

# EZ-Programming

## Overview:

This is an overview of our project for Software Engineering, by building a dynamically website for online courses learning and teaching. As Programming is growing into everything now more and more people from all around the world are interested in learning new programming languages such as Python 3.0 , Java & C++ . Moreover, Young Computer Science Engineers are looking for jobs to help pay for rent or student debts , That is where we (EZ–Programming) come in. With multiple offices in various countries and the ability to organize online meetings.



## **System Requirements:**

### **Functional:**

1. Admins are allowed to login as user/admin . Admin to be able to overview the website and user in case of testing .
2. Admin can check number of Users / Courses and Registered Courses.
3. Admin can delete course , delete registration, and remove user .
4. The system should allow the system administrator to login and logout from the system.
5. Every account has a single user.
6. Every course linked with a user.
7. Every registration is linked with 2 users (teacher & student) , a course and an office .
8. Admin can add new courses offered by website through admin Dashboard .
9. Admin Can Add New Programming Languages , Offices.

### **Non-functional:**

1. **Security:** Personal Information of users shouldn't be displayed to other users , course registration is only on ID basis to avoid , only admin can access personal information.
2. **Availability:** The system will be available 24/7 .
3. **Portability:** The system supports every operating system.
4. **Efficiency:** The system provides appropriate output based on the list of inputs.

5. **Reliability:** The performance of the system is consistent according to its specifications.
6. **Speed:** The system responds to the users requirements in minimal time .
7. **Usability:** The system shows easy use to users and is interactive.

## **User Requirements:**

1. User chooses whether he wants to offer a course or register in a course.
2. User records updates their profile with phone number , age ,etc.
3. User Chooses Course According to Start time , Location then Programming Language Desired .
4. User can register course according to teacher , description .
5. User has access to MyCourses where he can check his courses , pay and cancel registration.
6. The system should offer all courses available in your area.
7. The system should display the course price by default.
8. User can search according to minimum and maximum price and course name.
9. The system should record that user has paid in database .
10. User Can Choose to be a teacher and offering a course needs a start time and location.

## **Software Process :**

We intended to apply Rapid Software Development as delivery of tasks is now the most crucial requirements for software development. Therefore we decided to work on our EZ-Programming website by Agile Method. During our Internship last summer we got our hands developing using Laravel. Our mentors there advised that the best practice is by apply agile method.

### **Agile Method:**

Specification, design, Implementation and testing are interleaved and the output from the development process are decided through a process of negotiations during the software process.

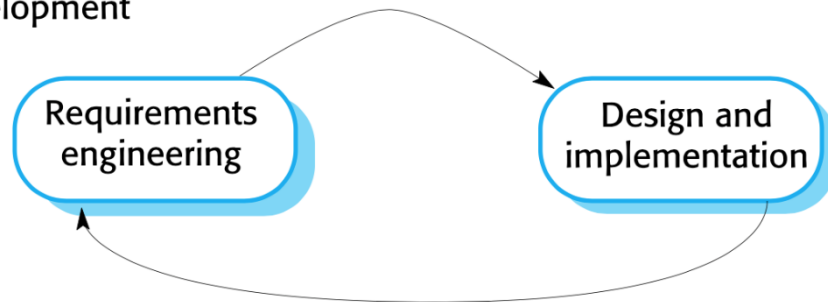
### **Technicalities of Agile Method:**

We worked by agile methods by reducing overheads in the software process like limiting documentation to be able to respond the changing requirements and obstacles we face rapidly, without doing extra unneeded work.

**Incremental Delivery** the website is developed in increments, for example increments in the front-end like building pages (views) then increment of connecting database, increment of building controller and migration. Also by increment in routes during each phase to maintain redirecting between pages.

**Maintain Simplicity** focused on simplicity in both software being developed and in the development process.

## Agile development

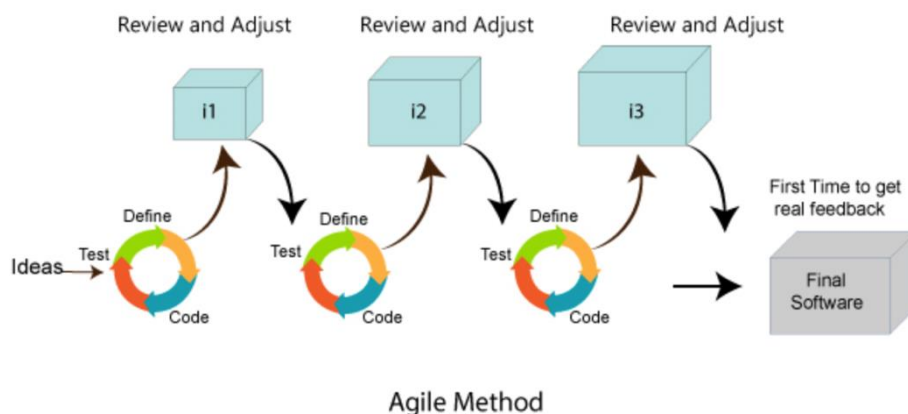


Sometimes we did work using Extreme Programming as new version was built several times per day. We tested each version as it must be runnable for every build to continue in that version. Small releases working individually then combine them together and test their functionality.

