



# TechTrek Developer Handbook

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## Introduction

This developer handbook was created to ensure a smooth and enjoyable experience during the upcoming TechTrek. It contains recommendations on the skills and technologies beneficial to you during the TechTrek.

\*Note: Other than **required** skills, the other recommendations serve as a guide and not indicators of the assessment criteria.

## Setup

The TechTrek will be attempted on your personal computer so please make sure that you are able to install selected technologies and troubleshoot ahead of the TechTrek.

Technologies you should setup on your computer:

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- Nodejs with Express and ReactJS
  - Python with Flask
  - Git
  - Postman
  - MySQL
  - GitHub Desktop (Optional, GUI)
  - HeidiSQL (Optional, GUI)
  - Anaconda (Optional)
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# Web Development

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## Frontend Development

Frontend development is the development of the graphical user interface where users view and interact with the website's content. Using only HTML, CSS, and JavaScript is possible but the use of a frontend library or framework is preferred. In this case, we recommend the **React** library for JavaScript.

\*Note: Frameworks like Angular and Vue.js can also be used but **React** is recommended because of its ease of use. Within React, **functional** components are **preferred** to class components.

### Required

- HTML, CSS, JavaScript
- Display webpage, Basic design
- API call
- Authentication

### Recommended

- React
  - [React Documentation](#)
  - [Tutorial](#)
- Angular
  - [Angular Documentation](#)
  - [Tutorial](#)
- Axios
  - [Axios Documentation](#)
  - [Axios HTTP Post Request Examples](#)
  - [Tutorial](#)



## Backend Development

Backend development handles everything the user does not see and contains the backbone of the application. It handles the logic behind the actions performed on a website, focusing mainly on databases, servers, etc.

\*Note: We recommend using either the **Express** or **Flask** frameworks as they are lightweight and easy to implement.

### Required

- Backend language
  - JavaScript (Node.js)
  - Python
- APIs
- CRUD operations
- Basic Authentication

### Recommended Backend

- Express
  - [Express Documentation](#)
  - [Tutorial](#)
- Flask
  - [Flask Documentation](#)
  - [Tutorial](#)

### Recommended Data Management

- SQL
    - MySQL
  - NoSQL
    - MongoDB
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## General

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### Tools

Here are some tools that you will find useful for the TechTrek.

### Version Control

Version control is the practice of tracking and managing changes to software code and is integral to any project, big or small. This is especially important with multiple collaborators where overlapping or conflicting changes should be resolved before the source code is changed.

\*Note: Groups will be required to create and maintain a GitHub repository for the TechTrek.

### Required

- Git
  - [Documentation](#)
  - [Tutorial](#)



## Image Hosting

### Recommended

- Multer
  - [Tutorial](#)
- Cloudinary
  - [Tutorial 1](#)
  - [Tutorial 2](#)

## Team Collaboration

Communication will be the key to success in this TechTrek as with all collaborative work. To ensure a pleasant experience for all participants please be respectful to one another and talk through any concerns with the team. Along with that, here are some tools to facilitate smoother collaboration.

### Recommended but not compulsory

- Wireframing
  - Sketch
  - Figma