registration Success message will appear for customer



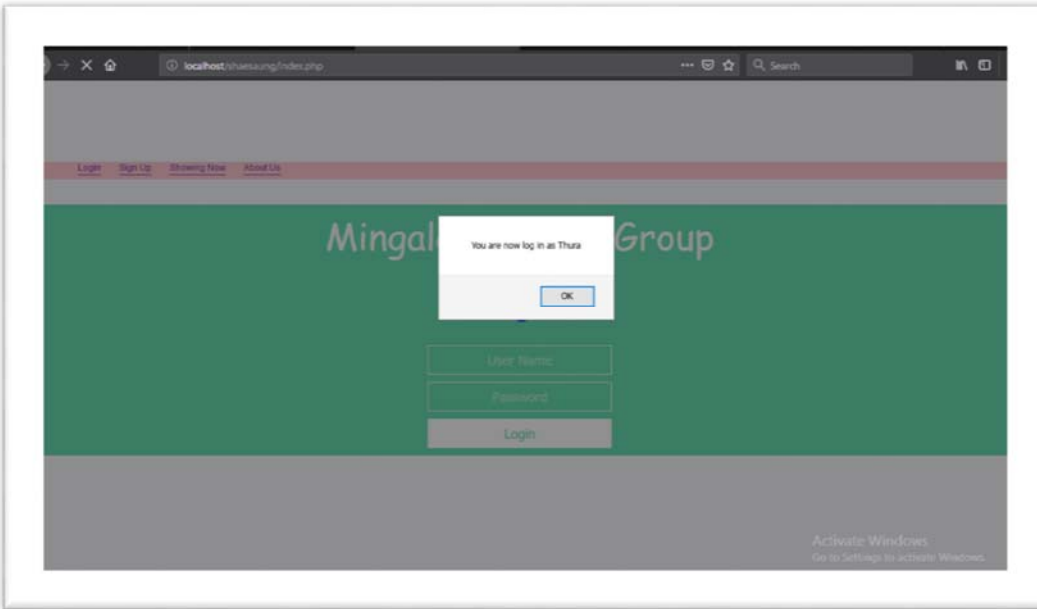


Fig (10.1.3). Log in success message will appear by customer

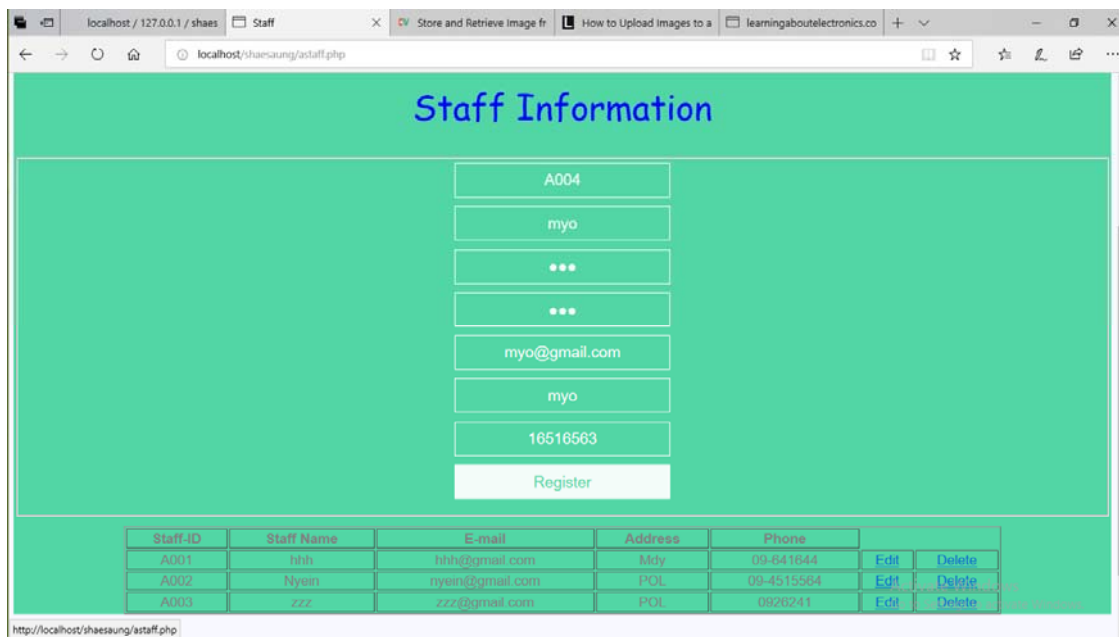


Fig (10.2.3) Fill the staff information and click Register

The screenshot shows a web browser window with the URL `localhost/127.0.0.1/shaes/Staff`. The page contains a registration form with the following fields: Staff Name, Password, Retype Password, E-mail, Address, and Phone no. Below the form is a 'Register' button. Underneath the form is a table with the following data:

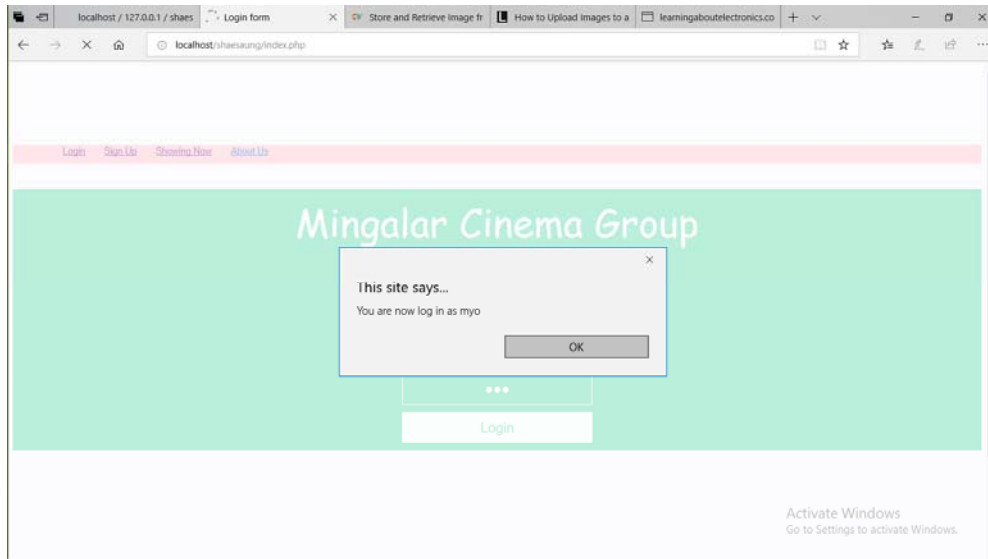
Staff-ID	Staff Name	E-mail	Address	Phone	
A001	nhn	hnh@gmail.com	My	09-041044	<a href="#">Edit</a> <a href="#">Delete</a>
A002	Nyein	nyein@gmail.com	POL	09-4515564	<a href="#">Edit</a> <a href="#">Delete</a>
A003	zzz	zzz@gmail.com	POL	0926241	<a href="#">Edit</a> <a href="#">Delete</a>
A004	myo	myo@gmail.com	myo	10516563	<a href="#">Edit</a> <a href="#">Delete</a>

