MAKERERE****UNIVERSITY

COLLEGE OF COMPUTING AND INFORMATION SCIENCES

DEPARTMENT OF NETWORKS

BACHELOR OF SCIENCE IN SOFTWARE ENGINEERING (YEAR 2)

RECESS TERM 2 (BSE 2301)

PROJECT REPORT

GROUP 11

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**ADVISOR**: NOAH KANGE

20TH JULY, 2018

PROJECT REPORT

For

IOS MOBILE APPLICATION ANALYSIS SYSTEM

Version 1.0

Prepared by KEKIRUNGA JEAN, MUGISA BEST AND KISIGA TIMOTHY

GROUP 11

July 20, 2018

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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 holistic hands-on experience in building software products using R programming language in a team environment. In this course we have to develop an R Mobile Application Analysis System. As a team, we divide the project into different modules with each team member specializing in a certain part, for us to be able to finish on time.

## **Purpose**

The document contains the overall project description. It includes where, when and what we did and the respective experiences gained throughout the Recess Term. A whole description of the designing phase and cost is included in the document.

## **Intended Audience**

This document is mainly intended for the development team of the IOS Mobile Application Analysis System which include Programmers, Architects, System testers, System Analysts etc.

Other groups of people that might need to read the document include;

* Apple administration
* IOS mobile application developers
* Makerere Teaching staff

## **Scope**

The project is aimed to provide a platform for analyzing and visualizing numerical data. The software provides a detailed analytical report on the application statistics by visualizing the data with the help of Bar plots, Histograms and scatter plots, and a sentimental analysis of the application descriptions, all provided from a csv file. The team incorporated a user friendly interface for Data scientists.

## **Definitions and acronyms**

### Keyword Definition

|  |  |
| --- | --- |
| **Key words** | **Definition** |
| Histogram | A plot showing the frequency distribution for continuous variables |
| Bar plot | A graph used to show comparative data |
| Sentiment Analysis | An analytical technique for determining the emotions in a statement. |
| Data scientist | A person who studies information and visualises it. |

## **References**

* “Web project” Final project document

# **Background and Objectives**

This is a mandatory school project in which we were given a dataset in form of a csv file containing over 7000 Applications with their details and descriptions extracted from the [iTunes Search API](http://www.transtats.bhttps//developer.apple.com/library/content/documentation/AudioVideo/Conceptual/iTuneSearchAPI/SearchExamples.html#//apple_ref/doc/uid/TP40017632-CH6-SW1ts.gov/DatabaseInfo.asp?DB_ID=120&Link=0) at the Apple Inc website and we were required to determine how App details contribute the user ratings and to try to compare app statistics for different groups.

We were also required to determine the positive and negative content in the application descriptions.

At the end of the day, we developed a software which analyses the data and provides a Computational Analysis for the data set.

# **Organization**

## **Project Manager**

Kisiga Timothy is the project manager of group11.

## **Project Group**

|  |  |
| --- | --- |
| **Name** | **Responsibility** |
| KISIGA TIMOTHY | Project Manager, Documentation, Design |
| MUGISA BEST | Interface design, Back end system development and Implementation |
| KEKIRUNGA JEAN | Documentation, Sentiment analysis design and implementation. |

## **Supervisor**

NOAH KANGE was our supervisor.

# **Milestones**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ID** | **Milestone Description** | **Finished Week** | | **Remarks** |
| **Start Date** | **End Date** |
| M-001 | Project Description, Plan and Documentation | 11-06-2018 | 20-06-2018 | Good |
| M-002 | Requirement, Specification Definitions and Documentation | 21-06-2018 | 27-06-2018 | Good |
| M-003 | Project Design and Documentation | 28-06-2018 | 04-07-2018 | Good |
| M-004 | Implementation | 05-07-2018 | 25-07-2018 | Excellent |
| M-005 | Final presentation and Delivery | 26-07-2018 | 26-07-2018 | Excellent |

# **Project Results**

## Requirements

### Requirements Compliance Matrix

|  |  |  |
| --- | --- | --- |
| **Id** | **Requirement Description** | **Completed** |
| IMAS-1 | Upload file | Yes |
| IMAS -1.1 | System user should be able to upload a csv file containing data to analyse. | Yes |
| IMAS -2 | Data Analysis | Yes |
| IMAS -2.1 | The system should be able to compare user ratings for different app categories. | Yes |
| IMAS -2.2 | The system should be able to plot a histogram to show the user ratings for each app category e.g. games, music | Yes |
| IMAS-2.3 | The system should be able to show the relationship between different application features. | Yes |
| IMAS-2.4 | The system should output the most trending apps. | Yes |
| IMAS-2.5 | The system should be able to compute the frequency distribution of user ratings of the different categories | Yes |
| IMAS -3 | The system should be able to compare app statistics for different app categories | Yes |
| IMAS -3.1 | Sentiment Analysis | Yes |
| IMAS -3.2 | 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 |
| IMAS -4 | The system should be able to deduce the polarity of a given descriptions i.e. if a review is Negative or Positive. | Yes |
|  | The system should be able to respond to the user’s requests in Visual form. | Yes |

### Requirements Compliance Summary

|  |  |
| --- | --- |
| Total number of Requirements | 11 |
| Number of Requirements implemented | 11 |
| 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 team work. We also appreciated the use of Version control software in our case GitHub and other new software such Rstudio as the Integrated Development Environment.

## **Improvement Possibilities**

We realised that if we organized our resources according to the requirements then we could make the project less strenuous.

# **Financials**

## **Project Cost summary**

|  |  |
| --- | --- |
| **Item** | **Cost** |
| Printing | Ush. 50,000 |
| Internet for video tutorials and installing R packages. | Ush. 100.000 |