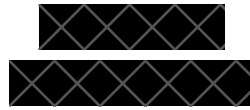# Business Case & Draft Plan

Team 01

████████
████████

Part 1

The definition of App analyzer

Our project is to develop an app that can help developers better understand their app on the app stores (Google play store, IOS store, windows store). The name of our project is app analyzer, we want to use it to retrieve the useful information in the different app reviews from app store, and then analyze these reviews of the app, hence trying to find out the potential useful feedback from users, helping developers better develop their app. The framework can be seen in fig 1, we collect data from app store, then store them in database and finally analyze them. The stream is simple and understandable for the process of our project.

Apart from that, when you search for an app, you can see all the reviews we have extract from the app store. We will also provide the statistic about the occurrence of those problem in percentage so user may know what are the major and minor they may found if they using this app. And we are also going to track how these bad or good reviews changing over time.

Why we use it

Because most reviews of apps in the app store are not helpful, and some reviews don't even make sense by themselves. It is necessary to find useful reviews and analyze them by using our product. For example, at certain point of some app development process, we may find the score/ratings of that app change, so we know what exactly is happening when users use the app, and then find the potential reason of the changes. The main reason of developing app analyzer is to help developers find 'bugs' or improve their app performance from different perspectives.

Our target customers are software developers, sometimes they may have no idea on how to improve or fix the bug of their app. When they search their app in the analyzer, they will know what sort of problem they need to fix.

Solutions

Google play scraper is used to fetch data from Google play store. It can fetch the review data from the store and then these data can be stored in a database. Also, a category search will be developed for different apps search, such that more apps can be analyzed according to their reviews. Our solution is reasonable and it can be done within this semester. Using Nodejs and its Google play scraper package is stable comparing to using other third party APIs. It is free to download and the rest of work is to develop the logic of our app. So it is feasible in terms of the completion of app analyzer. Other solutions such as using selenium will be investigated in parallel to provide support when needed.

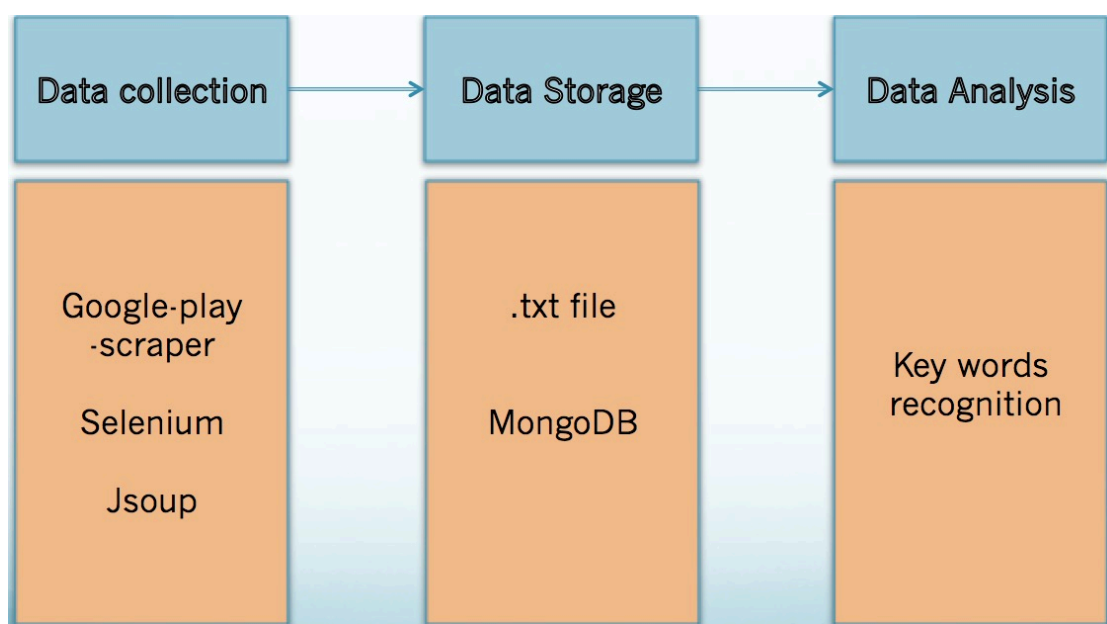| Data collection	Data Storage	Data Analysis
Google-play -scraper Selenium Jsoup	.txt file MongoDB	Key words recognition

fig 1. The framework of App analyzer

Project goal

The goal is to help developers better understand the feedback from their app users through analyzing the useful reviews. Hence, developers can quickly make change to their app if needed or they can easily find problems to make modifications.