At the bottom right, there is a message: 'Activate Windows. Go to Settings to activate Windows.'

Fig (10.2.4) The successful message will appear and the new column will be added

The screenshot shows a web browser window with the URL `localhost/127.0.0.1/shaes/index.php`. The page has a navigation bar with links: [Login](#), [Sign Up](#), [Showing Now](#), and [About Us](#). The main content area has a green background with the text 'Mingalar Cinema Group' and 'Login'. Below this is a login form with the following fields: E-mail (containing 'myo@gmail.com'), Password (represented by three dots), and a 'Login' button. At the bottom right, there is a message: 'Activate Windows. Go to Settings to activate Windows.'

Fig (10.2.1) Fill the staff email and password



Fig(10.2.2) The successful message will appear

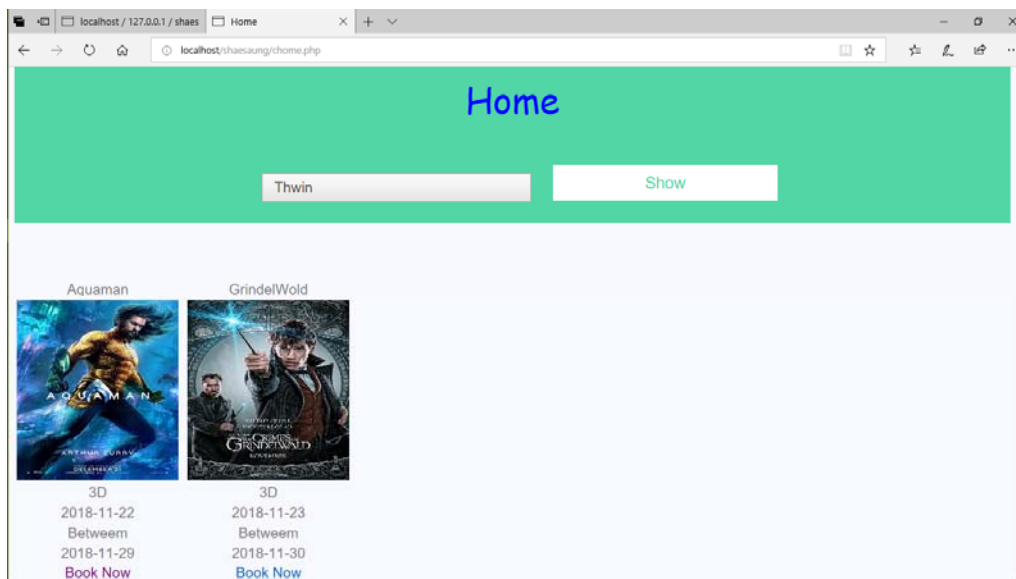


Fig (10.3.1) Choosing the cinema to show by customer

