Mobile Application Design Document

Quit Smoking

Presented By: Team Byte Force

Subash Aryal

Ilham Sheikh

Kossisochukwu Abone

Rahul Gupta

Suraj Subedi

Jason Chan

Gautam Sai guntupalli

3rd June 2023

Supervised By: Professor Tom

Table of Contents

1. App Overview

1.1   Introduction

The development of mobile platforms is advancing at an accelerated pace, introducing a wide range of applications that can be conveniently operated on smartphones. This enables individuals to perform various tasks and engage with diverse mobile applications without leaving the comfort of their homes. Moreover, mobile technology has proven instrumental in addressing numerous health concerns and promoting a healthier lifestyle.

The primary objective of this project is to serve as a counselor and guide for individuals who aspire to quit smoking. Rather than employing the abrupt "cold-turkey" method, where smoking is immediately ceased after years of continuous use, this project adopts a scientifically proven approach that emphasizes gradual control. Through the implementation of a system-notification system, the mobile app assumes the role of a compassionate yet firm guardian, consistently motivating users to quit smoking and prioritize their health.

The app closely follows the different techniques and ideas from the best selling book "Allen Carr's Easy Way To Stop Smoking". It also incorporates a 30-day timetable system that provides practical and straightforward steps to help users distract themselves from smoking throughout the day. By gathering information from users regarding their smoking history, such as the number of years they have been smoking, the app utilizes pattern recognition algorithms to recommend a personalized timetable for smoking during the initial days. The recommended number of cigarettes to smoke per day gradually decreases, taking into account factors such as gender, age, and duration of smoking.

In summary, this project leverages the rapid advancement of mobile platforms to offer a supportive and personalized quitting strategy for smokers. By employing a gradual and data-driven approach, the app aims

to empower users to successfully overcome their smoking habit and prioritize their well-being.

1.2 Problem Domain:

Cigarette smoking stands as the primary cause of preventable death worldwide, with more than 480,000 deaths occurring annually in the United States alone, accounting for nearly one in five deaths [1]. A significant portion of adult smokers, approximately 68.0% (22.7 million), expressed a desire to quit smoking in 2015, while over half of them attempted to quit within the past year [1]. In 2018, approximately 7.5% of adult smokers (2.9 million) successfully achieved smoking cessation [3].

When attempting to quit smoking, 31.2% of adult smokers (7.6 million) sought assistance through counseling or medication in 2015 [3]. Supported by the aforementioned research and facts, it becomes evident that counseling effectively aids individuals in their quest to quit smoking. In fact, counseling nearly doubles a smoker's chances of successfully quitting and maintaining abstinence for at least one year. The approximate cost associated with each case of sustained smoking cessation due to counseling availability is $1300 [4]. This expense is considerably high, highlighting the focus of this project: to provide the most affordable option for those seeking to overcome smoking addiction.

The primary objective of this project is to address this issue by making the most economical solution accessible to individuals aiming to quit smoking.

Smokers who want to quit face numerous challenges, including addiction, cravings, a lack of motivation, and limited access to personalized support and resources. They often struggle to find effective strategies that work for them.

This app addresses these challenges by providing personalized support tailored to each user's needs. The app's tracking tools, motivational

support, community features, and educational resources combine to offer a comprehensive solution that enhances the chances of successful smoking cessation.

1.3 Target Audience

The target audience of "QUIT" includes adult smokers who have expressed a desire to quit smoking and are actively seeking assistance in their quitting journey.

1.4 Supported Platforms

We will be supporting the Android platform for the moment.

2. App Functionalities

The main features of the app are as follows:

- **Smoking Habit Tracker:** The app features an intuitive and easy-to-use smoking habit tracker that allows users to log their smoking habits accurately. Users can record the number of cigarettes smoked, triggers that lead to smoking, cravings experienced, and the times of day when they typically smoke. The tracker may also include additional data points like locations, mood, and associated activities.

- **Health Progress Tracking:** Users can track their health improvements through the app. It provides visual representations of their progress, such as charts or graphs, to show the positive impact of quitting smoking on their health. The app may calculate and display metrics like saved money, reduced carbon monoxide levels, improved lung capacity, decreased heart rate, and lowered risk of smoking-related diseases.

- **Motivational Support:** The app will provide personalized messages, reminders, and virtual rewards to motivate users throughout their quitting journey. These motivational elements are tailored to each user's progress, milestones, and personal preferences. Messages may include encouraging quotes, tips for managing cravings, or reminders of the health benefits of quitting.

- **Community and Social Features:** The app will foster a supportive community where users can connect with others who are on a similar quitting journey. It may include features like discussion forums, chat groups, or social feeds where users can share their experiences, provide support, and exchange tips and advice. The app may also organize challenges or group activities to encourage healthy competition, camaraderie, and shared goals.

- **Educational Resources:** "QUIT" will offer a rich library of educational resources to help users understand the harmful effects of smoking, learn coping strategies for cravings, and gain knowledge about the benefits of quitting. These resources may include articles, videos, interactive quizzes, expert advice, and success stories to inspire and inform users.

