

GAME INFORMATION SYSTEM

(An Android Application)

FOR

Y2K GAME STATION

BY

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STUDENT DECLARATION

This is to certify that I have partially completed the Summer Project entitled "Game Information system" under the guidance of "Mr. Dhiraj Kumar Jha" in partial fulfillment of the requirements for the degree of **Bachelor of Information Management** at Faculty of Management, Tribhuvan University. This is my original work and I have not submitted it earlier elsewhere.

Date:

Signature:

Name: Safal Lamichhane

CERTIFICATE FROM THE SUPERVISOR

This is to certify that the summer project entitled “**Game Information System**” is an academic work done by “**Safal Lamichhane**” submitted in the partial fulfillment of the requirements for the degree of **Bachelor of Information Management** at faculty of Management, Tribhuvan University under my guidance and supervision. To the best my knowledge, the information presented by him in the summer project report has not been submitted earlier

Signature of the Supervisor

Name: Dhiraj Kumar Jha

Designation:

Date:

ACKNOWLEDGEMENT

The Summer Project has been constructed for the fulfilment of the requirement of Y2K game station according to their demands. The completion of this summer project would not have been possible without the help of the administration of OIC. I would like to thank the entire administration of OIC as well as the faculty members of the BIM.

I would like to give my thanks to all the employees and administration of the Y2K game station for providing all the support and for co-operation with me throughout the project development period. Their help has been the great help in the phase of project development as well as project implementation.

I am also very thankful to teachers of OIC for their constant guidance and supervision regarding this project development. I would like to thank Mr. Dhiraj Kumar Jha my supervisor for his contribution in this project development process.

Lastly, I would like to thank all the people who were directly and indirectly associated with this project.

Safal Lamichhane

BIM 6th semester

EXECUTIVE SUMMARY

The project Game Detail System is basically developed to meet the requirement of Y2K game station as to provide a certain level of guidance for the players of Dota2 and record the information about the particular game. The major objective of this project is to help the new players of this game by giving information about the Dota2. The Dota2 is the online multiplayer game where there is 2 team consisting 5 player on one team and the winner is the team who destroys the ancient of another team.

The findings of the data and information are analyzed properly and based on that analysis; this report tends to find the possible solutions procedure.

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ABBREVIATIONS

BIM Bachelor of Information Management

DOTA Defence of the Ancients

OIC Orchid International College

TU Tribhuvan University

Chapter I Introduction

1.1 Background

The project Game Information System is basically developed to meet the requirement of Y2K Game Station so as to automate the records and entry of the game information thus helping the players to give information about the game. The major objective of this project is to help the new players to play the game more effectively. (Steam Community, 2007)

Introduction to Organization

Y2K Game Station is a well-established Game Zone located in Chakra path, Kathmandu. It provides various types of games as well. Y2K Game Station has got a many computers, play stations and X-box for game

1.2 Current Situation of the organization

1.2.1 Services

- Provides new types of games available.
- Introduce to many new games for play

1.2.2 Technology

The organization uses the proper technology but this project doesn't concern the technology used by the Y2K Game station.

1.2.3 Marketing Tool

- **Advertising**

Advertising is defined as any form of paid communication or promotion for product, service and idea. This organization promotes its products through social networking sites like Facebook and through other customers.

- **Public relations**

Companies cannot survive in isolation they need to have a constant interaction with customers, employees and different stakeholders. This servicing of relation is done by the public relation office. Y2K game zone has a good relation with others entities related directly or indirectly towards the organization.

- **Direct marketing**

The communication establishes through a direct channel without using any intermediaries is referred to as direct marketing. Direct marketing can be used to deliver message or service. Direct marketing has shown tremendous growth in recent years.

1.2.4 Business Process

A business process is an activity or set of activities that will accomplish a specific organizational goal.

- **Customer Service**

Customer service is like the core element of retail store operations. The customer service of the organization is good.

- **Operations**

The booking of different computer, X-boxes operations are carried out on the hourly basis.