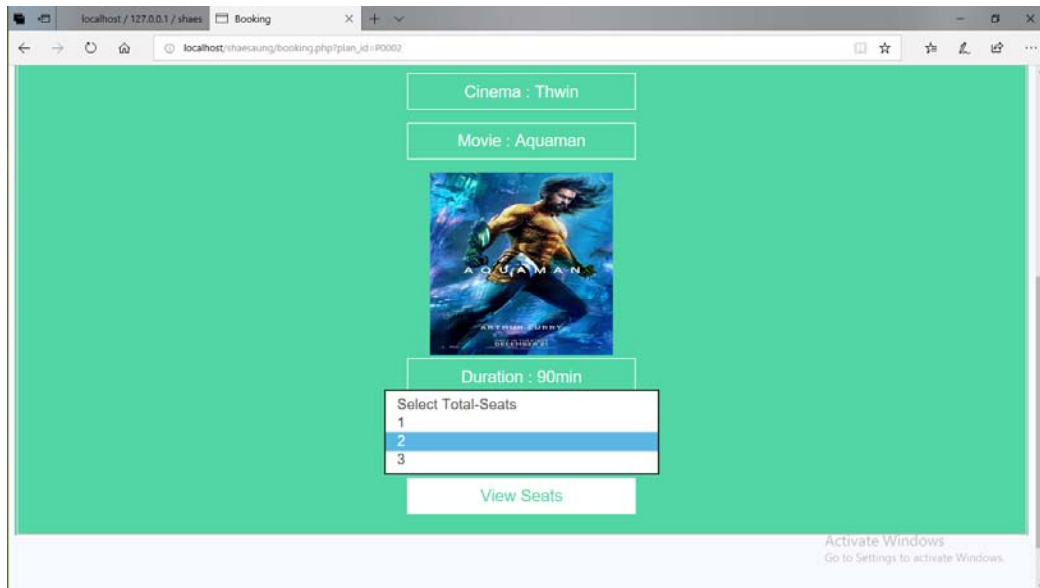


Fig (10.3.2) Select the total seats to book

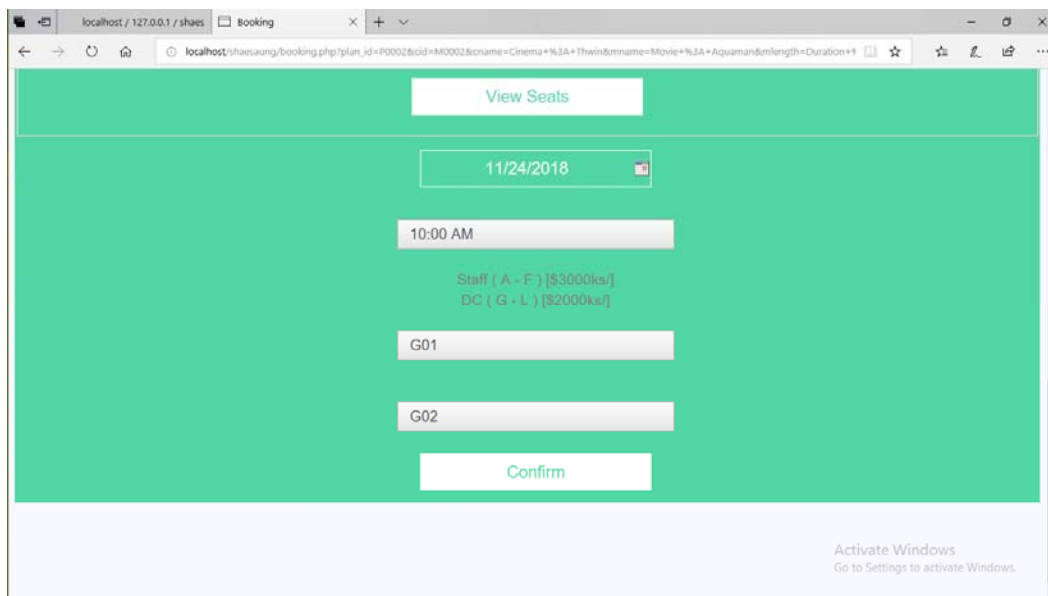


Fig (10.3.3.1) Select the seat number(s), date and time to book

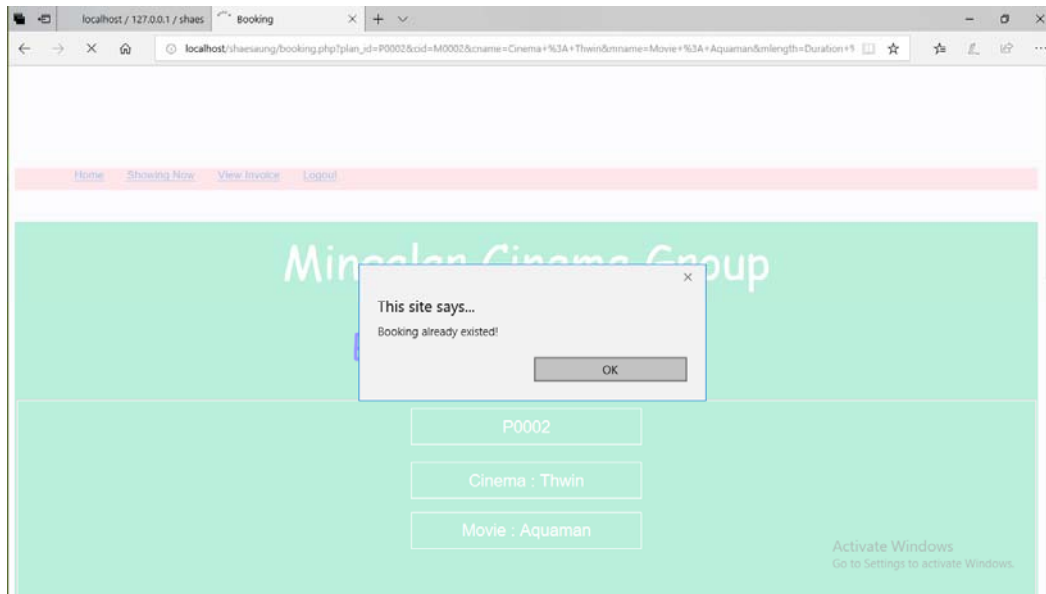


Fig (10.3.3.2) "Booking already existed" will appear if not available

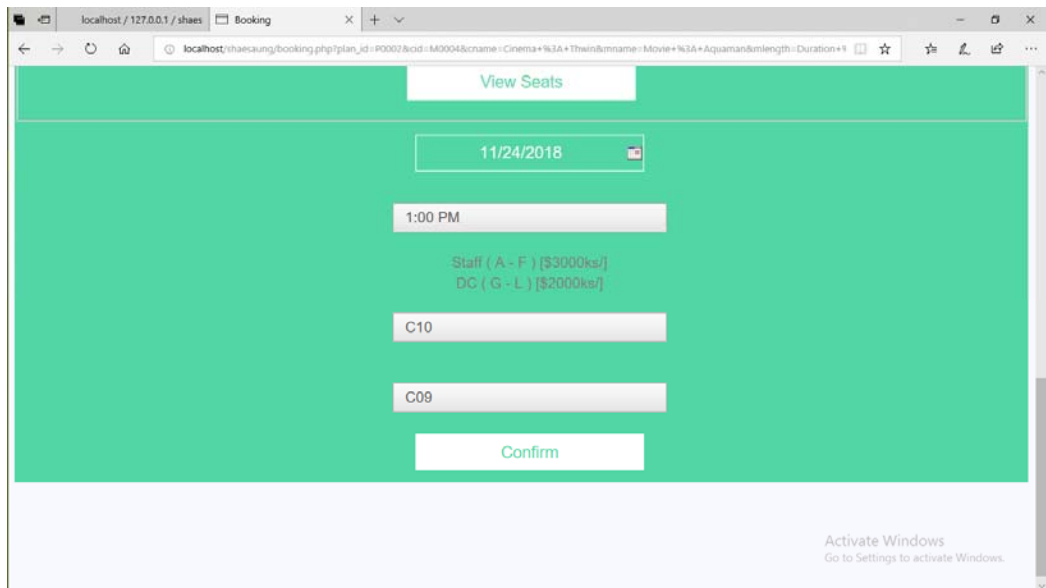


Fig (10.3.4.1) Select the seat number(s), date and time to book

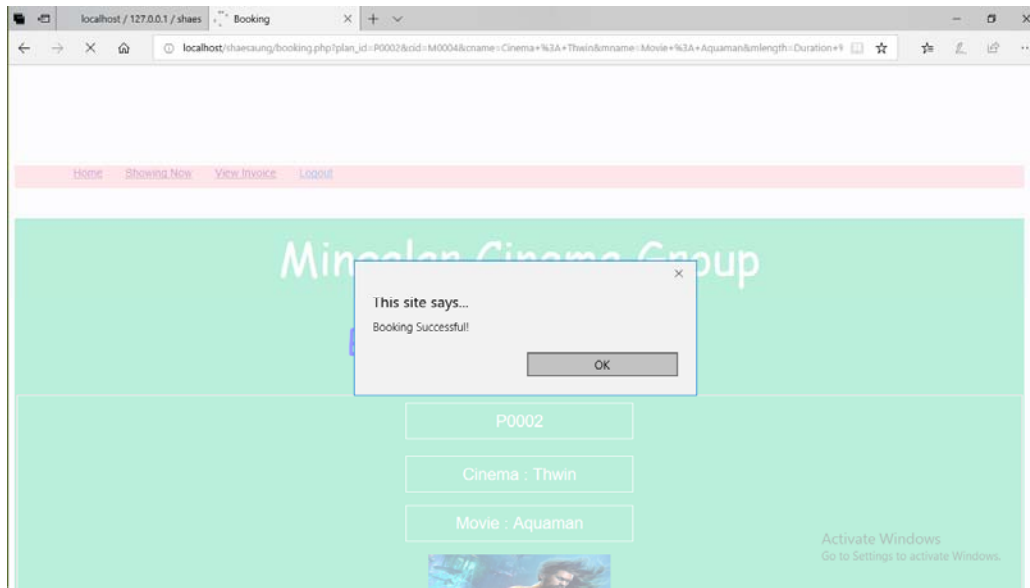


Fig (10.3.4.2) “Booking successful” message will appear if available

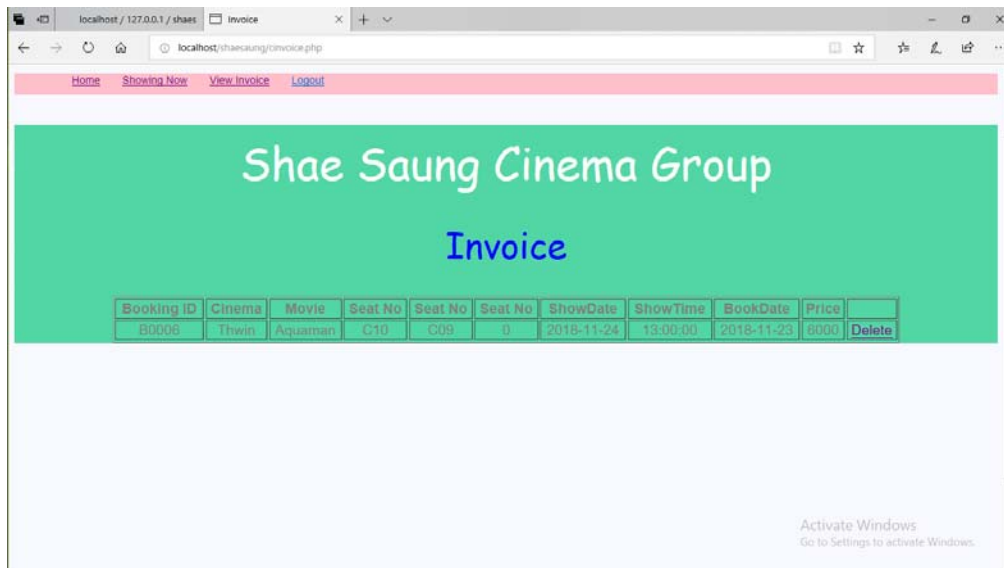


Fig (10.3.4.3) The invoice for the booking

Cinema ID	Cinema Name	Cinema Location	Edit	Delete
C001	Mingalar	Latha	<a href="#">Edit</a>	<a href="#">Delete</a>
C002	Thwin	Kyautata	<a href="#">Edit</a>	<a href="#">Delete</a>
C003	Shae Saung	Kyautata	<a href="#">Edit</a>	<a href="#">Delete</a>
C004	Nay Pyi Ta	Kyautata	<a href="#">Edit</a>	<a href="#">Delete</a>
