IEEE NITK CHAPTER

PROJECT – Chat application for NITK

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## Abstract

This project aims to build an android chat application. The app will have features like DMs, group chat, message notifications. We will be using java for development and git for version control.

# Section 1 – project overview

# The Motivation

Social media is something everyone uses everyday. It is preferable for most people to use a mobile app for communicating with friends, etc than using a web app. Also, app development is an industry relevant and a very useful skill to have.

## The Opportunity

With this project, first years get to learn java, git and app development among other things. Learning these technologies will help in the long term. They will get to experience the workflow of a project which could be helpful in future projects they do. They also get to develop android apps from scratch.

## The Objectives

* Learn Programming in Java
* Learn Git for VCS
* Learn UI/UX development for android apps
* Learn and understand databases, authentication, etc for the app’s backend and auth

## Project Approach

Initially all are required to learn git, programming in java, android basics. Then based on their preference, they are allowed to choose what they want to do. Some can do UI and some work on the backend.

## Project Deliverables

The following are the full list of deliverables which will be achieved through the entire project timeline:

|  |  |
| --- | --- |
| Deliverable | Description |
| Learn VCS | Learn git to understand the Version control system which will be very useful for any future software projects. |
| Programming in Java | Learn to program in Java which will be the main language used for developing the app. |
| Understanding core features in android development | Understand and implement features such as XML, layouts, views, etc necessary for the app. |
| Learn UI/UX | Design different UI/UXs for the app interface using the necessary technologies. |
| Learn about APIs, backends, databases etc. | Learn APIs, databases, etc and combine it with the features of android development to implement a good backend for the app. |

Based on the time constraints, the features can be extended to things like video chat, chat search, notifications etc.

## Timeline for Execution

Key project dates are outlined below. Dates are best-guess estimates and are subject to change.

|  |  |  |  |
| --- | --- | --- | --- |
| Description | Start Date | End Date | Duration |
| Project Phase 1 | | | |
| Milestone 1: Learning Java  Understanding of basic Java required for android development |  |  | 2 weeks |
| Milestone 2: Learning git  Understanding VCS(git) and working with github. |  |  | 1 week |
| Project Phase 2 | | | |
| Milestone 3: Understanding basics of Android development  Understand XML, layouts, views etc. |  |  | 2 weeks |
| Milestone 4: Making simple android apps.  Build basic apps to understand how the process works and to get used to Android Studio. |  |  | 2 weeks |
| Project Phase 3 | | | |
| Milestone 5: Building UI for the application  Design a good looking, easy to use UI for the app |  |  | 1 month |
| Milestone 6: Doing auth and backend  Add login, register, authentication, push notifications features. |  |  | 1month |
| Milestone 7: Adding group chat feature  Add a group chat feature similar to the groups feature in WhatsApp. |  |  | 1 week |
| Project Phase 4 | | | |
| Milestone 8: Extended functionalities, if time permits.  Add additional features like video chat, channels, etc |  |  | Whatever time is remaining |
|  | | | |

## References

* [Github](https://guides.github.com/activities/hello-world/)
* [Java](https://www.codecademy.com/learn/learn-java)
* Udacity courses by Google/ Udemy/ Youtube
* [Developer Guides](https://developer.android.com/guide)

# SECTION 2 – LITERATURE REVIEW

## Introduction

Our project can be divided into 4 phases. The first three phases involve building the core of the application and having the minimal functionality ready. By minimal functionality, we mean registration, authentication, direct messaging, group chats and push notifications. If time permits, we would like to add better features like video chats, topic channels, etc. Here is a brief explanation of the phases we will be going through in the project:

**Phase 1:**

The first phase is a learning phase. It focuses on building programming knowledge in Java and then learning git and github for version control. This phase will be a stepping stone for the next phase. It should take around 3 weeks.

**Phase 2:**

The second phase is also a learning phase but it gets down to the important stuff needed for building the app. The focus will be on learning basic android development. The basics will involve XML, views, layouts and more. First years will build a few basic apps to get a good idea of how the process works. They will also get used to android studio. This phase will take around 3 to 4 weeks.

**Phase 3:**

This phase is the most important when it comes to the application. In this phase, all the learnings of the previous phases will come together to build the various functionalities needed for the app. This frontend involves designing a good UI/UX for the app. The backend involves adding a database facility and using APIs to integrate Google Sign In support, etc. This phase should take a little over a month.

**Phase 4:**

The duration of this phase depends on how well the timelines have been followed during the other phases. This phase will be used to implement other useful features like video chat, topic channels, etc. In case the other phases take more time, this phase will be a buffer time to ensure that the necessary functionality is present in the app.

**Programming languages, libraries and softwares**

* Android Studio IDE for development
* XML for UI/UX design
* Java
* OAuth
* SQL