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# FINAL DOCUMENTATION (Problem Statement, SRS, SDS, Test Plan)

for

## GCC Management System

Version <1.0>

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**Course:** COMP2140 – Introduction to Software Engineering

**Studio Facilitator:** <Dr. Ezra Mugisa>

**Date:** <29/11/2018>



***THE A-TEAM***

***PROBLEM STATEMENT***

***09.28.2018***



# **A-Team Members**

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## **Summary of Clients**

Damani and Alicia are the GCCs (Game committee chairpersons) for the newest hall of residence at UWI Mona, the George Alleyne Hall. The GCCs are responsible for organizing all the sporting events of the hall. This includes recruiting athletes, setting up training schedules, managing athlete data, and managing the approximately 40 persons that represent the hall in the different sporting events.

## **Issue Statement**

The current system is entirely manual (except for utilizing the halls general WhatsApp group). Currently, the GCCs must go from door to door to recruit interested members for the various sporting activities, this is both a tedious and time-consuming approach.

There is currently no way of knowing which athletes are free at what times nor which sports they do.

This may cause problems to arise when they need to create training schedules for the athletes. In addition, due to lack of adequate training schedules, the athletes are unable to attend training sessions leading to poor participation. Inadequate training for events results in poor performance which also hinder the committee from receiving sponsorships or improving their brand as a hall.

Information is disseminated through a WhatsApp group which the committee created for communication purposes, information about all events is communicated through this means leading to some athletes receiving constant messages about events that are not relevant to them; occasionally, this leads to them becoming annoyed which result in them ignoring/muting group chat messages, or the message gets lost in the constant stream of new messages that pop up for other events. The current

system used for storing athlete's information, which is vital for registering the athlete in the various events, is paper-based. Although this method still has its uses, it is not the most effective means of storage in the long run. Also, the athletes come from various faculties of University Of the West Indies, there are 7 faculties in total, which makes penciling out an optimum training schedule and meeting times for each athlete in the various events tiresome. This issue becomes prominent whenever there is a major upcoming sporting event and when a new athlete desires to participate. Should these issues remain unsolved, poor participation and middling athletic performance will continue to plague the hall, acquiring external funding and sponsorships will be extremely difficult.

## **Vision**

The GCC will be able to produce successful athletes and gain new sponsors owing to them having effective training schedules and proper communication channels for all athletes, committee members, and the public, thus building their brand as a hall.

## **Method**

Our group will employ the KISS principle (Keep it simple, stupid) to avoid making the system unnecessarily complicated and difficult to learn.

## **Stakeholders**

The stakeholders for this project are the GCCs of the George Allyene hall, the athletes of the George Allyene hall and potential sponsors. The Games Committee Chairpersons, Mr. Damani Modeste and Ms Alicia White, are the primary stakeholder of this project. With continued open communication, our team should be able to deliver a product that satisfies their requirements. The GCCs will have administrative access to the system, meaning they should have access to all the features of the system.

The athletes from the various sporting disciplines should be able to login and access information concerning them.

The system we are proposing should be the catalyst that catapults sporting performance on the George Allyene hall, therefore with improved performance the GCCs should be able to seek and attract sponsorship.

## Summary

Build a system for the GCCs that:

- Provides an efficient way of managing both athlete and inventory information.
- Produces optimal training schedules.
- Serves as an effective means of communication.
- The System will allow the GCCs to better manage the sporting portfolio and increase their chance of success in the different sporting events.
- Allow Interested parties to sign up for the various sporting teams.

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# Software Requirements Specification

for

## GCC Management System

Version <1.0>

Prepared by

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## TABLE of CONTENTS

### REVISIONS

#### **1. OVERALL DESCRIPTION**

- 1.1 Product Context and Need
- 1.2 Product Functionality
- 1.3 Stakeholders User Characteristics
- 1.4 Operating Environment
- 1.5 Design and Implementation Constraints
- 1.6 Assumptions and Dependencies

#### **2 .SPECIFIC REQUIREMENTS**

- 2.1 Functional Requirements
  - 2.1.1 Hardware interfaces
  - 2.1.2 Software Interfaces
  - 2.1.3 Communication Interfaces
- 2.2 Functional Requirements
- 2.3 Behavior Requirements
  - 2.3.1 Use Case View

#### **3.OTHER NON-FUNCTIONAL REQUIREMENTS**

- Performance Requirements
- Safety and Security Requirements
- Software Quality Attributes

#### **APPENDIX**

## Revisions

Version	Primary Author(s)	Description of Version	Date Completed
1.0	J.Sudderam J.Johnson T.Stewart T.Hyman R.Wright S.Hinds	Initial version of the system	03/11/18

# 1 Overall Description

## 1.1 Product Context and Need

Damani and Alicia are the GCCs (Game committee chairpersons) for the newest hall of residence at UWI Mona, the George Alleyne Hall. The GCCs are responsible for organizing all the sporting events of the hall. This includes recruiting athletes, setting up training schedules, managing athlete data, and managing the approximately 40 persons that represent the hall in the different sporting events. The current system is entirely manual, except for utilizing the hall's general WhatsApp group. Currently the GCCs have to go from door to door to recruit interested members for the various sporting activities, this is both a tedious and time-consuming approach.