C005	Thamada	Dagon	<a href="#">Edit</a>	<a href="#">Delete</a>

Fig (10.4.1) cinema registration page

Cinema ID	Cinema Name	Cinema Location	Edit	Delete
C001	Mingalar	Latha	<a href="#">Edit</a>	<a href="#">Delete</a>
C002	Thwin	Kyautata	<a href="#">Edit</a>	<a href="#">Delete</a>
C003	Shae Saung	Kyautata	<a href="#">Edit</a>	<a href="#">Delete</a>
C004	Nay Pyi Ta	Kyautata	<a href="#">Edit</a>	<a href="#">Delete</a>
C005	Thamada	Dagon	<a href="#">Edit</a>	<a href="#">Delete</a>
C006	Top Royal	Sein Gay Har	<a href="#">Edit</a>	<a href="#">Delete</a>
C007	Mingalar 2	Dagon Center II	<a href="#">Edit</a>	<a href="#">Delete</a>
C008	Mingalar Sangpys	Latha	<a href="#">Edit</a>	<a href="#">Delete</a>
C009	Mingalar Waziyar	Hlaing Thar Yar	<a href="#">Edit</a>	<a href="#">Delete</a>
C010	Mingalar Cineplex	Heidan	<a href="#">Edit</a>	<a href="#">Delete</a>
C011	Hlate Htar	Ho Nar Ka	<a href="#">Edit</a>	<a href="#">Delete</a>

