

# Developing a Backend Admin for Learner's Academy

## Introduction:

In this course-end project, we will embark on designing and developing a backend administrative portal for Learner's Academy, an online school management system. As a Full Stack Developer, our task is to create an efficient and user-friendly platform that empowers administrators to manage subjects, teachers, classes, and students seamlessly. This project will follow agile methodologies, utilizing GitHub for version control and documenting the process comprehensively.

## Project Background:

Learner's Academy requires an administrative portal for a single administrator to manage various aspects of the school system. The administrator will be able to:

1. Set up a master list of subjects for all classes.
2. Create a master list of teachers.
3. Establish a master list of classes.
4. Assign subjects to classes.
5. Assign teachers to specific subjects and classes.
6. Maintain a master list of students, each assigned to a single class.
7. Generate class reports displaying students, subjects, and teachers.

The project's primary goal is to deliver a high-quality product efficiently. To achieve this, we will plan multiple sprints, document the application's flow with flowcharts, employ core concepts and algorithms for optimization and performance, and ensure that the application handles invalid inputs gracefully.

## Application Flow and Features:

**1. Sprint Planning:** The project will be divided into multiple sprints, with well-defined goals for each sprint.

**2. Flow Documentation:** The application's flow will be thoroughly documented using flowcharts, providing a visual representation of how different components interact.

**3. Core Concepts and Algorithms:** We will utilize core concepts such as exceptions, collections, and sorting techniques to optimize the source code and enhance performance.

## Tools and Technologies Used:

- **IDE (Integrated Development Environment):** Eclipse will be used for coding the application.
- **Programming Language:** Java will be employed for web page development, database management, and other functionalities.
- **Database Management:** SQL will be used to create and manage tables for administrators, classes, students, and other specifics.
- **Version Control:** Git will be used for connecting and pushing files to GitHub.
- **Version Tracking:** GitHub will serve as the repository for the application code and version tracking.
- **Agile Framework:** Scrum will be adopted as the agile framework to deliver the product incrementally.

## Requirements and Deliverables:

**GitHub Repository:** The source code will be pushed to a GitHub repository. A link to this repository is provided

<https://github.com/santhoshsai4517/LearnersAcademy>

# Sprints

## Sprint 1: Project Setup

**Duration:** 2 weeks

**Goals:**

1. Set up the development environment, including IDE (Eclipse) and database (SQL).
2. Create the user management system, allowing administrators to log in and log out.
3. Implement basic error handling for invalid login attempts.
4. Create a database schema to store user information.

## Sprint 2: Subject and Class Management

**Duration:** 3 weeks

**Goals:**

1. Develop the functionality for administrators to create and manage a master list of subjects for all classes.
2. Allow administrators to create and manage a master list of classes.
3. Implement the assignment of subjects to classes.
4. Develop a feature for viewing class reports, displaying subjects and their assignments to classes.

## **Sprint 3: Teacher and Student Management**

**Duration:** 4 weeks

### **Goals:**

1. Create a master list of teachers and enable administrators to add teacher profiles.
2. Implement the assignment of teachers to specific subjects and classes.
3. Develop a master list of students and allow administrators to add student profiles, assigning each student to a class.
4. Finalize error handling and user experience improvements based on feedback from previous sprints.
5. Prepare the final specification document with all required details, including documents and flowcharts.