Additionally, there is currently no way of knowing which athletes are free at what times nor which sports they do, causing problems to arise when they need to create training schedules for the athletes. Also due to lack of adequate training schedules, the athletes are unable to attend training sessions leading to poor participation, inadequate training for events resulting in poor performance which also hinders the committee from receiving sponsorships or improving their brand as a hall.

Information is disseminated through a WhatsApp group which the committee created for communication purposes, information about all events is communicated through this means leading to some athletes receiving constant messages about events that are not relevant to them which leads to them becoming annoyed resulting in them ignoring/muting group chat messages, or the message gets lost in the constant stream of new messages that pop up for other events. The current system used for storing athlete's information (which is vital for registering the athlete in the various events) is paper-based, and although this method still has its uses, it is not the most effective means of storage in the long run. The athletes come from various faculties of Uwi (there are 7 faculties total) which makes penciling out an optimum training schedule and meeting times for each athlete in the various events tiresome, this issue becomes prominent whenever there is a major upcoming sporting event and when a new athlete desires to participate. Should these issues remain unsolved, poor participation and middling athletic performance will continue to plague the hall, leading to increasing difficulty in acquiring external funding and sponsorships. Additionally, the use of the current paper-based system to store information has its drawbacks.

## 1.2 Product Functionality

The system shall allow the user to:

- Create user profile
- Edit user profile
- Display user information
- Delete a user
- Archive a user
- Input inventory information
- Edit inventory information
- Generate Training schedules
- Post information

## 1.3 Stakeholders and Users Characteristics

### **The Game Committee Chairpersons (GCCs)**

The primary stakeholder of the system will be the GCCs of the George Allyene Hall. They will have an administrative role, hence access to all the system's functions. They will be the stakeholder that will utilize the system most frequently.

### **The Athletes**

The only other stakeholder that will be directly interacting with the system. Athletes will be restricted to functions that concern their own profiles.

### **The Sponsors**

This stakeholder doesn't interact with the system, hence with regards to the system they are the least important stakeholder. However, they are also impacted by the system's success or failures, hence they are noted.

## 1.4 Operating Environment

The final system can be thought of as a combination of three sub-systems. These include a central database for storing related data, an online web interface for athletes to issue data and a system that is able to collect, process, store and output the necessary information.

The sub system that implements the submission of athletes' data will be represented in the form of a website. Here users will be allowed to login and input the pertinent details. This system will be hosted via an online web hosting service. [details about its implementation]

The database will be implemented through an online database service known as firebase. This is where athletes' data will be stored after submitting their information on the website. The database will implement a noSQL approach to storing data and will be communicating to both

the administrative system that does the processing as well as the web interface used by the athletes. This sub system will allow for effective communication of data between both entities.

The administrative subsystem will be responsible for viewing, storing, manipulating and processing the database records. It will be implemented as an offline PC program that communicates with the firebase database. This subsystem requires the windows operating system (the minimum being windows 8) for optimal performance. It will be built to accommodate the processing of JSON objects generated by firebase.

## 1.5 Design and Implementation Constraints

- 1. The internet connection of a device is a constraint to this application. The application is web-based; hence, its database obtains information that is entered over the Internet. Internet connection is crucial for the application's functionality.*
- 2. The application will also be constrained by the storage capacity of the administrators' system database. The size of the information being stored in the database therefore cannot exceed its capacity.*
- 3. This application must be designed and implemented in the English language.*

## 1.6 Assumptions and Dependencies

- 1. It is assumed that the system's database will store information for no more than 40 athletes.*
- 2. It is assumed that the users of this system will have access to internet connection.*

## **2.1 External Interface Requirements**

### **2.1.1 Hardware Interfaces**

*The user subsystem is coded responsively, as a result the display adjusts to the size of the screen that the browser is opened on (mobile devices or desktops). The administrative subsystem resides on the user's pc (this version of the system only supports Windows OS ) which utilizes the online database firebase to manipulate the system functions using standard keyboard inputs and shortcuts , along with GUI interface from the different supported devices.*

### **2.1.2 Software Interfaces**

*Operating system: The windows operating system will be used to accommodate the administrative program that will reside on a PC. This decision was made as a result of the popularity, support, cost and flexibility of the windows environment. This makes it cheaper, less time consuming and more user-friendly to stakeholders and developers.*

*Database: The system will make use of the services available through the firebase database to record data. This will help to create a more cost-effective solution than to develop a custom database through technologies such as PHP and SQL. Firebase uses a noSQL approach to data storage which results in less time and money spent on developing complex relational databases while still providing the necessary functionality to users.*

### **2.1.3 Communications Interfaces**

The system shall use the HTTP protocol for communication over the internet. The TCP/IP protocol shall be Used for network server communication. The system can be configured to be accessed via any available port.