Fig (10.4.1) The registration success by checking the table

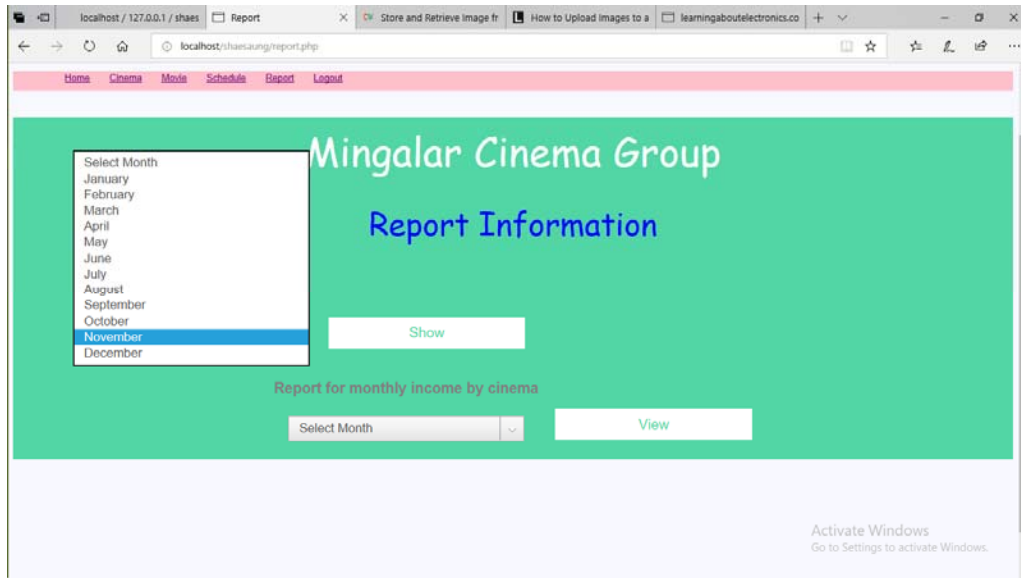


Fig (10.5.1) Report for the movie list by selecting the month to make

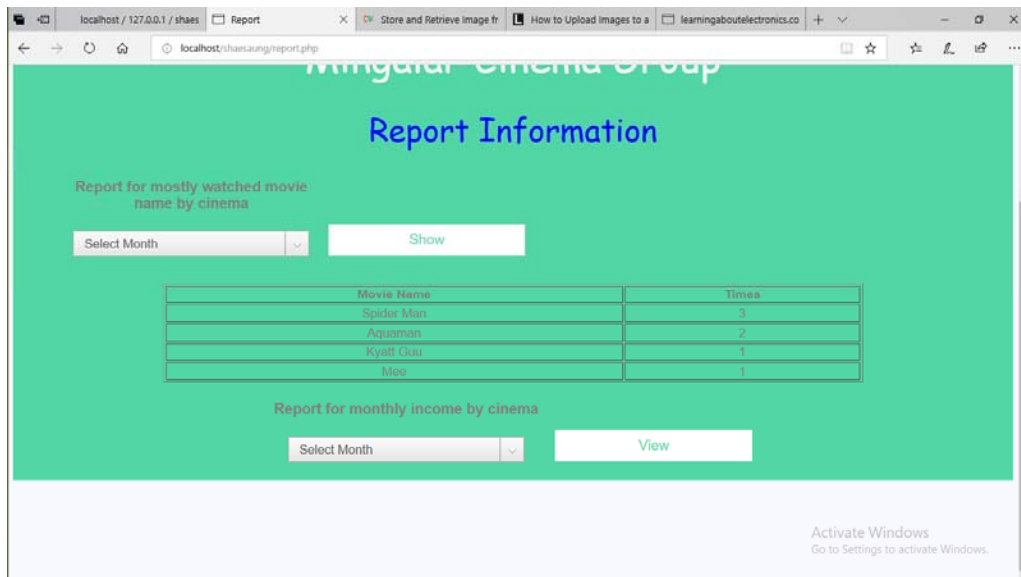


Fig (10.5.2) The report information for the selected report type



## Chapter 11 – System Implementation

For the current system to deploy, the following will be needed.

- Xampp (Database Server Side)
- NotePad++ (Programming )
- Google Chrome or Microsoft browser (Brower)

### 'admin' table and its attributes

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	<b>adminid</b>	varchar(5)	latin1_swedish_ci		No	None			Change  Drop  More
2	<b>adminname</b>	varchar(10)	latin1_swedish_ci		No	None			Change  Drop  More
3	<b>password</b>	varchar(5)	latin1_swedish_ci		No	None			Change  Drop  More
4	<b>admin_email</b>	varchar(20)	latin1_swedish_ci		No	None			Change  Drop  More
5	<b>admin_address</b>	varchar(20)	latin1_swedish_ci		No	None			Change  Drop  More
6	<b>admin_phone</b>	varchar(10)	latin1_swedish_ci		No	None			Change  Drop  More

▼	adminid	adminname	password	admin_email	admin_address	admin_phone
lete	A001	hhh	a3aca2964e72000eea4c56cb341002a4	hhh@gmail.com	Mdy	09-641644
lete	A002	Nyein	a34800c968ee9fe3576fd7cb7d68ad94	nyein@gmail.com	POL	09-4515564
lete	A003	zzz	f3abb86bd34cf4d52698f14c0da1dc60	zzz@gmail.com	POL	0926241
lete	A004	myo	de9d37acd3491a1a1826ba587b1fc8d8	myo@gmail.com	myo	16516563

### 'cinema' table and its attributes

Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<b>cinemaid</b>	varchar(5)	latin1_swedish_ci		No	None			Change  Drop  More
<b>cinemaname</b>	varchar(10)	latin1_swedish_ci		No	None			Change  Drop  More
<b>cinemalocation</b>	varchar(10)	latin1_swedish_ci		No	None			Change  Drop  More

	cinemaid	cinemaname	cinemalocation
Copy  Delete C001	C001	Minagalar	Latha
Copy  Delete C002	C002	Thwin	Kyautata
Copy  Delete C003	C003	Shae Saung	Kyautata
Copy  Delete C004	C004	Nay Pyi Ta	Kyautata
Copy  Delete C005	C005	Thamada	Dagon
Copy  Delete C006	C006	Top Royal	Sein Gay Har
Copy  Delete C007	C007	Mingalar 2	Dagon Center II
Copy  Delete C008	C008	Mingalar Sanpya	Lathar
Copy  Delete C009	C009	Mingalar Waziyar	Hlaing Thar Yar
Copy  Delete C010	C010	Mingalar Cineplex	Heldan

