**MAKERERE UNIVERSITY**

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RECESS TERM 2 (BSE 2301)

SRS FOR:

ANALYSIS ON FIFA 18 DATASET

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SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE

SOFTWARE ENGINEERING RECESS PROJECT BSE 2301

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**Software Requirements**

**Specification**

**for**

**Data Analysis on FIFA 18**

**Version 1.0 approved**

**Prepared by Group 10 members**

**Makerere University**

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# Introduction

## Purpose

This is a Software Requirement Specification (herein SRS) document for a data analysis on FIFA 18 datasets [1]. This is going to be the initial release. This SRS describes the whole project.

FIFA 18 is an electronic game made by EA SPORTS [2].

## Document Conventions

The documentations used in this project have the Times New Roman font style with the body having font size 11 and 14 for headings. The reference format used is the IEEE format.

## Intended Audience and Reading Suggestions

The document is to help us the analyst who are the project members. The document shall also be read by the project supervisor, Mr. Mbabazi Isaac and the panel to which the final presentation shall be made. The SRS has six sections, the first one being Introduction followed by Overall Description, External Interface Requirements, System Features, Other Non-functional Requirements and other requirements. The last pages have Appendix. The reader can jump straight to the area of interest with the help of the table of content.

## Product Scope

The end product of this project is an in-depth analysis of FIFA 18 dataset.

# Overall Description

## Product Perspective

The end product of this project is a new self-contained in-depth analysis of the FIFA 18 dataset. It will be numerical figures as well as graphical descriptions.

## Product Functions

Provide in depth statistical analysis of the FIFA 18 dataset.

Provide visual analysis aid.

Help users to get insights based on the dataset.

## User Classes and Characteristics

Group 10 members. This is the group that is implementing this project

Supervisors of the project.

Other users may be fellow students and other people who may be interested in the project outcome.

## Operating Environment

The analysis shall be conducted using R Studio, a software for data analysis. It shall be on Windows 10 though it can work on any Operating System. It doesn’t have any unique hardware requirements as long as the computer has enough memory and storage space for the analysis products.

## Design and Implementation Constraints

Limited time due to parallel documentation and implementation.

Dataset missing some important information.

## User Documentation.

Apart from the SRS, other documents that will be delivered with the end product include;

Concept Paper, Project Proposal and Software Design Documentation.

# External Interface Requirements

## 3.1. User Interfaces

The users interact with R-studio where they can run R scripts, view the results and the visual presentation of their analysis. The user can run the script by the help of the keyboard or click with the mouse wherever necessary.

## 3.2. Hardware Interfaces

The minimum hardware requirement is a computer with a compatible graphics card which is required due to need of graphical visualization of the analysis.

## 3.3. Software Interfaces

Windows, Linux and Mac operating systems can be used depending on the users’ choice. It also requires R-studio to be installed on the computer.

**3.4.** Communications Interfaces

This project supports all windows of the R studio.

# System Features

## 4.1. Display Analysis results

### 4.1.1 Description and Priority

This is the outcome of the analysis and will be displayed after running the R scripts in the R-studio. It has a high priority because it helps the user to identify insights in case of any.

### 4.1.2 Stimulus/Response Sequences

Run the scripts either by the help of a keyboard or a mouse.

### 4.1.3 Functional Requirements

Display analysis results in terms of figures and graphs.

## 4.2. Prediction from analysis results.

### 4.2.1 Description and Priority

This is done after the analysis results has been output in terms of figures and graphics and the insights also retrieved. It has a low priority because it depends/relies on the analysis results.

### 4.2.2 Stimulus/Response Sequences

Run the scripts that uses the analysis results by the help of a button or keyboard.

### 4.2.3 Functional requirements

Show predictions for the future.

# Other Nonfunctional Requirements

## 5.1. Performance Requirements

Since the application will be displaying graphs for the analysis, the response time for a particular analysis should not be greater than 3-4 seconds for a respectable internet connection speed.

The data for the analysis will be obtained from the fifa-18 complete.csv file, so the response time for a query from the client side to the file should not be more than 5seconds.

Error handling should be implemented and the application should be able to handle all run time errors.

The application should be flexible for future enhancements, for example, the addition of a few more research analysis questions.

## Safety Requirements

If there is extensive damage to a wide portion of the fifa18 complete.csv file due to catastrophic failure, such as a disk crash, the recovery method restores a past copy of the fifa18 complete.csv that was backed up to flash disk storage and reconstructs a more current state by reapplying or redoing the operations of committed transactions from the backed up log, up to the time of failure.

## Security Requirements

A user log in is required when viewing analysis reports and later after analysis the user is urged to logout using the logout button.

## Software Quality Attributes

5.4.1 Availabilit**y:** The system is always available for use since it is a standalone.

5.4.2 Correctness: The analysis conducted are accurate.

5.4.3 Maintainability**:** The testing phase which will include testing the complete application after implementation. Unit testing and functional testing will be a part of the testing phase. Thus the product will be thoroughly tested periodically and updated for each functional requirement and documented for its reliability.

5.4.4 Usability: As the system is easy to handle and navigates in the most expected way with no delays. In that case the system program reacts accordingly and transverses quickly between its states.

## Business Rules

The analysis results are open for every one interested to view.

# Other Requirements

### Analysis Requirement

Purpose: The research question is selected to perform analysis like regression.  
Inputs: Input will be the research question selected by the user and consequently the data that the user wants to use for the analysis.

Processing:  Depending on the research question, the appropriate statistical analysis is performed with the help of the R studio which provide the middle layer in this three tier application. It can be regression analysis and correlation.

Outputs: The output will be a graph or table of the analysis results displayed on the R script window.

### Reliability Requirements

As the system provide the right tools for analysis, discussion, and problem solving it must be made sure that the system is reliable in its operations and for retrieving the insights and for securing the sensitive details.

# References

1. <https://www.kaggle.com/thec03u5/fifa-18-demo-player-dataset>

2. [https://sofifa.com](https://sofifa.com/)