The web-based user interface is the means of communication between each athlete and the system. The system shall be accessible through all web browsers that interact with HTML pages.

## 2.2 Functional Requirements

**Requirement #: 1 - Create User Profile**

**Use Case:** *Create user profile*

**Rationale:** *The information for each athlete must be obtained to create effective training schedules for each sport. The data stored from this use case is used by other functions of the system.*

**Description (User Requirement):** *The system shall allow the user to create a profile.*

**Details (System Requirements):**

- 1.1 The system shall accept the user's full name, age, faculty, programme, timetable, email address, telephone number and password.*
- 1.2 The user shall be allowed to edit each field before submitting.*
- 1.3 Only the GCCs shall create multiple profiles.*
- 1.4 The system shall check the database for a duplicate user profile based on the student ID entered.*
- 1.5 Upon finding a duplicate user profile, the system shall display an error message.*
- 1.6 The system shall create the user profile if no duplicates are found in the system*

**Acceptance Criteria:**

- 100% of the data entered for each profile must be saved and reflected in the system's database.*
- If a matching user profile is found, the system must discard the data entered.*

**Relates to/Dependencies:**

- Requirements 2,3,4,5,8,9*

**Priority:**

- High*

**Team Owner:** *Tassan Stewart*

**Requirement #: 2 – Edit User Profile**

**Use Case:** *Edit user profile*

**Rationale:** *Athletes may have outdated information in the system, such as old telephone numbers and email addresses, which needs to be replaced with current information. The user must be enabled to fix erroneous information and mistakes that may have occurred during the creating process.*

**Description (User Requirement):** *The system shall allow the user to edit his/her profile.*

**Details (System Requirements):**

- 2.1 The system shall accept the user's name and password.
- 2.2. Upon receiving an invalid username or password, the system shall print an error message.
- 2.3. Upon receiving a valid username and password, the system shall allow the user to edit each field of the profile.
- 2.4. The system shall allow the user to save the changes made.
- 2.5. The athletes are only allowed to edit their own profiles.

**Acceptance Criteria:**

- 100% of the modifications made to the profile must be saved and shown in the system's database.

**Relates to/Dependencies:**

- Requirement 1

**Priority:**

- Medium

**Team Owner:** Tassan Stewart

**Requirement #: 3 – Display****Users****Use Case:**

- Display Users

**Rationale:**

- The Games Committee Chairperson's need a way of viewing all registered users and their relevant profile information. This information is used for all sporting events.

**Description (User Requirement):** The system shall tabulate information received from the submission of each profile created.

**Details (System Requirements):**

- 3.1 Information shall be stored in a record each time a user submits a profile, the information should then be tabulated and displayed to the administrator.
- 3.2 The data shall be forwarded to have the schedules generated

**Acceptance Criteria:**

- Users shall be displayed in a table which can be sorted by Sport being done.

**Relates to/Dependencies:**

- Create User profile, Generate Schedule



**Priority:**

- *High*

**Team Owner:** *Shakeane Hind*

**Requirement #:4 - Delete User**

**Use Case:** *Delete User*

**Rationale:** *This requirement is necessary to remove an athlete permanently at the discretion of the Games Committee Chairperson*

**Description (User Requirement):** *The system shall allow both Games Committee Chairpersons to delete an athlete.*

**Details (System Requirements):**

*4.1 The system shall validate the Game Committee Chairpersons' names and passwords.*

*4.2 The user shall be allowed to delete an athlete's profile if they graduate, no longer attend UWI or does not attend practice frequently.*

*4.3 The system shall automatically remove an athlete's profile from the system whenever the user deletes an athlete's information.*

**Acceptance Criteria:**

*100% of the modification should be save and reflect on the system's database.*

*Only the GCCs should perform this function.*

**Relates to/Dependencies:** *create user profile, display users*

**Priority:** *Medium*

**Team Owner:** *Tonian Hyman*

**Requirement #: 5 - Archive User**

**Use Case:** *Archive User*

**Rationale:**

*If an athlete wishes to take a break from competing, this requirement is necessary to temporarily remove an athlete from the list.*

**Description (User Requirement):** *The system shall allow any of the GCCs to archive an athlete.*

**Details (System Requirements):**

*5.1 The system shall validate the GCCs' names and passwords.*

*5.2 The GCC shall be allowed to place an athlete's profile on a list, labelled archive, if the athlete wishes to take a break from competing.*

*5.3 The system shall remove the athlete's profile from the main list whenever the athlete's profile has been archived.*

5.4 The GCC shall be allowed to retrieve the athlete's profile from the archives list.

**Acceptance Criteria:**

100% of the modification should be save and reflect on the system's database.

Only the GCCs should perform this function.