### 'booking' table and its attributes

Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<b>exbookid</b>	varchar(10)	latin1_swedish_ci		No	None			Change  Drop  More
<b>memberid</b>	varchar(5)	latin1_swedish_ci		No	None			Change  Drop  More
<b>planid</b>	varchar(10)	latin1_swedish_ci		No	None			Change  Drop  More
<b>seatid1</b>	varchar(5)	latin1_swedish_ci		No	None			Change  Drop  More
<b>seatid2</b>	varchar(5)	latin1_swedish_ci		Yes	None			Change  Drop  More
<b>seatid3</b>	varchar(5)	latin1_swedish_ci		Yes	None			Change  Drop  More
<b>bookdate</b>	date			No	None			Change  Drop  More
<b>showdate</b>	date			No	None			Change  Drop  More
<b>showtime</b>	time			No	None			Change  Drop  More
<b>totalprice</b>	int(11)			Yes	None			Change  Drop  More

	exbookid	memberid	planid	seatid1	seatid2	seatid3	bookdate	showdate	showtime	totalprice
te B0001	M0001	P0001	A01	0	0		2018-11-19	2018-11-22	10:00:00	3000
te B0002	M0002	P0003	G07	G08	G09		2018-11-19	2018-11-23	10:00:00	6000
te B0003	M0003	P0004	G06	G08	0		2018-11-20	2018-11-23	10:00:00	4000
te B0004	M0003	P0003	G07	G06	0		2018-11-21	2018-11-23	10:00:00	4000
te B0005	M0003	P0001	G02	G01	0		2018-11-21	2018-11-23	10:00:00	4000

### 'member' table and its attributes

Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<b>memberid</b>	varchar(10)	latin1_swedish_ci		No	None			Change  Drop  More
<b>mname</b>	varchar(20)	latin1_swedish_ci		No	None			Change  Drop  More
<b>mpassword</b>	varchar(20)	latin1_swedish_ci		No	None			Change  Drop  More
<b>memail</b>	varchar(20)	latin1_swedish_ci		No	None			Change  Drop  More
<b>maddress</b>	varchar(100)	latin1_swedish_ci		No	None			Change  Drop  More
<b>mphone</b>	int(13)			No	None			Change  Drop  More

		▼	memberid	mname	mpassword	memail	maddress	mphone
	Delete		M0001	aaa	47bce5c74f589f4867dbd57e9ca9f808	aaa@gmail.com	aaa	111
	Delete		M0002	Myo Thiha	06c56a89949d617def52f371c357b6db	momo@gmail.com	bbb	222
	Delete		M0003	zzz	f3abb86bd34cf4d52698f14c0da1dc60	zzz@gmail.com	zzz	999
	Delete		M0004	Thura	b04153a76b0e5b59edc0d4565cb9b25b	thura@gmail.com	rrriiiipppp	1651616

### 'movie' table and its attributes

Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<b>movieid</b>	varchar(5)	latin1_swedish_ci		No	None			Change  Drop  More
<b>moviename</b>	varchar(20)	latin1_swedish_ci		No	None			Change  Drop  More
<b>movietype</b>	varchar(10)	latin1_swedish_ci		No	None			Change  Drop  More
<b>moviephoto</b>	varchar(20)	latin1_swedish_ci		No	None			Change  Drop  More
<b>moviedes</b>	varchar(300)	latin1_swedish_ci		Yes	None			Change  Drop  More

		▼	movieid	moviename	movietype	moviephoto	moviedes
	Copy  Delete		V0001	Wali Diwali	2D	1a.JPG	Indian Movie: Watch in good
	Copy  Delete		V0002	Aquaman	3D	2a.JPG	Marvel: Watch in good
	Copy  Delete		V0003	Spider Man	3D	3a.JPG	Into the spider verse
	Copy  Delete		V0004	Kyatt Guu	3D	4a.JPG	Myanmar Movie: Watch is not better
	Copy  Delete		V0005	The KingDo	3D	5a.JPG	Better in watch
	Copy  Delete		V0006	Mee	2D	6a.JPG	Myanmar Movie: Good to watch

























### 'plan' table and its attributes (schedule plan)

Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<b>planid</b>	varchar(10)	latin1_swedish_ci		No	None			Change  Drop  More
<b>cinemaid</b>	varchar(5)	latin1_swedish_ci		No	None			Change  Drop  More
<b>movieid</b>	varchar(5)	latin1_swedish_ci		No	None			Change  Drop  More
<b>movielength</b>	int(11)			Yes	None			Change  Drop  More
<b>startdate</b>	date			Yes	None			Change  Drop  More
<b>enddate</b>	date			Yes	None			Change  Drop  More
<b>adminid</b>	varchar(5)	latin1_swedish_ci		Yes	None			Change  Drop  More

	planid	cinemaid	movieid	movielength	startdate	enddate	adminid
Delete	P0001	C001	V0006	120	2018-11-22	2018-11-29	A001
Delete	P0002	C002	V0002	90	2018-11-22	2018-11-29	A003
Delete	P0003	C003	V0003	90	2018-11-19	2018-11-26	A002
Delete	P0004	C004	V0004	90	2018-11-19	2018-11-26	A003
Delete	P0005	C002	V0005	120	2018-11-23	2018-11-30	A002

### 'seat' table and its attributes

Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<b>seatid</b>	varchar(5)	latin1_swedish_ci		No	None			Change  Drop  More
<b>seattype</b>	varchar(10)	latin1_swedish_ci		Yes	None			Change  Drop  More
<b>price</b>	int(11)			Yes	None			Change  Drop  More

				seatid	seattype	price
t		Copy	 Delete	A04	STALL	3000
t		Copy	 Delete	A05	STALL	3000
t		Copy	 Delete	A06	STALL	3000
t		Copy	 Delete	A07	STALL	3000
t		Copy	 Delete	A08	STALL	3000
t		Copy	 Delete	A09	STALL	3000
t		Copy	 Delete	A10	STALL	3000
t		Copy	 Delete	G01	DC	2000
t		Copy	 Delete	G02	DC	2000
t		Copy	 Delete	G03	DC	2000
t		Copy	 Delete	G04	DC	2000
t		Copy	 Delete	G05	DC	2000
t		Copy	 Delete	G06	DC	2000
t		Copy	 Delete	G07	DC	2000
t		Copy	 Delete	G08	DC	2000
t		Copy	 Delete	G09	DC	2000

## Chapter 12 – Human Computer Interaction (HCI)

HCI is learning of how people, from the individual to the groups, interact with the interface of the presentation layer of a software in a computer. HCI for an environment can't be same with others because there are different ways of learning style and keeping the knowledge and also in different cultures. Finally, user preferences change as they gradually master new interfaces.