This project can be extended to fetch different review data on different app stores, including Google play store, IOS store and Windows store. Now the app target for the Google play store, in the future the app can be developed further to fetch more data on other stores. Also, deeper analysis on reviews will be developed (e.g. sentence meaning). The graph (with x being time and y being factor) can be acquired by analyzing a range of dates and can be used to determined the turning point of review changes.

Part 2

Milestone

The first milestone of our project will be the completion of app analyzer with the function that can search for multiple apps and analyze them by retrieving and analyzing reviews accordingly. For example, when using app analyzer and we can type a certain category and then search for the top 10 apps from that category and then get the top 10 apps' names and then we can retrieve reviews from each of these top 10 apps and analyze them. At this stage, we use the key word recognition to analyze the reviews.

Plan

Each team member will perform different activities according to this plan, we define the activities we need to do as below.

████████:

1. Using Nodejs to develop the category search bar
2. Study and do research on better deep analysis mechanism
3. Upgrade the interface
4. Investigate in other stores such as IOS store and windows store

████████

1. Keep on using selenium to see if it can use to extract source code from Window app store (keep on testing with Google play store as well)
2. If source code can be extract, investigate how to extract review from the html code, if not, go for another tool.
3. If reviews can be extract, try to store the reviews.

Each team member will perform the activity according to the list above. For Kang, the priority is to make most functions of the app work and upgrade the interface, improving the app performance at the same time; For Wing, the priority is to check and explore if other tools can be used to fetch data from other online stores than Google play store.

The Gantt chart is shown in fig 2. Each team member will take it as reference to complete the first iteration.

26-Mar 28-Mar 30-Mar 1-Apr 3-Apr 5-Apr 7-Apr 9-Apr

develop category search bar
upgrade interface
study better deep analysis mechanism
investigate other stores
try to extract source code from window
try to extract source code from google
keep on study how to use selenium
study html code
extract reviews from source code
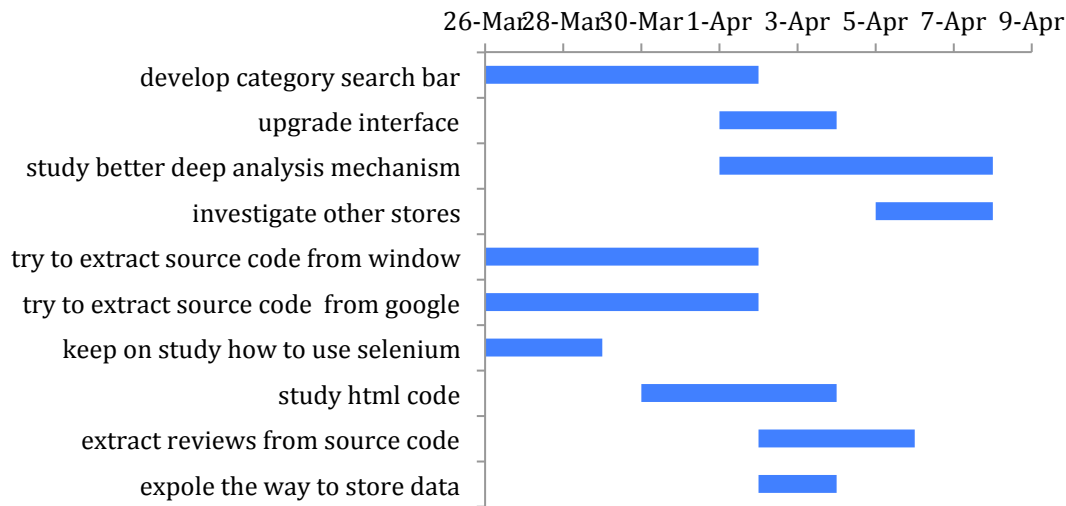expole the way to store data

fig 2. Gantt chart

Our activities are closely related to the first milestone. The goal of first milestone is to get many apps (e.g. 5 in this case), and then analyze them according to the previous steps. This can be shown in fig 2 of the 'develop category search bar'. Also, more useful information such as user names and scores will be displayed in the user interface, this can be shown in 'upgrade interface'; In parallel, the deep analysis method will be explored. On the other hand, research on other stores will be carried on, to pave the path for later app extension. Also study on other tools such as Selenium, htmlunit will be performed to assist the app development.

Communication plan

For the communication and meeting between team members and stakeholders, we define it as follows:

████ is going to continue developing the category search bar of the app and upgrade the interface as well.

████ is going to explore whether selenium can be used to extract reviews from window play store. If it is possible, should consider how to store the reviews, otherwise, possibly keep on exploring another tools to extract reviews.

For the internal meeting, we are going to meet twice a week to discuss the progress on our project and solve the issues together if we have any.

For the meeting with stakeholder (Markus), we are going to have a meeting once a week and apply the agile method to it, discussing the potential problem our app may face and find ways to solve them. Also, we will get feedback from Markus and improve our app.