Profiles should be restored to the main database.

**Relates to/Dependencies:** create user profile, display users

**Priority:** Medium

**Team Owner:** Tonian Hyman

**Requirement #: 5 -Input**

**inventory Use Case:** Input

**inventory Rationale:**

It is necessary for the hall to keep track of sporting equipment that goes in and out of use. As a result, the system shall grant users the ability to input and store data relating to the hall's inventory of sporting equipment **Description (User Requirement):**

The system shall allow the user to enter data pertaining to the sporting equipment stored by the Games Committee Chairpersons of the hall.

**Details (System Requirements):**

5.1. The system shall accept an I.D., name, quantity and description for the different types (objects) of equipment in storage.

5.2. When an equipment type is created, different instances of that object shall also be created by the system to represent the individual items (instances) that are of this type. The number of instances created is based on the quantity value supplied while creating its parent object.

5.3. Each item that is created shall have an associated I.D. that will be generated automatically by the system.

5.4. The user shall be allowed to supply a value to the condition field of each item which represents the physical condition of that item.

5.5. Prior to saving the data, the user shall be prompted by a validation message and given the ability to re-enter data in any field which may have been incorrectly recorded.

**Acceptance Criteria:**

Users can save partial data 100% of the time given that the name and quantity field for an object has been supplied.

**Relates to/Dependencies:** Edit inventory information

**Priority:** High

**Team Owner:** Rasheed Wright

**Requirement #: 6- Edit inventory**

Use **Case:** *Edit inventory*

Rationale:

*Games Committee Chairpersons need to possess a record of inventory data that is frequently updated.*

*Equipment in storage need to be monitored.*

**Description (User Requirement):**

*The system shall allow authorized persons, such as the GCCs, to adjust inventory data, after training sessions have been completed.*

**Details (System Requirements):**

6.1 *After the attempting user has been successfully validated, the system gives access to the inventory data that was previously saved.*

6.2 *The system shall allow the user the means to adjust and show the current state or condition of each piece of sporting equipment.*

6.3 *The system shall allow the user the means to adjust and show whether a piece of equipment is currently in use.*

6.4 *The system shall allow the user the means to adjust and show who signed the equipment out of storage.*

6.5 *The system shall log all changes made to the inventory data.*

**Acceptance Criteria:**

*All Changes made on the previously saved inventory data must be saved and reflected on the system.*

**Relates to/Dependencies:** *Input inventory information*

**Priority:** *High*

**Team Owner:** *Jhermon Sudderam*

**Requirement #:7. Generate Schedules**

**Use Case:**

*Generate Schedules, Post Information, Users*

**Rationale:**

*This shall solve the main problem faced by the GCC, which is to generate effective training schedules based on the time frames given by the athletes and their respective sport(s)*

**Description (User Requirement):**

*This section of the system shall not accept input from users, users shall not be needed to interact with this section.* **Details (System Requirements):**

7.1. *the system shall retrieve data from the user profiles including; their free time and sport(s) they will be doing.*

7.2. the system shall generate a training schedule for each athlete which should be sent to them via the communication channel.

**Acceptance Criteria:**

- If a student selects more sports than he has ample time for, the administrator shall be able to see clashes and adjust.

**Relates to/Dependencies:** *Create Users*

**Priority:** *High*

**Team Owner:** *Shakeane Hinds*

**Requirement # 8:**

**Use Case:** *Post information*

**Rationale:**

*The posting of announcement and responses shall be the primary way information is communicated.*

**Description (User Requirement):**

*The system shall allow the user to post announcements /responses*

**Details (System Requirements):**

- 8.1. the system shall accept user input in the form of text.
- 8.2. the system shall display the date and time of each announcement/response
- 8.3. Only the GCCs shall be allowed to post announcements.
- 8.4. the system shall alert the user if an identical post is present.

**Acceptance Criteria:**

- Displays the user's input exactly as it was typed.
- Checks for duplicate post.

