CHAPTER 3

OBJECT AND METHODS

3.1. Research Object

The object of the research is purposely for Ahmadies Cinema or it can be for any other cinema in Kabul, Afghanistan. The research is mainly base on the focuses of implementing the Online ticket Booking system into the Cinema Existing system in which Cinema customers can use the system online via the use of internet has the primary requirement for them to register, make booking and booking payments.

This research is processed and taken place at the Computer University of Indonesia (UNIKOM) West Java Province, Bandung

3.1.1. History of Cinema

By the early 1930s, nearly all feature-length movies were presented with synchronized sound and, by the mid-1930s, some were in full color too. The advent of sound secured the dominant role of the American industry and gave rise to the 'Golden Age of Hollywood'.

During the 1930s and 1940s, cinema was the principal form of popular entertainment, with people often attending cinemas twice weekly. In Britain the highest attendances occurred in 1946, with over 31 million visits to the cinema

3.1.2. Organizational Structure of a Cinema

Below is the Organizational structure of a cinema
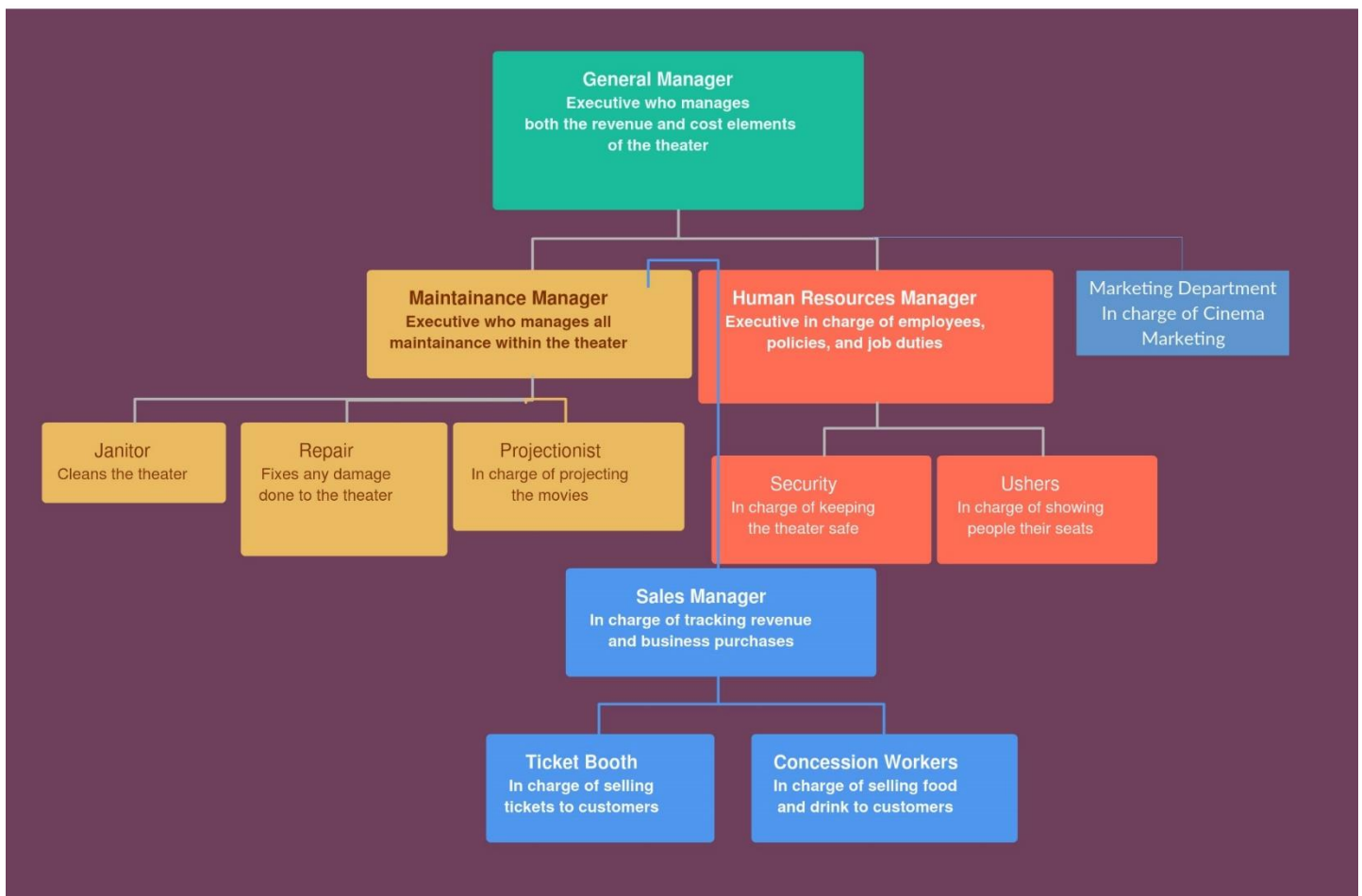
Figure 3. 1 Organizational structure of a cinema