As technology is rapidly developing every day, HCI based on these technologies becomes more important for the usability goals and user experience goal. The usability goal is that it is error-free, efficient, easy to learn, easy to remember and easy to use. The user experience goals mean an aesthetic satisfying, fun at using, motivating, attractive and reliable design.

HCI can be divided into the following interface types:

- Graphical User Interface (GUI): graphical icons where user interacts with the computer
- Human-Computer Interaction (HCI): the communication between people and computer systems
- Human-Computer Interface: the interface that allows the person and the computer to communicate
- Menu Driven Interface: interface that allows people to interact with a computer system through a series of menus
- Voice Driven Interface: voice recognition, used to issue the input to a computer
- Command Line Interface (CLI): text based interface by typing in a command
- Touch Sensitive Interface: touch sensitive interfaces (touchscreens), extensively used in mobile devices.

There are six principles to know the HCI is good design and they are showing below -

1. The simplicity principle: The design should be simple and common tasks easy, communicating clearly and used in customer's default language, providing good shortcuts that are meaningfully related to longer procedures.
2. The structure principle: Design the user interface in efficient and effective way based on clear, consistent models and that need to look familiar and recognizable to users and it is concerned with overall user interface architecture.
3. The reuse principle: The design should reuse internal and external components and behaviors, maintaining consistency with purpose rather than merely arbitrary consistency, thus reducing the need for users to rethink and remember
4. The tolerance principle: The design should be flexible and tolerant, reducing the cost of mistakes and misuse by allowing undoing and redoing.
5. The visibility principle: The design should make all needed options and materials for a given task visible without distracting the user with unneeded information.
6. The feedback principle: The good design should allow the users to make action or allow to participate in the changes of system, where the errors or exceptions are welcome to change.

At the current condition, the videos, graphics (virtual reality), and speech technologies (supporting with other languages) are supporting in HCI for better user-experience and later I guess it may also include AI (Artificial intelligence) for more efficient.

## User Analysis

We need to analysis what is the requirement for the interface, what type of interface is needed, what the interface will be used for and who will use it.

Basically there are three types of users, depend on the experience and frequent of use and they are:

- New user: first time of use,
- Normal user: has used the system or similar system and
- Expert user: expert and know the system very well.

For the new user, the supporting services like using documentation or guidance of tutorial steps, how to use the system. And for the expert and normal users are provided with shortcuts and allowed to write feedbacks of the system.

By doing this, the HCI for the current project, Cinema ticket booking system, can be improved in user experience and more users will use and tried to feedback.



## Chapter 13 – System Security

As the technology is rapidly increasing every day, it is easier to break the security of a web or app or program. And it is difficult to measure that the web or site or app is secure or not but we can protect the security threats with the strongly built secure counter measure.

The threats can be seen as many different forms and they are called as malicious software (malware). When a website is infected with malware, then malware will spread its malware-programs to all the visitors and steal or delete or edit all the customer information (names and email, phone number, address, credit card number and other transaction information) and make all sites inherently insecure.

Computer viruses and worms are the software programs that can self-copy and spread between computers. Trojan horses and spyware are misleading the users of its true intent and allow the attacker to access user information without user knowledge. Malicious rootkits (collection of malwares) and phishing mail spam (an email that entered in the form of someone mail or advertisement) are the mostly seen forms of malwares.

### The problem areas and the recommend solutions

#### Web and application server

Web and application server security involves the proper operation of user authentication and access control, as well as a detailed examination of the Web system components used to drive dynamic and interactive content.

##### Authentication

Verification of a user's identity is referred to as authentication. Users can prove their identity in several ways, most commonly through a user ID and password. HTTP basic authentication and custom authentication forms.

##### Authorization

For a Web system, authorization means giving a user permission to access a resource, such as a Web page, on the Web server. Once the user completes the login procedure, the security approach taken by the system will vary, depending on its access control requirements, web server access and database access.



## **Database server**

The safe-guarding of site data and user confidential information to protect it from being accessed by unauthorized users. The storage of data and user-specific information by the Web system requires that safeguards be in place to protect this information.

### **Data Encryption**

The safest way to avoid problems with unauthorized access to site data is to encrypt the data while it is stored in the database. When it must be accessed for processing, the data is read from the database and then decrypted in memory.

Encryption of the data ensures that whenever an attacker finds a way to access the system database or, in the case of a file-based database, simply downloads it, the data will be unreadable.

## **Secure communications**

Transmission of critical user data, such as payment and other private information, via Secure Sockets Layer (SSL) protocol, to protect user information from network eavesdroppers.

SSL enables two parties to communicate in an encrypted form over a network. Establishing a secure communications session between a browser client and a Web server entails several steps.

- A well-known certificate authority must grant the Web server a valid certificate.
- The client computer must be configured with the public key of the certificate authority (CA) that issued the server's certificate.

## **Network Security**

Routers and firewalls can be used to hide and restrict access the unknown connections to the pockets and services of the web server. For the vulnerabilities of site's firewall or servers, port scanning host can also be used. It is used in the process of attempting to connect many TCP/IP or UDP/IP ports on a wide range of servers on the Internet.

## **Computers or Desktop PC**

To protect the computer from computer virus and malwares, the computers from the office need to install antivirus software or antimalware software and they can get free or paid based on the kinds of services.

Antivirus software or malicious spyware can used to describe the Trojan application that was created by cybercriminals to spy on their victims. An example would be key-logger software that records a victim's every keystroke on his or her keyboard. The recorded information is periodically sent back to the originating cybercriminal over the Internet. Key-logging software is widely available and is marketed to parents or businesses that want to monitor their kids' or employees' Internet usage.

## Chapter 14 – Critical Appraisal

I aimed to develop the web based booking system for cinema tickets at the start of the project because I love watching in cinema and it gives me refresh every time when I feel depressed. At first I think it would be easy enough to develop because it is not difficult and the required information can be gotten easily. But in reality, it is not like that kind of easy development. The data flow, the organizational structure and the people's interests are always changing. We need to view from various point, not only just depend on the ideas but also need to base on the reality.