ADDITIONAL FUNCTIONALITIES

These are the future functionalities that may be developed at a later time.

- **Gamification:** The app may include gamified elements to make the quitting process engaging and rewarding. Users could earn badges or level up based on their progress, participate in virtual challenges, and unlock achievements for reaching milestones or adopting healthy habits. Gamification adds an element of fun and motivation to the quitting journey.
- **Personalized Recommendations:** Using data analytics and machine learning algorithms, the app can provide personalized recommendations for quitting strategies, coping mechanisms, and resources based on individual preferences and patterns. These recommendations take into account factors like smoking history, triggers, past successes, and user feedback.
- **Integration with Wearable Devices:** "QUIT" can integrate with compatible wearable devices, such as fitness trackers or smartwatches. This integration allows users to sync their app data with these devices, providing additional health-related insights like heart rate variability, physical activity, sleep patterns, and stress levels. This comprehensive health tracking enhances the user's

understanding of the positive changes occurring during their quit journey.

- **Professional Support:** The app may provide options for users to seek professional help through teleconsultations or messaging features. Users can connect with smoking cessation counselors, therapists, or access a helpline for immediate assistance. Integrating expert support within the app ensures that users have access to professional guidance during challenging times.
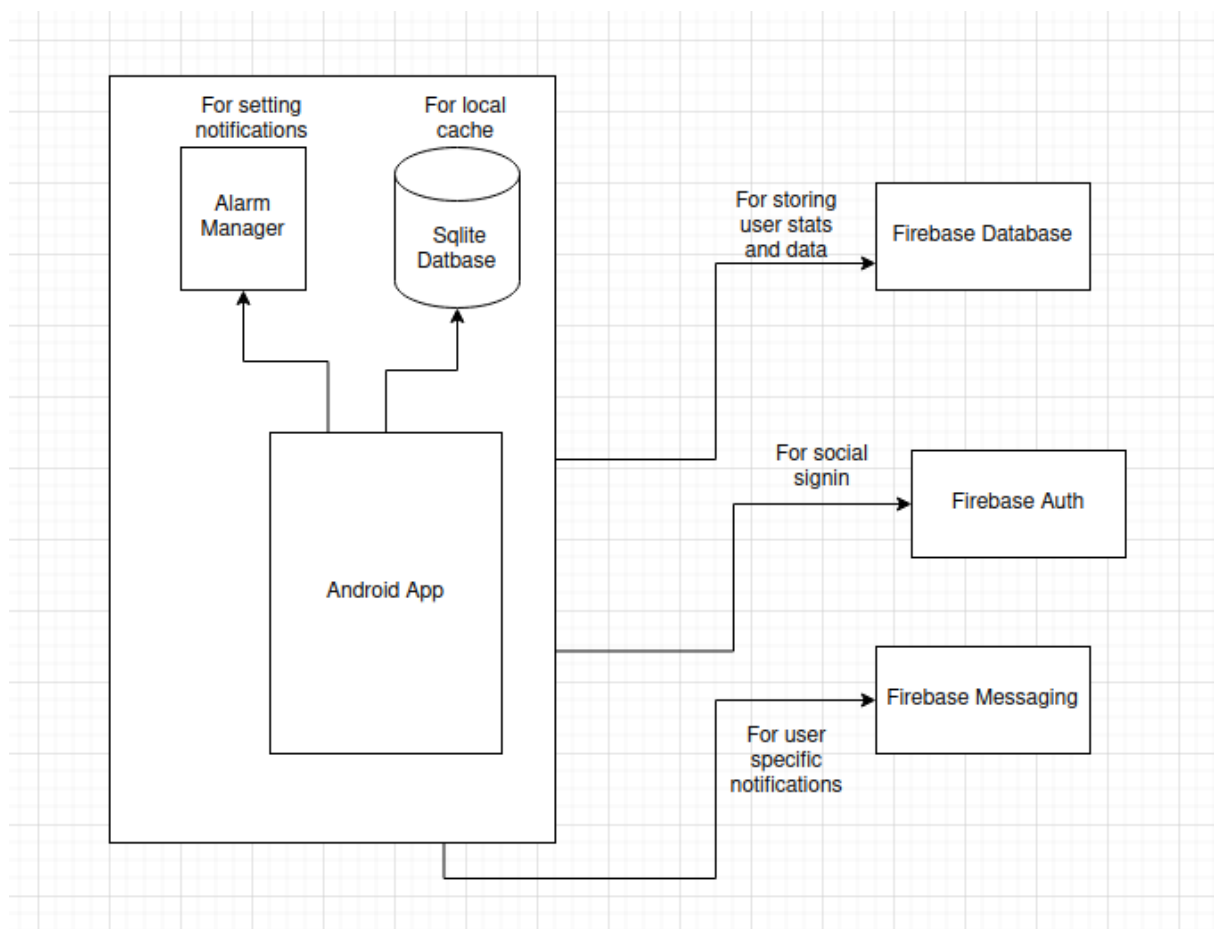
2.1 App Flow

Fig 2: Low Level overview on how app works

2.2 Frameworks

We are planning to utilize Firebase for notifications and for storing persistent user data. For the web version of the app, we will be using React-Native to develop the portfolio website.