3.2. Research Method

The research Methods preparation of this research, Descriptive Qualitative Approach was used to collect data, analyze and explained about the observation of this field.

3.2.1 Research Design

The definition of research is a detail outline and investigation will take place. A research design will typically include how data is used to be collected, what instruments will be employed, how the instruments will be used and the intended means for analysis data collected.

According to Robert Glass describes, "Great software designers as having a large set of standard patterns that they carry around with them and apply to their designs". This is what design experience all about. Doing design over and over again learning from experience.
Butler Lampson says, "Most of the time, a new program is a refinement, extension, generalization or improvement of an existing program.

3.2.2 Types and Data Collection Methods

Types and data collections are as follows;

3.2.2.1. Collecting primary Data

Primary data is unknown data which the researcher have conduct and investigation on particular areas. Through the investigation of the researcher identifies the unknown data from

gathering information from different sources. For this research, these two methods of collecting primary data considered into consideration.

3.2.2.2. Collecting Secondary Data

Secondary data is collect from data source which have being existing. To this research, the researcher collected data from the previous research, web-based information's and historical data about online Banking and cinema.

3.2.3 Method and System Development Approach

In this section, it explains about system approach, the development of systems, method analysis and design analysis tools. Following is the description of the approach and system development.

3.2.3.1. System Approach Method

The method researcher used in the system approach is the Object Oriented System Approach and is visualize with UML (Unified Modeling Language) diagrams as follows: Use Case Diagram, Activity Diagram, Sequence Diagrams, Class Diagrams Collaboration Diagrams,

Jia-Chin Lin (University of Missouri, St. Louis 2011), states "The object oriented approach looks at a system from a bottom-up view. It combines data and processes (methods) into objects. Within an information system, objects could be customers, suppliers, contracts, and rental agreements. A

set of diagrams or models is used to represent various views and functionality of the system and is commonly known as Unified Modeling Language (UML).

The object-oriented approach later becomes known as the unified process when these models are used along with a particular method of systems development. Unified process is an iterative and incremental approach to systems development. The goal of object-oriented analysis and design is to improve system quality and productivity of systems analysis and design by making it more usable. Objects are grouped into classes to share structural and behavioral characteristics. Object-oriented analysis and design also incorporates the use of inheritance; it allows the creation of new classes that share the characteristics of existing classes. Similar to the agile methodologies, the object-oriented approach to systems development is similar in the way of iterative development approach. In the analysis phase, object-oriented models are used to fill the gap between a problem and the solution. The aim, in essence, is to transform the use cases into analysis model to realize the associated goals

3.2.3.2. Systems Development Method

The system development method used in the research is the Prototype Model. The software prototyping refers to build software application prototype which displays the functionality of the product under development but may not actually hold the exact logic of the original software. Software prototyping is becoming very popular as a software development model, as it enables to understand the customer requirements at an early stage of development.

It helps gets valuable feedbacks from the customer and helps software designers and developers understand about what is expected from the development.