1.3 Problem statement

The organization wants to expand and increase its services. Organization facing problem like problem in the management of their game due to which new players are likely to be demotivated to play the game again which can reduce the potential customers for the organization

1.4 Objective of the study

The main purpose of “Game Information System” is to achieve following types of objectives

1.4.1 General objectives

- To access the required information by the users about the game

1.4.2 Specific objectives

- To help the guidance for the game easier and automated
- To make the existing manual system for guiding new players into computerized system
- To help the users to find out the details of the heroes
- To add the heroes and items by the admin.

1.5 Methodology

The project is implemented using android, firebase. There are many advantages offered by tools which has merits like they are fast, stable, secure, and easy to use and it is easy to debug.

1.5.1 Project framework

The project framework is the steps of initiating, planning, executing, controlling and closing the work of a team or individual to achieve specific goals and meet specific success criteria.

The writing of summer project was primarily initiated for graduating BIM from Faculty of Management, TU. During the study in sixth semester all the students are required to submit their system as well as project report to their respective supervisor. The first step was the selection of organization. The selection of Y2K Game Station as the subject organization was done through personal channel.

The organization was often visited to observe and study the day-to-day activity of the organization and the business process of the organization. The employees as well as the managers in the organization were interviewed to meet their objectives.

While observing the Y2K Game Station it was found that the organization has single department. As per the study it was found that the organization does not have basic record of the heroes, items, powers used by the heroes which made the new players demotivated and hard to play the game.

After the analysis of the problem, the requirements for the proposed system were also planned. The Game Detail System was proposed to be developed. The system was made as per the requirement of the organization. The testing of the system was also performed every time the new components were added to the system

1.5.2 Data and information

The data regarding the Dota2 game and its details have been collected. (Dota2, 1999) The data collection methods that have been used are:

i. Primary method

The primary methods of data collection include:

- **Questionnaire method**

The set of questions had been made and asked to manager and pro players of the game to know about the present situation of the Dota2.

- **Personal Interview**

Some data and information have been collected informally by taking interview with the employees of the organization.

- **Observation**

Similarly, some data are even collected by observing the business environment or real working environment of the organization through the field visit.

ii. Secondary method

The other data and information were collected from the external source rather like the website of the Dota2 Valve which was open source and reliable to all the users. (Steam Community, 2007)

Chapter II Task and Activities Performed

2.1 Analysis of Task and Activities

To analyze any problem or situation, the study of the organization is must. For this the recommendation letter is provided by the college for visiting the organization. The organizational visit gives us the scenario of the organizational business activities and its process of operation by observation method. The interview method and questionnaire method are applied to know about the current situation of the organization as well as to analyze the task and activities of the particular organization. After gathering all the information it was found that the organization needs the Game Detail system.

It was found that the organization needs a system that could keep the track of a game Dota2 regarding their detail information .More over the system should only monitored and maintain the particular game.

2.1.1 Use-Case Diagram

A use case diagram simply is a representation of a user's interaction with the system that shows the relationship between the user and different cases in which the user is involved. In this system, the user can be the admin (manager). He/she interact with the system to retrieve their required information.

The use case diagram below shows two actors admin and the user. The admin is responsible for adding the information to the system whereas the user only gets the information added by the administrator.

