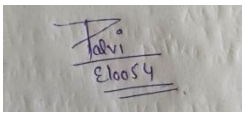
Android Music Player

Submitted in partial fulfillment of the requirements for the award of degree of
BACHELOR OF ENGINEERING
IN
COMPUTER SCIENCE & ENGINEERING

Submitted to: Palvi Sharma
Project Teacher

Submitted By:
Student Group

NAME : Rishabh Kumar Singh
UID: 19BCS1184
NAME : Aman Raj
UID: 19BCS1182



Mentor Signature
Palvi Sharma
E10054
(Name & E-code)

DEPARTMENT OF COMPUTER SCIENCE & ENGG.

Chandigarh University, Gharuan
Feb 2021

INTRODUCTION

Android apps are very common in current era of technology. Variety of apps is made to fulfill the needs of a user, be it entertainment or some official work.

This project is about an android music player which aims to build an application that can play and manage local music and audio files along with personalized playlists, favorites and song shuffling. This project also aims to provide background controls with minimum foreground UI and file sharing over network.

This project will be developed on Android Studio and will use multiple dependencies for different processes. Examples for such dependencies are MediaStore library, Dexter library etc. Beside Android Studio, project make uses of Github and Git for project synchronization, cloud repository and live sharing of project. Project feature of Github also allows planning, schedule and tracking the progress of project and links the associated repositories at one place. Project repositories and other resources can be accessed by only team members with appropriate permissions. Git on the other hand allow live syncing of project from local machine to Github repositories.

Adobe XD is another software which is used in the project for UI designing and prototyping with limited animations between different UI screens.

The android app uses API higher than API 18: Android 4.3 (Jelly Bean) which means this app can be installed and used in devices with higher android versions which makes 98.4% of devices in the world (source Android Studio). This app uses permission to read and write in external storage to access local audio files.

Some commonly used abbreviations –

1. API – Application Programming interface
2. APK – Application Package
3. SDK – Software Development Kit
4. DAO – Data access object
5. SRS – Software requirement specification

Chandigarh-University-students › Projects › Android Music Player

Filter cards | + Add cards | Exit fullscreen | Menu

9 To do

Requirement Gathering
- [ ] Source Searching
- [ ] Existing templates gathering
- [ ] Discussion

Added by amanr11314

Requirement Analysis
- [ ] SRS designing
- [ ] Other UML Diagrams
- [ ] Formatting
- [ ] Final Review

Added by amanr11314

Project Design and Modelling
- [ ] UI Designing
- [ ] Library Collection
- [ ] Coding Snippets Implementation
- [ ] Proxy Deployment
- [ ] Final Review

Added by amanr11314

Project Implementation
- [ ] UI Designs Ready
- [ ] Connecting Views with methods

1 In progress

Synopsis Creation
- [ ] Cover Page
- [x] Introduction
- [x] Feasibility Study
- [x] Methodology
- [x] Work distribution / Phases
- [x] Innovation
- [x] Software and Hardware Requirements
- [x] Bibliography
- [x] Logo & Screenshots Inserting
- [ ] Final Formatting
- [ ] Submission

Added by rishabhkumar812

1 Done

Project Proposal
- [x] Material
- [x] Idea Generation
- [x] Document Writing
- [x] Formatting
- [x] Uploading

Added by amanr11314

+ Add column

FEASIBILITY STUDY

1. Technical Feasibility

Project makes uses of current technology all in terms of software.

Developer End -
Android Studio – version 4.1.0 and higher
Adobe XD – version 2020
Github – Repositories, teams and project features
Language – Kotlin, XML

User End –
Android OS – version 4.3 and higher
Use permissions – READ_EXTERNAL_STORAGE,WRITE_EXTERNAL_STORAGE

The project is completely feasible in terms of technical feasibility as development kits are updated and maintained by Google itself and multiple dependency libraries are provided open sourced to provide required functionality.

2. Economical Feasibility

Project is a software type and henceforth does not require any specific economical feasibility criteria.

3. Operational Feasibility

An android app is operated on any Android device. Android apps are regularly updated to provide new features, fix bugs and update in par with current technology. Deprecated methods and libraries are substituted with latest ones.