As the system is dynamic and the requirements are not in fixed, I decided to use the flexible development, agile framework. Although there are many different kinds of software development methodologies in agile, I chose DSDM Atern as the software development life cycle. DSDM Atern is different from other methodologies, it is used to focus on the people problems more than technology and it can develop faster than others as it is based on RAD technique (iterative development).

So, I made the feasibility study to underline on the current problems. The current system is allowed to book only from phone or self-ticketing system so there are many problems that is currently occurring. Allow only booking by phone has come in the result of traffic in phone connection, delaying to get connection with the cinema. So, the web system will need to allow booking from online without traffic and to show the information of the cinemas and movies that are showing now or will show soon.

To know the requirements of the new system, I need to take the fact finding methods. The JRP (workshops) and researching documentations are the fastest way of gathering the required information and they can save time. By the solution outcomes from analysis, the new system is designed by the use UML diagram as it is the people focus system. The use cases model, activity diagrams, class diagrams, robust and sequences diagram are used to design. Then the purposed system is started to develop by the use of PHP language in Notepad++. And the data are stored on the XAMPP server. As the system is web-based, the security is too important for the safety of the customer data.

Then the testing is used to check the functionality of the system work correctly or not in the black box and white box testing methods. For the final step, to offer the better user experience goals, the system is implemented in easy to use and effective form and for the new system, the user guide is also implemented in the new system.

## Conclusion

The new system is aimed to solve the problems of the current system but there is still vulnerability in the new system like the HCI and Security problems. And the current system doesn't include payment system from online. It may be needed in the next future development.

By doing this project, I have known much about the software product life cycle and how they are working in repeated life cycle and my technical skill for programming and database also has been improved. And I think I could be ready to handle if I faced with this kind of organization and could make better decisions.

## References

- Mohamed Sami. 2018. *Software Development Life Cycle Models and Methodologies* - Mohamed Sami. [ONLINE] Available at: <https://melsatar.blog/2012/03/15/software-development-life-cycle-models-and-methodologies/>. [Accessed 10 October 2018]
- Systems development life cycle - Wikipedia. 2018. *Systems development life cycle* - Wikipedia. [ONLINE] Available at: [https://en.wikipedia.org/wiki/Systems\\_development\\_life\\_cycle#Overview](https://en.wikipedia.org/wiki/Systems_development_life_cycle#Overview). [Accessed 20 October 2018].
- Anon, (2018). [online] Available at: <https://www.agilebusiness.org/content/lifecycle> [Accessed 23 October 2018].
- Agile Business Consortium. 2018. *Choosing DSDM as your Agile Approach* | Agile Business Consortium. [ONLINE] Available at: <https://www.agilebusiness.org/content/choosing-dsdm-your-agile-approach-0>. [Accessed 23 October 2018].
- Google Books. 2018. *DSDM, Dynamic Systems Development Method: The Method in Practice* - Jennifer Stapleton - Google Books. [ONLINE] Available at: [https://books.google.com.mm/books?id=kp656t4p7soC&pg=PR5&source=gbv\\_selected\\_pages&cad=2#v=onepage&q&f=false](https://books.google.com.mm/books?id=kp656t4p7soC&pg=PR5&source=gbv_selected_pages&cad=2#v=onepage&q&f=false). [Accessed 1 November 2018].
- Purple Zeus. 2018. *Software development approaches*. [ONLINE] Available at: <https://www.purplezeus.com/software-development-approaches.html>. [Accessed 10 November 2018]
- Christopher J. Wells. 2018. *The System Investigation* . [ONLINE] Available at: <http://www.technologyuk.net/software-development/sad/investigation-techniques.shtml>. [Accessed 12 November 2018].
- Definition Of Fact Finding Techniques Information Technology Essay. 2018. *Definition Of Fact Finding Techniques Information Technology Essay*. [ONLINE] Available at: <https://www.ukessays.com/essays/information-technology/definition-of-fact-finding-techniques-information-technology-essay.php>. [Accessed 12 November 2018]
- Examples of Business Feasibility Reports | Chron.com. 2018. *Examples of Business Feasibility Reports* | Chron.com. [ONLINE] Available at: <https://smallbusiness.chron.com/examples-business-feasibility-reports-20382.html>. [Accessed 15 November 2018].
- tutorialspoint.com. 2018. *System Analysis and Design Structured Analysis*. [ONLINE] Available at: [https://www.tutorialspoint.com/system\\_analysis\\_and\\_design/system\\_analysis\\_and\\_design\\_structured.htm](https://www.tutorialspoint.com/system_analysis_and_design/system_analysis_and_design_structured.htm). [Accessed 17 November 2018].
- Scribd. 2018. *Traditional Approach VS OO Approach* | Object (Computer Science) | Class (Computer Programming). [ONLINE] Available at: <https://www.scribd.com/doc/20356939/Traditional-Approach-VS-OO-Approach>. [Accessed 19 November 2018].
- Dataconomy. 2018. *The 5 Best Reasons to Choose MySQL - and its 5 Biggest Challenges* - Dataconomy. [ONLINE] Available at: <https://dataconomy.com/2017/04/5-reasons-challenges-mysql/>. [Accessed 20 November 2018].

- Web System Security | Overview | InformIT. 2018. *Web System Security | Overview / InformIT*. [ONLINE] Available at: <http://www.informit.com/articles/article.aspx?p=24480>. [Accessed 21 November 2018].
- j6 design. 2018. *The principles of design / J6 design Australia*. [ONLINE] Available at: <http://www.j6design.com.au/6-principles-of-design/>. [Accessed 21 November 2018].
- tutorialspoint.com. 2018. *System Analysis and Design Testing and Quality Assurance*. [ONLINE] Available at: [https://www.tutorialspoint.com/system\\_analysis\\_and\\_design/system\\_analysis\\_and\\_design\\_testing\\_quality\\_assurance.htm](https://www.tutorialspoint.com/system_analysis_and_design/system_analysis_and_design_testing_quality_assurance.htm). [Accessed 23 November 2018].

