University of Southampton
Electronics and Computer Science (ECS)
Faculty of Physical Sciences and Engineering

MSc in Computer Science

MobaKing

"There's only one King"

Project Brief

COMP6235 Foundations of Data Science

Group 6
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1 PROJECT DETAILS

Module title	COMP6235 Foundations of Data Science
Group components	Sawan J. Kapai Harpalani (sjkh1g15), Yingdan Xu (yx2g15), Xu Han (xh1g15), Shanchuan Wu (sw9n14), Xu Zhang (xz9a14) & Peng Gou (pg1a14)
Group coordinator	Sawan J. Kapai Harpalani
Professor	Dr Elena Simperl, Dr Markus Brede, Dr Chris Phethean & Dr. Ramine Tinati
Project title	MobaKing
Project description	This project consists of a web platform that will display an extensive analysis of how MOBA (Multiplayer online battle arena) games have evolved throughout the years. Recent statistics show that more than 1% of the world population play any of these games. More than 67 million people play every month so at this very minute more than 3 million people are probably playing. Therefore, this project will study the popularity of the top 10 MOBA games and see which one hast the maximum impact on the society. On the other hand, there will be also an analysis of the popularity by regions to see why in some countries one game is more popular than the others and vice versa. Finally one of the goals of this platform is also to make predictions for the future based on the data recollected from the past. This project targets mainly two groups in the society: The gaming society, which can benefit by looking which games are more popular in their countries or in the world, on the other hand, the companies that develop these kind of games can use the information provided in order to improve their game or target certain countries where there game is not so popular. Regarding the resources for the platform, the datasets will be extracted mainly from Google Trends, Youtube and Twitter. Although using other sources of datasets are not discarded.
Methodology of work	Agile methodology
Goals	Learn how to develop a web application in an efficient way using professional tools. Gain knowledge and experience in the different tasks involved in order to create a web application. Apply in a correct and efficient way all the technologies learned during the module.

2 TECHNOLOGIES DETAILS

Data Science	• R language. • Matlab.
Back-end of platform	• NodeJS • Express • MongoDB • MVC (Model View Controller)
Front-end of platform	• Jade • CSS3 • JavaScript • Bootstrap • JQuery
Presentation	• Microsoft PowerPoint • Sony Vegas (video recording)

3 PROJECT LIFE-CYCLE

Task	Description	Person in charged
1. Data acquisition	The data acquisition process is central to the data warehousing effort including such items as sourcing, consolidation, cleansing and transforming. This may involve acquiring data from external sources, including social media or web scraping.	Peng Gou & Xu Han
2. Data preparation	This step involves cleaning the data and reshaping it into a readily usable form for performing data science.	Yingdan Xu
3. Hypothesis and modelling	The idea is to apply machine learning techniques to all data. A key sub-step is performed here for model selection. This involves the separation of a training set for training the candidate machine-learning models, and validation sets and test sets for comparing model performances and selecting the best performing model, gauging model accuracy and preventing over-fitting.	Shanchuan Wu & Sawan
4. Evaluation and Interpretation	The purpose of this phase is to transform the data collected into credible evidence about the development of the intervention and its performance.	Xu Zhang & Peng Gou
5. Deployment	Creation of the web development.	Sawan
5.1 Creation of database	Setting up the MongoDB schema.	Sawan & Yindang Xu
5.2 Creation of Back-end	Code the back-end of the platform using NodeJS.	Sawan
5.3 Design the style and theme of the platform	Design and choose the right theme using Bootstrap and CSS3 for the platform.	Shanchuan Wu
5.4 Creation of the Front-end	Code the front-end using Jade.	Peng Gou
5.5 Dynamic graphs	Choose and code the dynamic graph used for the study that will be displayed on the platform.	Xu Han
5.6 Optimize	Study the performance of the platform and try to optimize it.	Sawan
5.7 Testing	Testing that everything is working perfectly before deploying it.	Shanchuan Wu & Yingdan Xu
5.8 Deployment	Choose a free hosting service to deploy the platform. First preference Openshift by RedHat.	Sawan
6. Prepare presentation material	Choose and prepare all the necessary material to present this platform	Everyone