**Pair Programming** was used as we worked in pairs and sometimes in group of 3 check each other work and providing feedback. The shared of knowledge that happens during pair programming was very important. Also by that way the code was revised by 2 of us instead on one individually.

### **Advantages of Agile Method:**

- Team satisfaction, continuous development and delivery of useful software.
- Website is developed fast and frequently delivered
- Even late changes in requirements are welcomed.

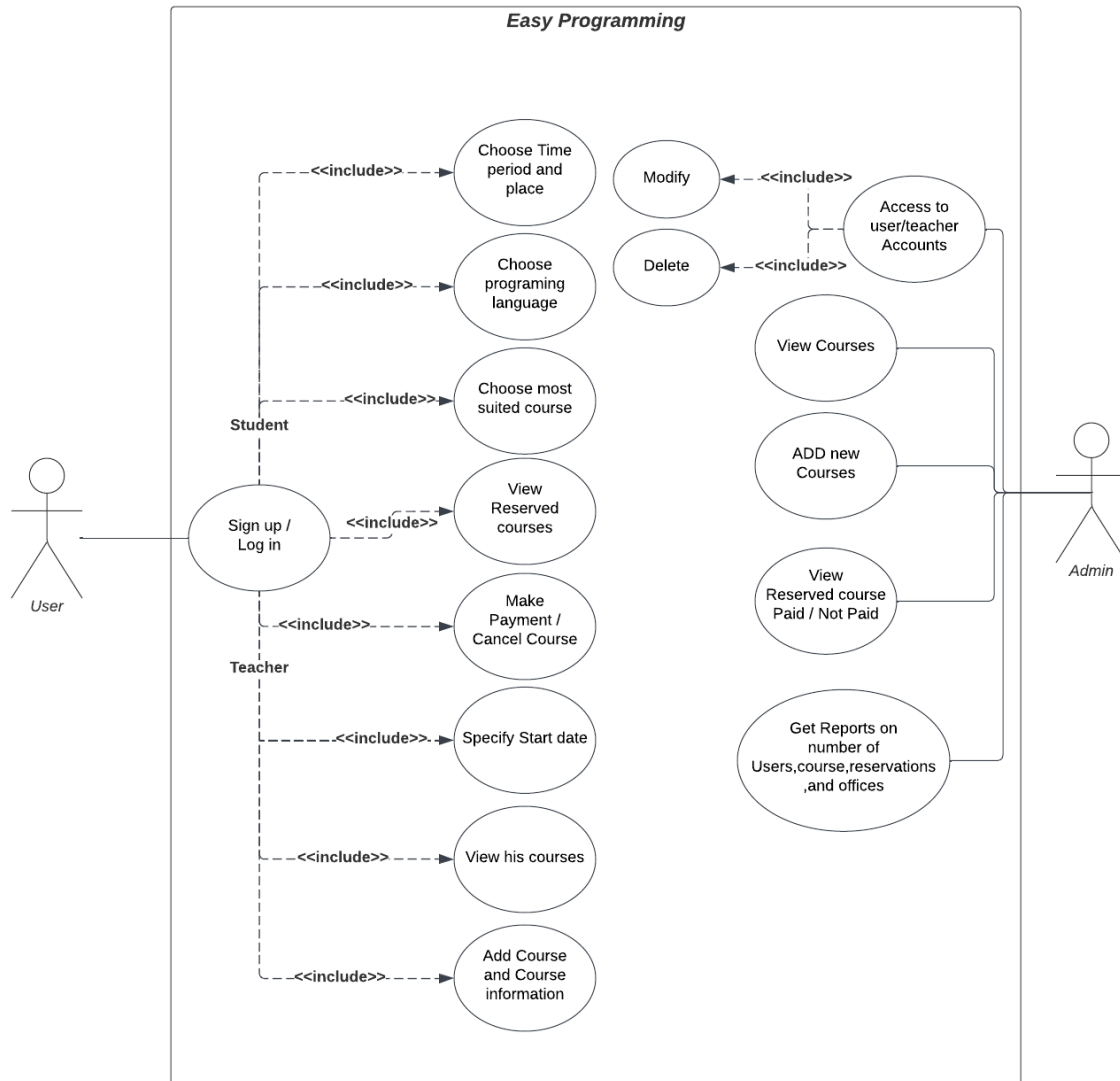


**Disadvantages of Agile Method:**

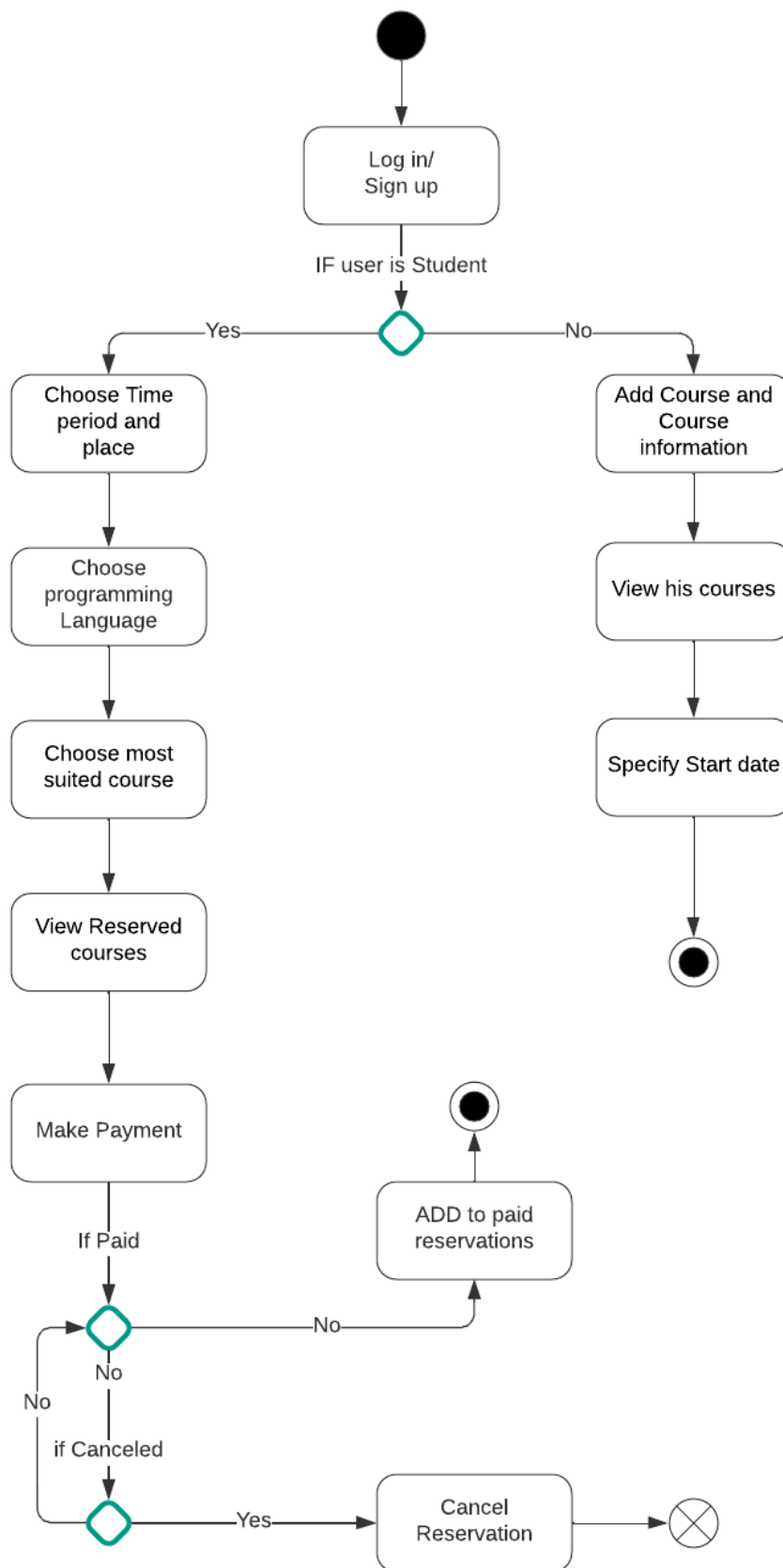
- There is a lack of intensity on necessary designing and documentation.
- The project can quickly go out off track if the project manager is not clear about requirements.