3. Aesthetic and UI/UX

A balance between aesthetics and functionality is important for mobile app design. We are still experimenting with the placement of our critical functionality throughout the app. For the early prototype of the project, we will prioritize functionality over design, with the design iterations growing over time.

2.1 Primary Color Palettes

2.2 Fonts

We will be using the variant of free google fonts "Poppins'

Thin 100

Quit Smoking

Thin 100 Italic

Quit Smoking

ExtraLight 200

Quit Smoking

ExtraLight 200 Italic

Quit Smoking

Light 300

Quit Smoking

Light 300 Italic

Quit Smoking

Regular 400

Quit Smoking

3. Wireframes

3.1 App Wireframe

https://www.figma.com/file/lXym5R0YK25xvuVRWGK7Wm/Byte-For ce-Mobile-App-Portfolio-1-Wireframe-Draft?type=design&node-id=0%3A1 &t=q3i2DxpnM5TZRm8I-1

Screen 1 (Profile/Home menu)

Avatar
Name
Trying to quit smoking since YYYY-MM-DD
Profile

Home
Smoking Records
Statistics
Forum/Experience Sharing
Settings

Screen 2 (Menu navigation)

Avatar

Smoking Records
Statistics
Forum/Experience Sharing
Settings

Screen 3 (Edit Profile)

Cancel | Save

Avatar
Click on avatar to upload profile image
Clear Profile Image

Name
[User Name]

Display Name
[Defaults to user name]

Gender
[Defaults to user input at registration]

Date of Birth
[User birthday]

Smoker Profile

Smoker Age
[User smoker age]

Numbers of cigarettes per day

Estimated cost per pack

Screen 4 (Settings)

Avatar

Change Password

Toggle Light/Dark Mode

Screen 5 (Change Password)

Avatar

New Password

Confirm New Password

Save and Return to Home

Screen 6 (Smoking Records list)

Avatar

Smoking Time: YYYY-MM-DD HH:mm
No. of cigarettes smoked: 5
More

Add New Record

Screen 7 (Record detail)

Avatar

Date
YYYY-MM-DD

Time
HH:mm

Number of Cigarettes Smoked

Trigger(s)

Thoughts/Feelings

Notes

Back | Edit

Screen 8 (Edit record)

Avatar

Date
YYYY-MM-DD ▼

Time
HH:mm ▼

Number of Cigarettes Smoked

Trigger(s)

Thoughts/Feelings

Notes

Cancel | Save

Screen 9 (Statistics)

Avatar

No. of Cigarettes Per Month

March	100
April	70

Estimated Expenditure on Cigarettes Per Month

Screen 10 (Forum sections)
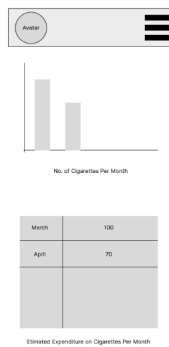
Avatar

Self Introduction
Latest Posts

Discussions
Latest Posts

Diary
Latest Posts

Screen 11 (Forum thread list)

Avatar

Forum Home > Self Introduction

Subject: Hi
Lorem Ipsem...

Back | New Thread

Screen 12 (Forum thread)

Avatar

Forum Home > Self Introduction > Hi

Hi
Lorem Ipsem
Reply
John Smith

Hi N

Back | New Post

Screen 13 (New message)

Avatar

Subject:
Message Box

Body
Message Box

Cancel | Post

4. Assets Index

.

Name	Type	Source
Home Screen Icons	icons	https://font awesome.co m/v4/icons/
N/A	sound	
Illustrations	SMG files	https://undr aw.co/illustr ations

5. Version History & Changelog

5.1 Version 1

- Initial Draft for the project

-

5.2 ChangeLog

- N/A

5.2 Version Control

All the code and resources used throughout this project will be shared on Github, and team members are notified to create a new branch for every new feature they will be working on. You can find the project at: https://github.com/subasharyalgeorgian/ByteForce

6. References

1. S. Department of Health and Human Services. Smoking Cessation. A Report of the Surgeon General. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2020 [accessed 2023 June 3].

2. Babb S, Malarcher A, Schauer G, Asman K, Jamal A. Quitting Smoking Among Adults—United States, 2000–2015. Morbidity and Mortality Weekly Report 2017 [accessed 2023 June 3].

3. Creamer MR, Wang TW, Babb S, et al. Tobacco Product Use and Cessation Indicators Among Adults — United States, 2018. MMWR Morb Mortal Wkly Rep [accessed 2023 June 3].

4. Cromwell J, Bartosch WJ, Fiore MC, et al. Cost-effectiveness of the clinical practice recommendations in the AHCPR guideline for smoking cessation. [accessed 2023 June 3].