

**COLLEGE OF COMPUTING AND INFORMATION SCIENCES**

**DEPARTMENT OF NETWORKS**

**BACHELOR OF SCIENCE IN SOFTWARE ENGINEERING (YEAR 2) RECESS TERM 2 (BSE 2301)**

**REPORT FOR:**

**MOBILE APP STATISTICS PROJECT**

**PROJECT MEMBERS (GROUP 14)**

|  |  |  |  |
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**PROJECT LEADER**

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MBABAZI ISAAC

SUBMITTED IN TOTAL FULFILLMENT OF THE REQUIREMENTS FOR THE SOFTWARE ENGINEERING RECESS PROJECT BSE 2301

22TH JULY, 2018

PROJECT REPORT

For

MOBILE APP

STATISTICS

PROJECT

Version 1.0

Prepared by NICHOLAS HENRY SSEBIRUMBI, WAMOZO COSMAS, BUSUULWA MARTIN AND MUGARURA ALLAN

GROUP 14

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# **Introduction**

R Project is the project undertaken as a mandatory requirement for the course “**Professional Software Engineering Mini Practical Project II**” that is being conducted mutually by College of Computing and Information Sciences at Makerere University. The aim of the course is to provide a hands-on experience in building software products using R programming language.

In this course we have to develop an R Mobile App Statistics system. We are working as a team of 4 using GIT as our version control of the code such that we provide this project in time.

## Purpose

The document contains the overall project description. It includes where, when and what we did and the work experiences gained throughout the development of this system. The whole description of the designing phase and cost is included in the document.

## Intended Audience

The intended audiences for this report include;

Mostly for the development team of **MASS** which include Programmers, Architects, System testers, System Analysts etc.

Developers, such as students, who want more people to download their applications can use the mobile app statistic program to analyze their app details to find out how they affect their ratings on the App store using the system features

Also the department of Networks of the College of Computing and Information Sciences (**COCIS**) at Makerere University, Marketing staff as well as anyone who intends to further develop on this project and developers, such as students.

## Scope

Mobile App Statistic system being developed is a new self-contained software product. It is a data analysis system that uses datasets from the apple store in form of a csv file containing apps with their app details and app groups and generates statistics and insights on how those details affect user ratings.

It also analyses this data to produce various visualization of that data in form of box plots, bar plots, scatter diagrams, line graphs, histograms. It also performs a sentimental analysis on the app descriptions to produce motions out of it.

The system is an open source software product with a friendly graphical user interface

## Definitions and acronyms

### Keyword Definition

|  |  |
| --- | --- |
| **Key words** | **Definition** |
| Histogram | Is an accurate representation of the distribution of numerical data . |
| Scatter diagrams | It is a type of plot or mathematical diagram using Cartesian coordinates to display values for typically two variables for a set of data. |
| Bar graph | Is a chart or graph that presents categorical data with rectangular bars with heights or lengths proportional to the values that they represent. |
| Box plot | It is a method for graphically depicting groups of numerical data through their quartiles. |
| Sentimental Analysis | It is the process of computationally identifying and categorizing opinions expressed in a piece of text, especially in order to determine whether the writer’s attitude towards a particular topic. |
| Data Analysis | it is the process of inspecting, transforming, cleansing and modelling data with a goal of discovering useful information, informing conclusion and supporting decision |
| Data visualisation | it involves the study and creation of the visual representation of data e.g. points, lines or bars contained in graphics. |
| Git | It is a version control system for tracking changes in computer files and coordinating work on those files among multiple people. |
| R studio | it allows a user to run R in a more user-friendly environment. |

|  |  |
| --- | --- |
| **Acronym** | **Definition** |
| MASS | Mobile App Statistics System |
| Csv | Comma separated values |

### Acronyms and Abbreviations

# **Background and Objectives**

This project is about collecting insights on how the details of an application (name, cost, currency, size and description) can affect its user ratings on the app store. We have compared the statistics of different app groups to come up with a clear conclusion and analytical solutions of how an app developer can get more people to download their Aps and hence get more user ratings.

With the analytics collected in this project, app developers can be able to understand the strategy to deploy in order to drive growth and retain future users.