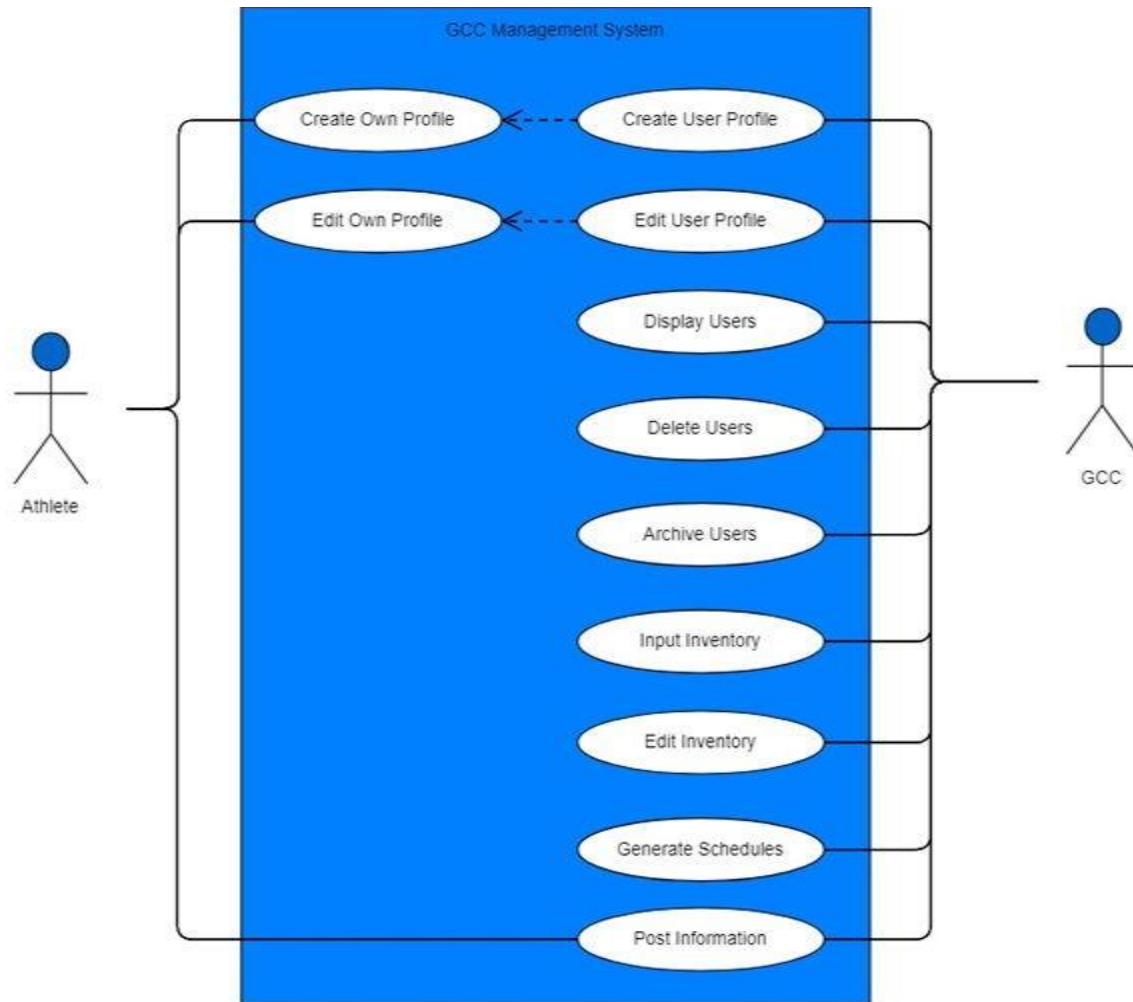
**Relates to/Dependencies:** *Display Users*

**Priority:** *High*

**Team Owner:** *Javarnie Johnson*

## 1.1 Behavior Requirements

### 1.1.1 Use Case View



## 2 Other Non-functional Requirements

### 2.1 Performance Requirements

- 1) The system shall not take more than 20 second to set up a time schedule for an athletes after the relevant data has been entered - Whenever a new athlete data has been entered into the database, the system should generate a time schedule for that athlete promptly.
- 2) The system shall remove or delete an athlete data from the database in at most 5 seconds - When any members of the GCC delete an athlete's data, all the data shall be removed from the database instantly.
- 3) Clicking from one page to the next on the application shall take up to most 2 seconds - Whenever a user clicks on an icon or menu, the system shall generate the information displays on that icon in less than 2 seconds.
- 4) All relevant data entered on the database shall be stored in most 2 seconds - data entered by the user shall be stored immediately.

### 2.2 Safety and Security Requirements

*The stakeholders require that the system provides data security, user account security and communication security. The system should provide a high level of security for student data, as well as a means recovering database information if extensive damage of the database occurs. The major security requirements are as follows:*

1. *Athlete accounts and inventory information shall only be accessible by the Games Committee Chairpersons (GCCs).*
2. *A user shall not be permitted to login for an hour after three times of failed login attempts.*
3. *All intrusion will be detected within 5 seconds*
4. *The system shall recognize a user's information before allowing them to use the application.*
5. *A copy of the system's database shall be stored on a backup storage device.*
6. *The system shall automatically log out all customers after a period of inactivity.*

## 2.3 Software Quality Attributes

1. *The system shall provide maintainability. The code shall be written to accommodate the implementation of new functions. Although the performance of this system is valued, fine-grain components will be created to facilitate replacement which will maximize its maintainability instead.*
2. *Test plans shall be written in advance to the system's creation and test environments shall be built to enable system testability.*
3. *The system shall be designed to provide usability.*

## Appendix

Interviews were the main tool used during the requirements elicitation. The interviews were open ended.

The first interview was conducted on 17/09/2018. The GCCs Damani Modeste and Alicia White were interviewed.