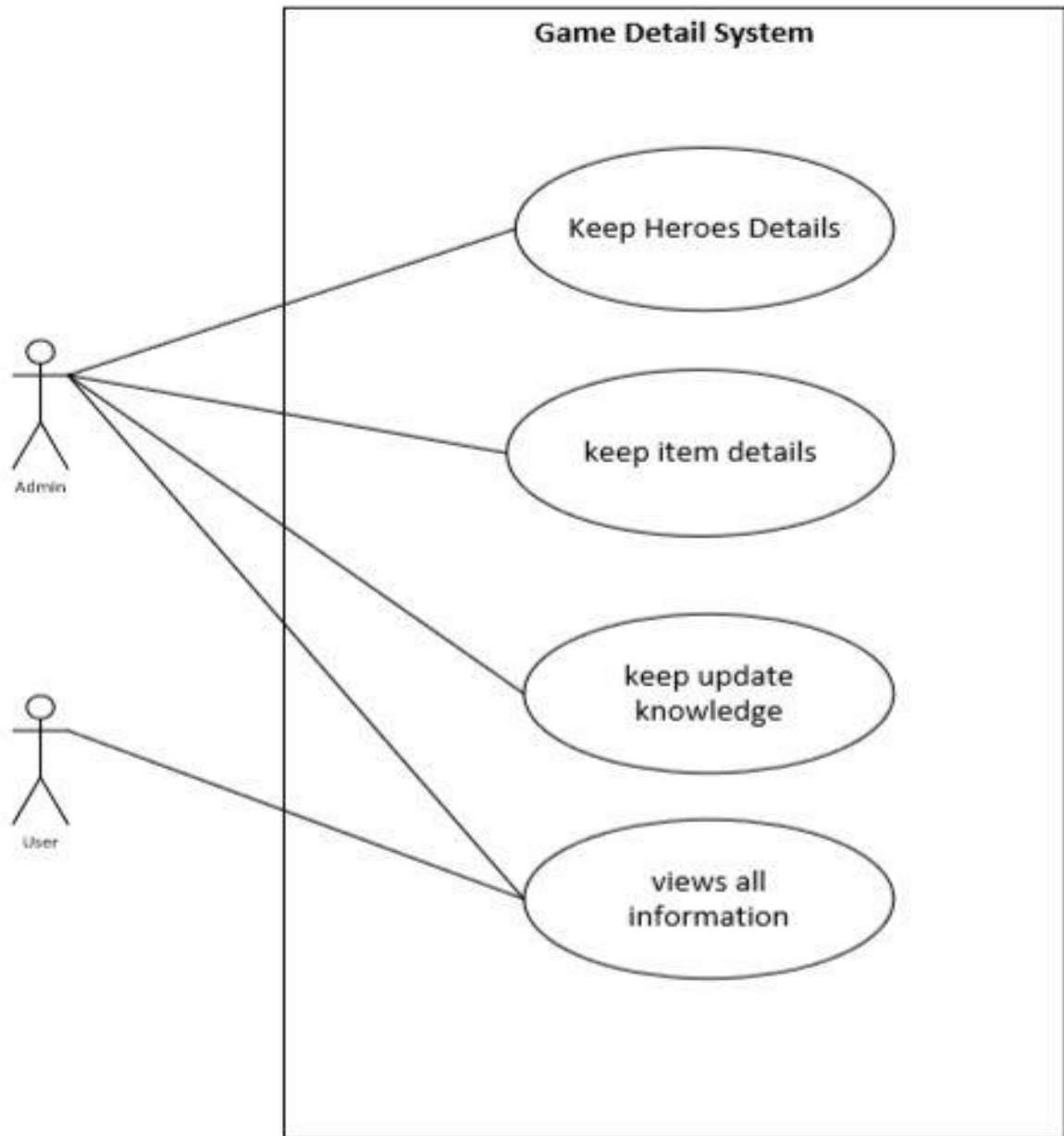


Figure 2.1 Use-Case Diagram

2.1.2 Use Case Description

Table 2.1 Keep Heroes Detail

Use Case Identifier	Uc1-Keep Heroes detail
Primary Actor	Admin
Secondary actor	NONE
Description:	The Detail of the heroes are stored and seen like name of the hero ,type of the hero, complexity can be displayed
Pre-condition	The heroes Detail should not be stored already
Post-condition	The database must be updated
Success Scenario	The Heroes Information can be Seen
Failure Scenario	The Heroes details aren't stored properly or there mayn't be that hero

Table 2.2 Keep Item Details

Use Case Identifier	Uc2-Keep item details
Primary Actor	Admin
Secondary actor	NONE
Description:	The detail of the item is recorded like item name and the type of the item whether it should be manually used or passive in nature
Pre-condition	The item detail should not be stored already and the user cant insert the item information
Post-condition	The database must be updated
Success Scenario	The details information can be seen
Failure Scenario	The item details are not stored properly or there mayn't be such item

Table 2.3 Keep Update Knowledge

Use Case Identifier	Uc3-keep update knowledge
Primary Actor	Admin
Secondary actor	NONE
Description:	The update of the games are commonly occurred and the admin should be able to update the information or patches properly
Pre-condition	The update must have some changes in the game elements like heroes power, new items and so on
Post-condition	The database must be updated
Success Scenario	The updated Information can be clearly seen
Failure Scenario	The updated information is not properly shown and recorded properly

