Bilkent University

Senior Design Project

Project short-name: cerebro

Project Specification Report

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1. INTRODUCTION

Everyday thousands of new media are published in many different forms. Although there are some applications that help identify media by several ways, most of the mainstream apps fail to provide more than minimal information. Also most of them focus on a single type of media.

Mobile users would take advantage of a platform that searches the media and puts together desired information by gathering them from trusted third party sources. This would allow users to quickly find information from their favourite sources, all at once.

1.1. DESCRIPTION

Our solution to this problem is “Cerebro”. Cerebro is a mobile app that allow users to search media by their cover art. It uses the camera of the smartphone to capture the cover art of media such as book covers, album covers, movie posters, etc. It then searches the database for any matches.

If there is a match, the app displays the basic information accompanied by other desired information on a fully customizable details screen. The information that is available for display might be reviews, links to official sites, social media appearances such as tweets about that media, youtube and itunes links for music, imdb pages for movies etc.

The details screen is fully customizable through a user friendly gui which is accessed through the settings page. The details screen for each kind of media -books, music, movies, etc.- can be customized separately.

The information displayed will be automatically gathered from third party sources by using scripts and APIs. The database will only include the most basic information required for matching. Therefore it will be easy to build up a large database.

Cerebro will be composed of two parts. A mobile application which is the frontend of Cerebro and a server side backend which will be responsible for matching and providing necessary information. The frontend will communicate the backend through an API.

The app will provide a way to share the details of a media by sharing a link to it. The link will be automatically opened on the app if the app is installed on the device. This will also provide a way to advertise the app.

The app will be free to use and will not require a login. The main source of income will be non invasive advertising.

1.2. CONSTRAINTS

1.2.1. SOCIAL CONSTRAINTS

- Cerebro will provide a way to share the link of a media which will open the details of the media on cerebro app

1.2.2. IMPLEMENTATION CONSTRAINTS

- Cerebro will be version controlled with git
- Two public Github repositories will be used (one for frontend one for backend)
- A github.io web page will be used as the official webpage of the Cerebro
- Frontend of Cerebro will be developed using java on android studio
- Backend of Cerebro is planned to be developed using Ruby On Rails framework because we think rails is a good way to quickly build web APIs.[1]
- Backend of Cerebro is planned to be deployed using heroku

1.2.3. SUSTAINABILITY CONSTRAINTS

- The backend of the app is compute-intensive. Therefore a transfer to a private mainframe machine might be required if the app becomes popular
- The database of the app should be updated frequently to keep up

1.2.4. ECONOMIC CONSTRAINTS

- The app will be free to use
- Main source of income will be non-invasive advertisement

1.2.5. SECURITY CONSTRAINTS

- The app will not store or access any sensitive information therefore there are no concerns about security

1.2.6. LANGUAGE CONSTRAINTS

- Cerebro will initially be released in English.

1.3. PROFESSIONAL AND ETHICAL ISSUES

Cerebro will only provide links to legal sites and will only provide non-copyrighted information. All information gathered (example: reviews) will be attributed to a source. This way Cerebro will not give rise to any ethical or professional concerns.

2. REQUIREMENTS

2.1. FUNCTIONAL REQUIREMENTS

- Searching will be initiated by one button tap which will open the default camera
- If more than one matches occur users will be provided a list of matches
- User can tap on one of the matches list elements to go to the details
- On details page users will be provided with basic info accompanied by links to the product's web page
- The user can choose to see any other information (such as reviews) on the details screen for each type of media
- the contents of the details screen can be set through settings screen with the help of an interactive GUI a default setting will be provided
- media searching is done on the server side
- the search only returns a unique name for the media
- any other information is requested from the server by using the name of the media
- only the basic information is stored on the database any other info is obtained through running scripts on source sites

2.2. NON- FUNCTIONAL REQUIREMENTS

- Application will not require an account to login
- Instead it will be device oriented
- The application will be quick to launch
- searches will be done by 1 tap (much like shazam[2])
- The app will require internet access
- The settings of the details page will be user friendly and easy to customize
- Application will initially be released for android
- The app will be quick to match searches

- The database will initially be large enough to match common searches
- The backend should be scalable to serve a larger number of users if needed
- Both the backend and the frontend should be extensible so that new functionalities can be added in the future

3. REFERENCES

1. 'Shazam' Available Online: http://www.shazam.com/ accessed 9.10.2016
2. 'Building REST API with Rails' Available Online: http://apionrails.icalialabs.com/book/chapter_one/ accessed 9.10.2016