They were given a brief explanation about the nature of the project and were asked to describe the responsibilities of their roles as the hall's Game committee chairpersons. They were then asked about any challenges that they may have faced while performing their duties, the responses generated the information present in part 1.1- 1.3 of this document.

On the 25/09/2018 two athletes that participated in multiple sporting disciplines were interviewed, Lisa and Joshua. Lisa and Joshua both cited ineffective communication of information regarding the various sporting events as one of the major issues observed. Joshua also made a note of training being inconsistent and unstructured. The responses from the athletes coincided with the issues the GCCs had already provided.

On the 05/10/2018 Alicia White requested a feature regarding inventory to be implemented by the system. Two additional functions were created to satisfy the client's request

On the 23/10/2018 only one of the GCCs was available for a meeting.



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# *Software Design Specification*

*for*

## *<GCC Management S>*

*Version <1.0>*

*Prepared by*

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*COMP2140 – Introduction to Software*

*Engineering*

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*Date: <11/11/18>*

# **TABLE of CONTENTS**

Project Overview .....	1
Architectural Design .....	2
System Architecture Diagram .....	3
Alternative Considered .....	4
Architectural Justification .....	5
Class Diagram .....	6
Design Notes .....	7

# **1.0 Project Overview**

Damani and Alicia are the GCCs (Game committee chairpersons) for the newest hall of residence at UWI Mona, the George Alleyne Hall. The GCCs are responsible for organizing all the sporting events of the hall. This includes recruiting athletes, setting up training schedules, managing athlete data, and managing the approximately 40 persons that represent the hall in the different sporting events. The current system is entirely manual, except for utilizing the hall's general WhatsApp group. Currently the GCCs have to go from door to door to recruit interested members for the various sporting activities, this is both a tedious and time-consuming approach.

Additionally, there is currently no way of knowing which athletes are free at what times nor which sports they do, causing problems to arise when they need to create training schedules for the athletes. Also due to lack of adequate training schedules, the athletes are unable to attend training sessions leading to poor participation, inadequate training for events resulting in poor performance which also hinders the committee from receiving sponsorships or improving their brand as a hall.

Information is disseminated through a WhatsApp group which the committee created for communication purposes, information about all events is communicated through this means leading to some athletes receiving constant messages about events that are not relevant to them which leads to them becoming annoyed resulting in them ignoring/muting group chat messages, or the message gets lost in the constant stream of new messages that pop up for other events. The current system used for storing athletes information (which is vital for registering the athlete in the various events) is paper-based, and although this method still has its uses, it is not the most effective means of storage in the long run. The athletes come from various faculties of UWI (there are 7 faculties total) which makes penciling out an optimum training schedule and meeting times for each athlete in the various events tiresome, this issue becomes prominent whenever there is a major upcoming sporting event and when a new athlete desires to participate. Should these issues remain unsolved, poor participation and middling athletic performance will continue to plague the hall, leading to increasing difficulty in acquiring external funding and sponsorships. Additionally, the use of the current paper-based system to store information has its drawbacks.

## **2.0 Architectural Design**

The system architecture used to implement our system is Model View Controller. MVC separates presentation and interaction from system data. The MVC is structured into three components, the Model, View and Controller which all interact with each other. The MVC architecture was the most appropriate model due it being the popular architecture for web apps. Our system would consist of a backend that stores data and a web app as the frontend.

The Controller components contains function of the system. The GCC management system has two user administrator and athlete, each user can carry out different system functions. Administrator can create admin, edit admin, display user, delete athlete and archive athlete. Athlete on the other hand can only create athlete and edit that user specific profile. The Controller updates the model according to the user request.