Table 2.4 View Information

Use Case Identifier	Uc4-view information
Primary Actor	User
Secondary actor	Admin
Description:	All the information about heroes, items can be viewed by the user but is not able to make any changes on the contents.
Pre-condition	There must be information available for the user to view
Post-condition	The user must obtain the required information
Success Scenario	The user can see the particular needed information
Failure Scenario	The information is not properly shown or the information searched by user is not available

2.2 Analysis of problem

While observing the Y2K Game Station it was found that the organization has single department. As per the study it was found that the organization does not have the information recorded about the games: Dota2 being the highly played game (market heat) it is an initiative to keep the information about Dota2 which would help the players of this game station. The individual record of the game is also kept on the file which is manual based

The major problems of the organization are listed below:

- i. It does not have the system to keep the record of all the games.
- ii. It was difficult for new players to play the game due to which the owner requested to build this application.

Tools used

The tools used for the development of this project are:

1. Android studio
For the purpose of developing the GUIs coding the program
2. Google Firebase
For the purpose of connecting the databases
3. Microsoft Visio
Use case diagrams are developed using Visio
4. Microsoft Word
Use case Descriptions are developed using Microsoft word

2.3 Analysis of Possible Solutions

The only possible solution to get rid of all the problems of the organization is to develop Game Detail System. The project can be analysed by designing the system architecture. The architecture of the system of the project consists of different layers. The admin layer, where the operator uses the application and as well as interacts with the database to perform different activities such as inserting, deleting, updating and viewing.

The system architecture can be demonstrated into different models by the help of software engineering tools. They are use case, sequence, activity model. All the models are briefly explained below:

2.3.1 ER diagram

Diagrams created to represent attributes as well as entities and relationships may be called entity-attributes-relationship diagrams, rather than entity relationship model. An ER model is typically implemented as a database. This E-R model shows the relationship between admin, users and database. (DrawIO, n.d.)