According to Sona Malhotra (International Journal of Advance in Information Technology), "Instead of freezing the requirements before a design or coding can proceed, a throw away prototype is built to understand the requirements. This prototyping is an attractive idea for complicated and large systems for which there is no manual process or existing system to help determining the requirements. A prototype is a toy implementation of a system; usually exhibiting limited functional capabilities, low reliability and inefficient performance. "
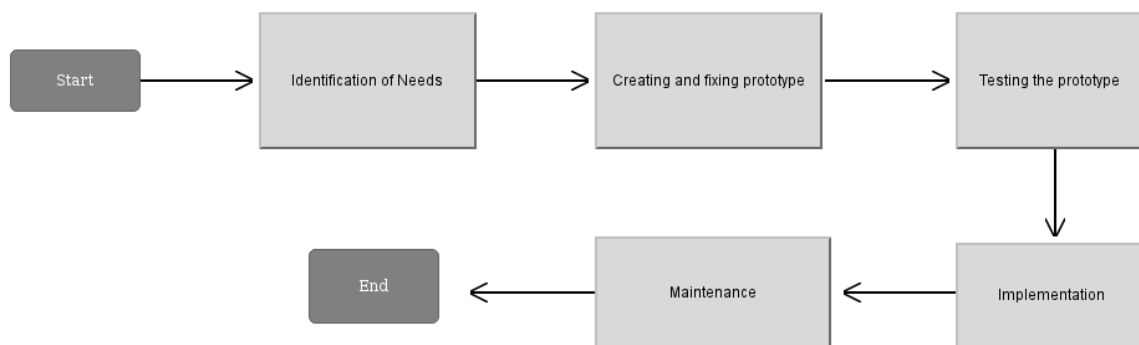
Figure 3. 2 Prototype of Online movie booking system – Source

The following is the stepwise approach taken to design Online Banking system prototype.

1. **Basic Requirements Identified:**

This step involves understanding the very basic system requirements of online movie booking system especially in the terms of user interface. The more intricate details of the internal design and external aspects like performance and security were neglected in this stage.

2. Developing the initial Prototype:

The initial Prototype of online movie booking system was developed in this stage, where provided. These features may not exactly work in the same manner internally in actual software developed and the work around we used to give the same look and feel to the customer in the prototype developed.

3. Review of the Prototype:

The prototype of the Online Movie booking system developed was presented to my supervisor in the research. The feedback were collected in a organized manner and used for further enhancements in the system development

3.2.3.3. Analysis and Design Tool

With a systems approach that is object-oriented, the researcher used a modeling language called the Unified Modeling Language (UML). According to IBM (ibm.com website), UML is a visual language for specifying, constructing, and documenting the artifacts of systems. Therefore, the developing system is visualize by the following UML diagrams:

1. Class Diagrams

Class diagrams are the most common diagrams used in UML. Class diagrams consists of class, interfaces, associations and collaborations. Class diagrams basically represent the object-oriented view of a system which is the statistic nature. Active class is used in a class diagram to represent the concurrency of the system. Class diagram represents the object orientation of a system. And it is generally used for development purpose

2. Deployment Diagrams

Deployment diagrams are a set of nodes and their relationships. The nodes are physical entities where the components are deployed. Deployment diagrams are used for visualizing deployment view of the system. This is generally used by deployment team

3. Use Case Diagrams

Use case diagrams are a set of of use case, actor and their relationships. They represent the use case view of system. A use case represents a particular functionality of a system. Use case diagram is use to describe the relationships among the functionalities and their internal/external controllers. These controllers are known as actors.

4. Activity Diagrams

Activity diagrams describes the flow of the control in a system. It consists of activities and links. The flow can be sequential, concurrent or branched. Activities are nothing but the functions of system. Numbers of activities diagrams are prepare to capture the entire flow in a system. Activity diagrams are used to visualize the flow of controls in a system. This is prepared to have an idea of how the system will work and execute

3.2.4. Testing Software

There is a lot of testing techniques that can be used to test a software, including: Block Box Testing and White Box Testing. As for software testing that is done on this project is the Black Box Testing. According to Vangie Beal (webopedia.com), "Also known as funtional testing. A software testing technique whereby the internal workings of the item begin tested are not known by the tester. For example, in a black box test on a software design the tester only knows the inputs

and what expected outcomes should be and not how the program arrives at those outputs. The tester does not ever examine the programming code and does not need any further knowledge of program other than its specifications."