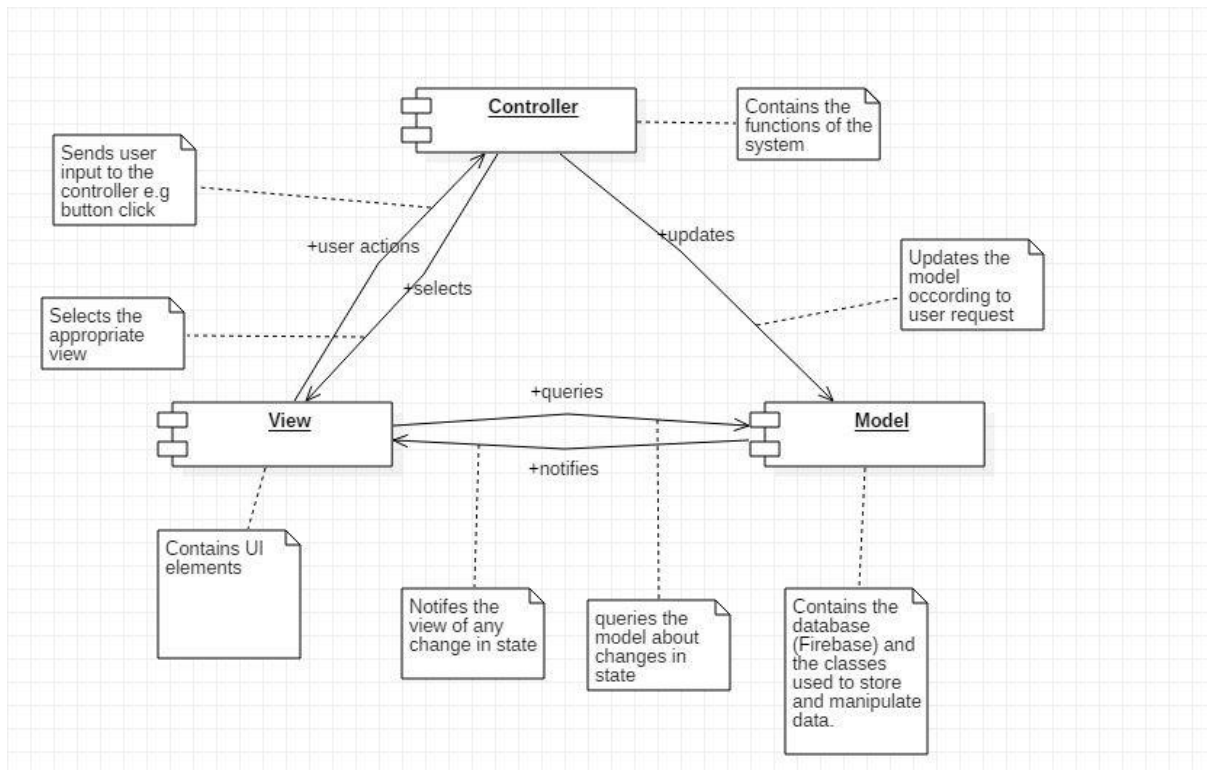
The model component contains the database and classes used to store and manipulate data. The model is basically the backend of the system, information received from either the administrator or the athlete will be used stored using firebase, a cloud-hosted database. Firebase is essential because data stored will be accessible, even if the web application section of the system goes offline. The model should notify the View of any changes in state. Changes include Admin performing functions such as edit admin, delete athlete or archive athlete. On the other hand, if the athlete should edit his or her profile the model should notify the View.

The View component contains the user interface elements. The view sends input gathered from the user to the controller, it also displays content based on the user that is selected. The interaction between the View and the controller makes use of the display user requirement.

The View also notifies the model of any changes made to a user. This interaction of these components makes use of the edit admin, delete athlete, archive athlete and edit athlete.

## ***2.1 General Constraints***

## 2.2 System Architecture Diagram



## 2.3 Alternatives Considered

Alternative architectural pattern that were considered include: the layered pattern and the repository pattern.

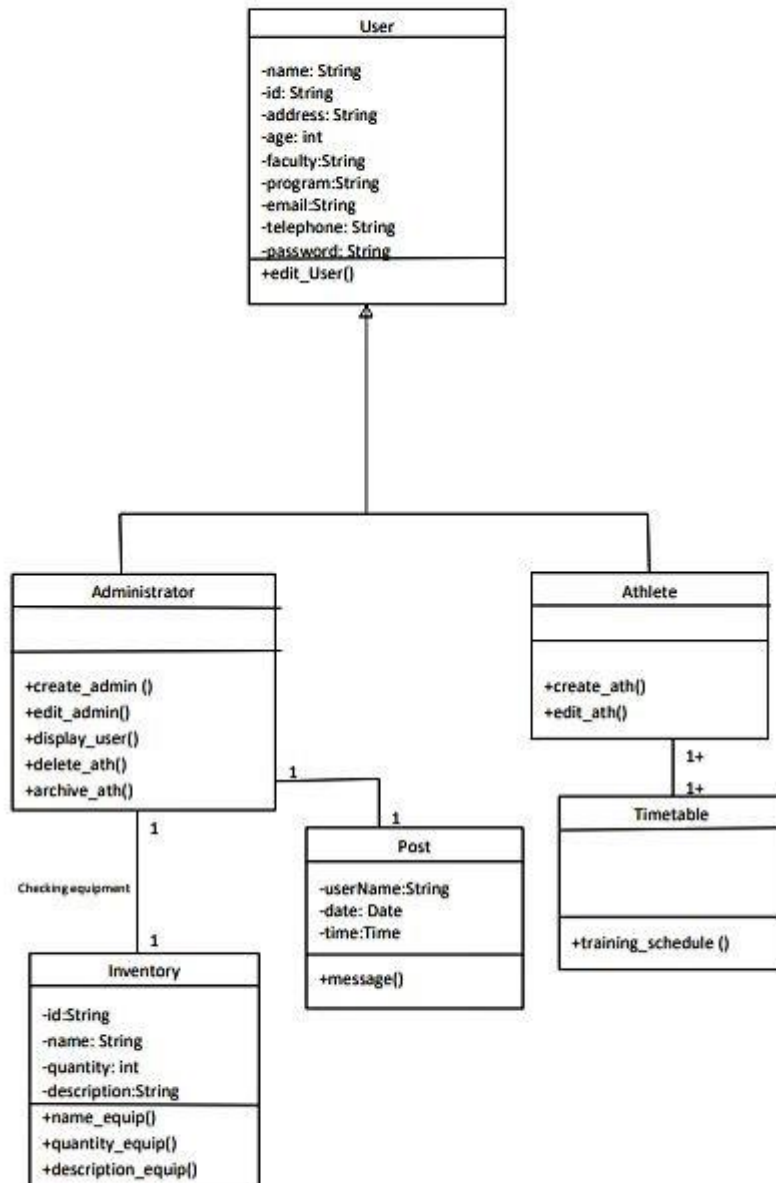
The layered architectural pattern was considered because it enables the system to be organized into layers which provide separate services. It also allows the replacement of layers/modules without disrupting the functionality of the system. Despite these benefits, the layered pattern was not chosen because it was not the best pattern that would satisfy the customer's requirements. This pattern prevents communication between high-level and low-level system components/layers. This function, however, is necessary for the components in our web-based system which primarily consists of a web-based interface. The highest-level component of this system (the web interface) needs to directly communicate with the lowest level (the system database).