Need and significance

Android music player is required to play and manage audio files. It is used to create playlists where user can keep all favorite songs and can also shuffle the order. All this is needed to be done in background using background details while user can simply do any other work.

METHODOLOGY

1. Requirement gathering

Necessary resources which are to be used in the project are gathered in first step. This includes various tools, development kits, external libraries and dependencies, extensions and plug-ins.

2. Requirement analysis

After all the requirements are gathered, it is time for analyzing them and consider the shortcomings and limitations. This will also allow doing a feasibility study. All the requirements will be listed in a document after this stage as SRS document.

3. Designing

This phase is about designing prototype of the actual project using tools for designing and prototyping. In this case, user interface designs have to be finalized and backend functionality is to be decided. All the libraries and dependency that are going to be used will be shown in the roadmap of final product.

4. Implementation

Once design is finalized, implementation can begin. In this phase, actual code will be written. It will be accompanied by unit testing phase for preview of the app. Documentation will be done here too.

5. System testing and debugging

In this phase, app will be tested as a whole by deploying on different platforms (can be emulator) and trying out different actions in app. It will check that app does not crash at any step and its instance is retained when the app goes in background.

6. Deployment

After all the phases, app will be deployed on open source platform like Github to be used by user.

7. Maintenance and feedback

This is an eternal phase where feedbacks will be taken from users to improve the app and necessary updates will be deployed to keep at par with current time.

WORK DISTRIBUTION

PHASES	UID 1 19BCS1184	UID 2 19bcs1182	Final Outcome	Remarks by Project Coordinator
Project Proposal	Document writing and formatting.	Material, idea generation.	Project proposal document uploaded on time.	
Synopsis	Cover page, Introduction, feasibility study, methodology and work distribution. Initial writing and formatting.	Content generation, innovation, bibliography, software and hardware requirements and final formatting, logos and screenshots.	Synopsis prepared.	
Requirement Gathering	Browsing internet, resource collection, resource identification, discussion.	Browsing internet, source searching, existing templates and discussion.	Various resources and requirements are gathered.	
Requirement analysis	Document preparation.	Final review, formatting and suggestions.	SRS document.	
Project Design and Modeling	UI designing, library collections and implementation code snippets.	UI designing, code snippets, proxy deployment.	Prototypes of the project.	
Project Implementation	Actual UI designs, connecting views with methods, backend implementation.	Actual UI designs, connecting views with methods, backend implementation.	Complete android app.	
Testing and	Personal testing,	Personal testing,	Corrected and optimized	

debugging	debugging, discussions, suggestions, distribution to beta users.	debugging, discussions, suggestions, distribution to beta users.	version.	
Deployment	Open source deployment on Github using a joint team.	Open source deployment on Github using a joint team.	Github repository for public use.	
Final Project Assessment				

INNOVATION IN PROJECT

As we know music plays important role in a person's day to day life. People listen to music to reduce stress, entertain themselves, focus on some work and many other reasons. Music plays an important role in any kind of mood.

So, what this app basically does is: It collects **meta-data** about user's playlist tracks and keeps track of **most frequently played songs** using proper data structures and stores it into user's local storage to suggest songs to user, which user will be most likely to play.

Other benefit of this meta-data is that it can be used as **future scope** to study and suggest songs to user based on AI trained model, moreover large dataset can also predict user's mood.

SOFTWARE &HARDWARE REQUIREMENTS

Software Requirements:

- Operating System – Windows 10
- IDE- Android Studio
- Designing & Prototyping – Adobe XD
- Source Control – Git & GitHub
- User End – Android OS

Hardware Requirements:

- Main Processor - Intel i3 and above
- Hard-disk (PC) - 8 GB
- RAM (Development PC) – 4 GB
- User End – Android Smartphone

BIBLIOGRAPHY

1. Android Developers Official Website https://developer.android.com/
2. MediaStore library docs https://developer.android.com/training/data-storage/shared/media
3. Room Database https://developer.android.com/jetpack/androidx/releases/room
4. StackOverflow https://stackoverflow.com/
5. Adobe XD tool https://www.adobe.com/in/products/xd.html
6. UI design Ideas and Inspirations https://dribbble.com/
7. GitHub Projects https://github.com/features/project-management/
8. Git for local system https://git-scm.com/