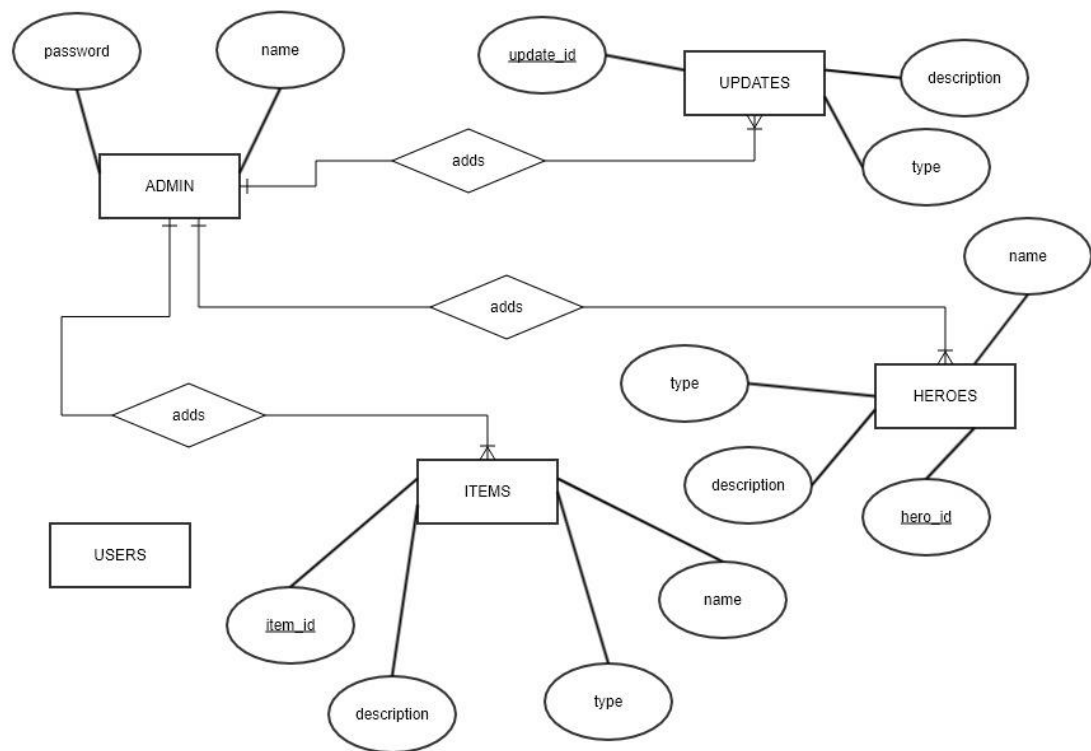


Figure 2.2 ER-Diagram

2.3.3 Sequence Diagram

The below diagram shows the add operation done by the administrator. The sequence diagram below shows the sequential operation while adding the heroes by the administrator. The sequence diagram is developed with the help of (SequenceDiagram,2018).

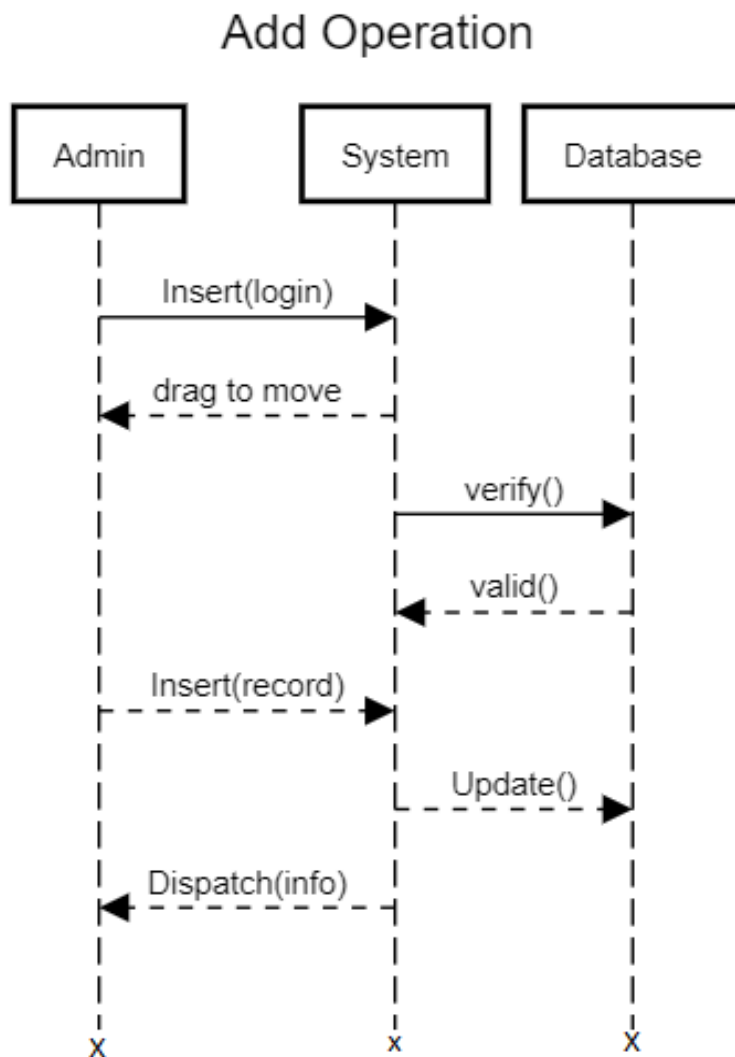


Figure 2.4 Sequence Diagram

Chapter III Discussions and Conclusions

3.1 Discussions

Before conduction of the project, while conducting and after the conduction, several facts and figures were discusses for smooth running. Major discussion like what problems to address, which programming language to use, which organization to target, the feasibility of the project, the time limitation and the availability of the required resources were discussed. The discussions provided the guide for the development of the android application.

Before the users were feeling difficult to know the heroes to play and the information on it but after the implementation of the application the new users are able to get the required information which helps their game. The limitation of this application is that the gameplay of the users can't be analysed which could help them to find out the weaknesses.

3.2 Conclusions

To conclude, the project has been able to develop the adding and viewing of the entities in the database. It has been able to give a unique username and password to the main admin who can only add information's and complete authority of the app is on his/her hands after building it. The application is actually able to give the required information for the users who are using the app and it is well designed according to the requirements stated by the Y2K Game Station for their users and the users requirements are also taken into consideration while developing the application.