The repository architecture was also considered because it enables data to be managed in a central system component which is accessible by all other components of the system. This would be advantageous for this system because it will store large amounts of information which will be needed by all the it's components. However, this pattern was not deemed fit for this system because the repository may be a single-point of failure. In other words, problems in the system's repository may reduce the system's dependability. Also, this pattern requires components to be independent of each other and the components of this must communicate for effective functionalities.

## 2.4 Architecture Justification

The Model-View-Control (MVC) pattern was used chosen because it is the best pattern for developing web-based applications. It provides loosely coupled components, ease of testing, dependability and an added emphasis on presentation. Also, this pattern is compatible with the customer's requirements and the development team's strengths, i.e web development. The customer requires a system that is heavily dependent on user interfaces which accept data that will update the system's database and classes. Therefore, the system components in this pattern can communicate directly with each other, as is required of the system.

### 3.0 Class Diagram / Structure Chart





### 3.1 Design Notes

Class	Description
User	<p>This class allows each user to create a profile by inputting attributes such as the user's full name, age, faculty, programme studying, timetable, email address, telephone number and password.</p> <p>This is the superclass of the subclasses Administrator and athlete.</p>
Administrator	<p>This sub-class of the User superclass allows administrators, i.e. the GCCs, to create their own profile, edit user data, display users and delete or archive athlete profiles where necessary.</p>
Athlete	<p>This sub-class of the User superclass allows an athlete to create or edit his/her own profile.</p>
Inventory	<p>Allows the administrators to keep track of sporting equipment. Each object created represents a type of equipment in storage and has an I.D., name, quantity and description as its attributes. The administrator can then perform edit methods on each object.</p>
Timetable	<p>Allows the user to save his/her scheduling information which is then used to create an effective training schedule for each sport.</p>
Post	<p>Allows the user to create a message which will be displayed on the web-based forum as an announcement or response. This message contains the user name, date and time. It enables communication between athletes and coaches.</p>

# TEST PLAN

The screenshot displays the phpMyAdmin web interface. The browser's address bar shows the URL: `localhost/phpmyadmin/sql.php?server=1&db=gcc_users&table=members&pos=0`. The interface includes a sidebar with a database tree on the left, listing databases like `gcc_users`, `information_schema`, `mysql`, `performance_schema`, `phpmyadmin`, and `test`. The main panel shows the 'members' table in the 'gcc\_users' database. A message at the top indicates 'Showing rows 0 - 5 (6 total, Query took 0.0010 seconds.)'. Below this, a SQL query `SELECT * FROM `members`` is displayed. The table data is shown with columns: `fname`, `lname`, `ID`, `Sport`, `password`, and `email`. The table contains six rows of member data. At the bottom, there are options for 'Query results operations' (Print, Copy to clipboard, Export, Display chart, Create view) and a 'Bookmark this SQL query' section with a label input field and a checkbox for 'Let every user access this bookmark'.

	fname	lname	ID	Sport	password	email
<input type="checkbox"/>	Shakeane	Hinds	620112282	FootBall	test	test@gmail.com
<input type="checkbox"/>	Alex	Marshall	620114455	FootBall	test12	alex@gmail.com
<input type="checkbox"/>	Maria	Jones	620114458	Netball	test	mjones@gmail.com
<input type="checkbox"/>	Mathew	Jones	620110855	Cricket	test	matt@gmail.com
<input type="checkbox"/>	Jason	Taylor	620122362	Football	test	jtaylor@gmail.com
<input type="checkbox"/>	john	james	630114425	Cricket	test	james@gmail.com