Black Box Testing – Steps

Here are the steps follows to any type of Back Box Testing.

1. Initially requirements and specifications of system are examined.

2. Tester choose valid inputs (positive test scenario) to check whether SUT processes them correctly. Also some invalid inputs (negative test scenario) are chosen to verify that the SUT is able to detect them.

3. Tester determines expected outputs for all those inputs.

4. Software tester constructs test cases with the selected inputs.

5. The test cases are executed.

6. Software tester compares the actual output with the expected outputs.

7. Defects if any are fixed and re-tested.

3.2.5. Analysis of Current System

Analysis of the system running is the decomposition activity of a complete information system into components that aim to identify and evaluate the problems that arise, obstacles that may occur and the expected needs, and as to proposed improvements that will be performed in the system.

3.2.5.1. Analysis of Document

Analysis of the document is to analyze all the documents that are used on the basis of an information system that is running. As for the types of documents used in online movie booking system is; Registration, watch movie trailers, book movie tickets, select your favorite seat, selecting your theater location, booking history, payment.

Table 3. 1 Document Analysis Table

| NO	Document Name	Commentary
Description: Document is about the user registration for Online movie booking system		
1.	Registration	Function: Registering for a user in online movie booking system. Source: administration Attributes: Customer name, last_name, sex, D.O.B, address, City, district, mobilenumber, email, passwords
2.	Edit Profile	Description: with this option customer can edit and make changes on their registered profile. Function: Profile information Source Customer Service Attributes: Customer name, last_name, sex, D.O.B, address, City, district, mobilenumber.

3.	My booking history	Description: Document containing customer booking history Function: History booking information Source: Customer service Attributes: movie, Theatr, show_date, show_time
4.	Buy tickets	Description: customer can buy ticket for movie, Function: buying tickets Source customer service Attributes: select_theatr, select_movie Select show time, select_category, select_showdate,

3.3. Analysis of current procedures

The analysis of the current procedures defines more clearly on how the system works to the identified problems faced by the system which can be capable to be use as the foundation for the design of the new proposed system. The analysis of the Online Banking system procedure is illustrate as follows.

3.3.1. Use Case Diagram illustrates online movie booking System.

Figure 3. 3 Use Case Diagram for online movie booking System
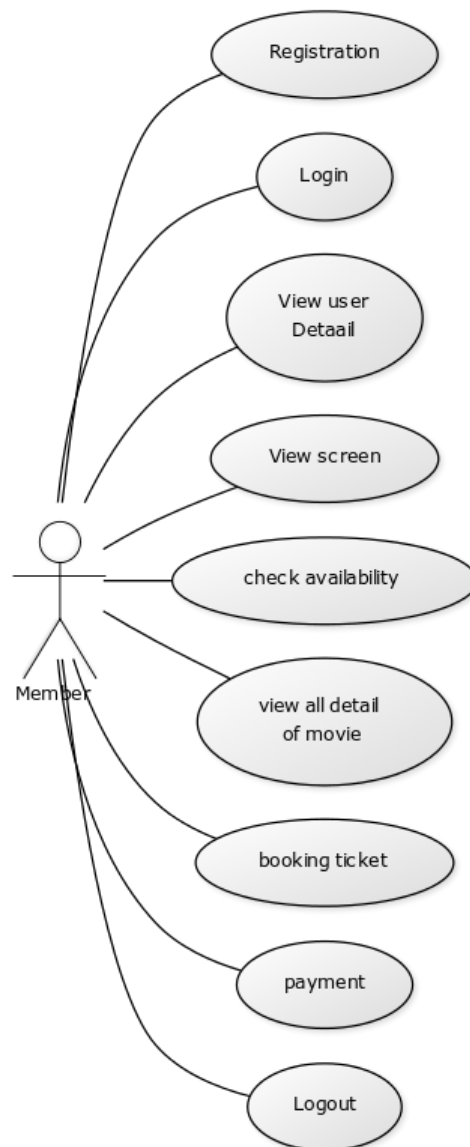
Figure 3. 4 Use Case Diagram for online movie booking System