Mainly, we focussed on key details of an application on the store such as its cost, description, size of the app and the group to which the application belongs (shopping, game, news, etc.) and observed how these details correlate with the user ratings.

We also observed the shift in the ratings between the previous versions and the current version in order to make a more detailed report.

# **Organization**

## Project Manager

NICHOLAS HENRY SSEBIRUMBI is the manager of Group 14

## Project Group

|  |  |
| --- | --- |
| **Name** | **Responsibility** |
| WAMOZO COSMAS | Documentation, Analysis, Implementation, Designing |
| BUSUULWA MARTIN | Documentation, Analysis, Implementation, Designing |
| NICHOLAS HENRY SSEBIRUMBI | Project Manager, Documentation and Review, Implementation, Designing, Analysis |
| MUGARURA ALLAN | Documentation, Implementation, Designing, Testing |

## Supervisor

MBABAZI ISAAC

## Steering Group

Mr.Mbabazi Isaac

Mr.Kange Noah

# **Milestones**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **ID** | **Milestone Description** | **Responsible dept./Initials** | **Finished Week** | | **Metr** | **Remarks** |
| **Start Date** | **End Date** |
| M-001 | Concept paper | All team member | **18th June** | **21st June** | y | Excellent |
| M-002 | Software requirements Specification (SRS) | All team member | **22nd June** | **28th June** | y | Good |
| M-003 | Software Design Document | All team member | **22nd June** | **28th June** | y | Good |
| M-004 | Implementation | All team member | **29th June** |  | y | Good |
| M-005 | Project report | All team member | **20th July** | **22nd June** | y | Good |
| M-006 | Final presentation and Delivery | All team member |  |  | y | Good |

# **Project Results**

## Requirements

### Requirements Compliance Matrix

|  |  |  |
| --- | --- | --- |
| **Id** | **Requirement Description** | **Completed** |
| MASS-1 | Upload file | Yes |
| MASS-1.1 | System user should be able to upload a csv file containing data to analyse. | Yes |
| MASS-2 | Display information | Yes |
| MASS-2.1 | The system will display the system description | Yes |
| MASS-2.2 | The system will display summaries from the analysis on the dataset. | Yes |
| MASS-2.3 | The system will display the help options and controls to the users regardless whether the dataset is uploaded or not. | Yes |
| MASS-2.4 | The system will not display anything if the dataset is not uploaded. | Yes |
| MASS-3 | Sentiment Analysis | Yes |
| MASS-3.1 | The system should be able to calculate eight types of emotions for example Anger, Joy, Disgust, Anticipation, Sadness, Surprise, Fear and Trust present within the uploaded data file. | Yes |
| MASS-3.2 | The system should be able to deduce the polarity of a given review i.e. if a review is Negative or Positive. | Yes |
| MASS-4 | The system should be able to be display results in Visual form. | Yes |
| MASS-4.1 | The system will show how the price of an app affect the user rating. | Yes |
| MASS-4.2 | It will also show which app group has the best, average, and least user ratings. | Yes |
| MASS-4.3 | The system will also show how the size of an app affect its user rating | Yes |
| MASS-4.4 | It will show how app screen shots shown when users are downloading app affects user rating | Yes |
| MASS-4.5 | The system will show how languages supported by the App affect user ratings | Yes |

### Requirements Compliance Summary

|  |  |
| --- | --- |
| Total number of Requirements | 16 |
| Number of Requirements implemented | 16 |
| Requirements partially fulfilled | 0 |
| Requirements not fulfilled | 0 |
| Requirements dropped | 0 |

# **Project Experiences**

## Positive Experiences

The main experience we learn from this Recess Term is to work in group. We also learnt how to use Version control software such as GitHub and other new software such R studio as the Integrated Development Environment.

## Improvement Possibilities

We have experience that if we organize our resources according to the requirements then we can make the project more successful.

# **Financials**

## Project Cost summary

|  |  |
| --- | --- |
| **Item** | **Cost** |
| Printing | 30,000 UGX |
| Internet | 30,000 UGX |

# **Metrics**

## Milestone metrics

|  |  |  |
| --- | --- | --- |
| Completed as planned or earlier | Total | Timeliness |
| 16 | 16 | Achieved |

# **References**

[2] Wikipedia

https://en.m.wikipedia.org>wiki