# UML Diagrams

## Use Case Diagram:

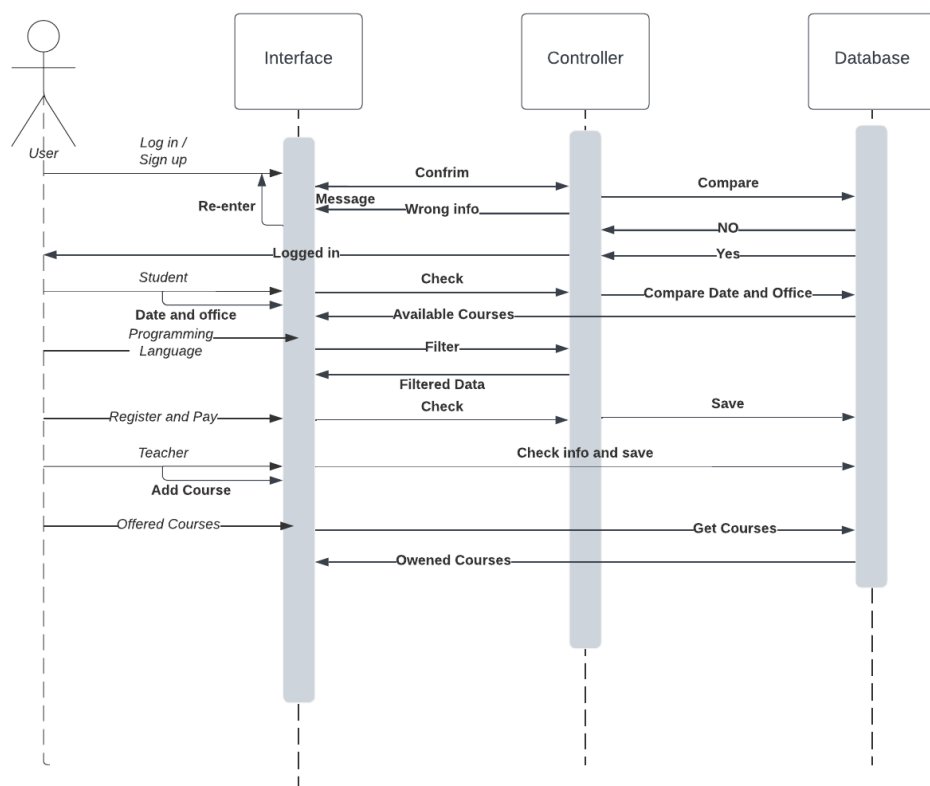


## Activity Diagram:

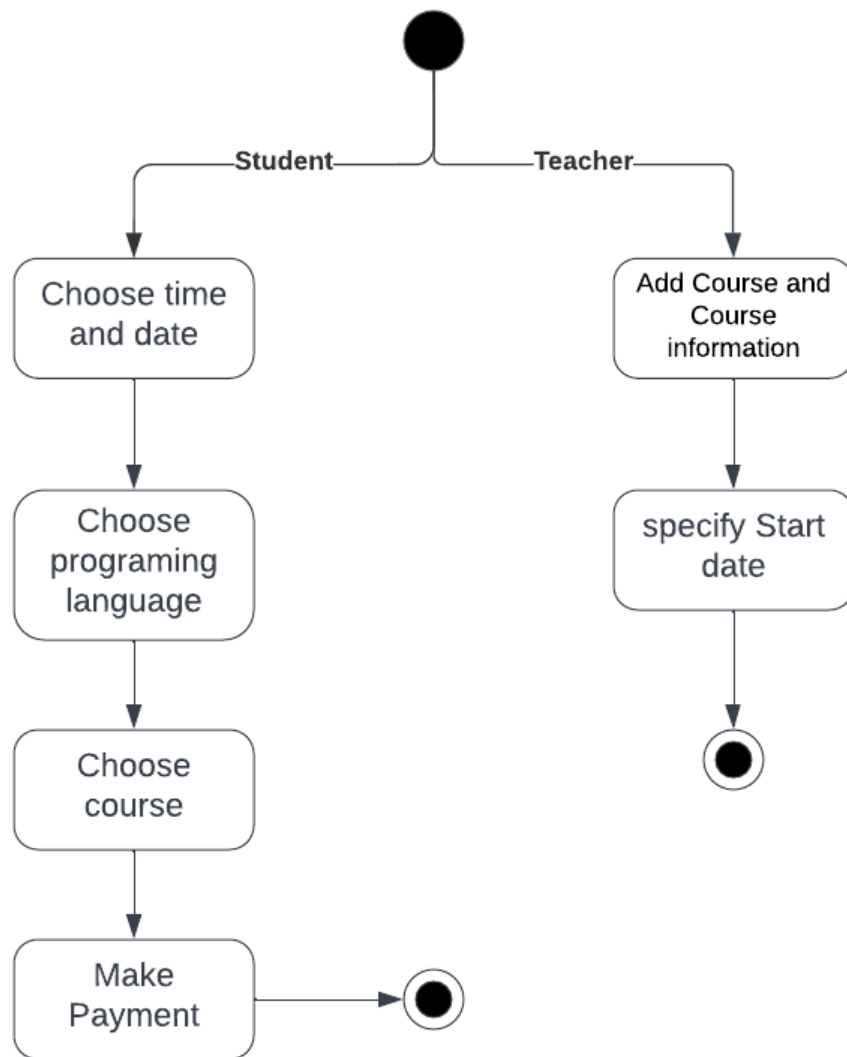




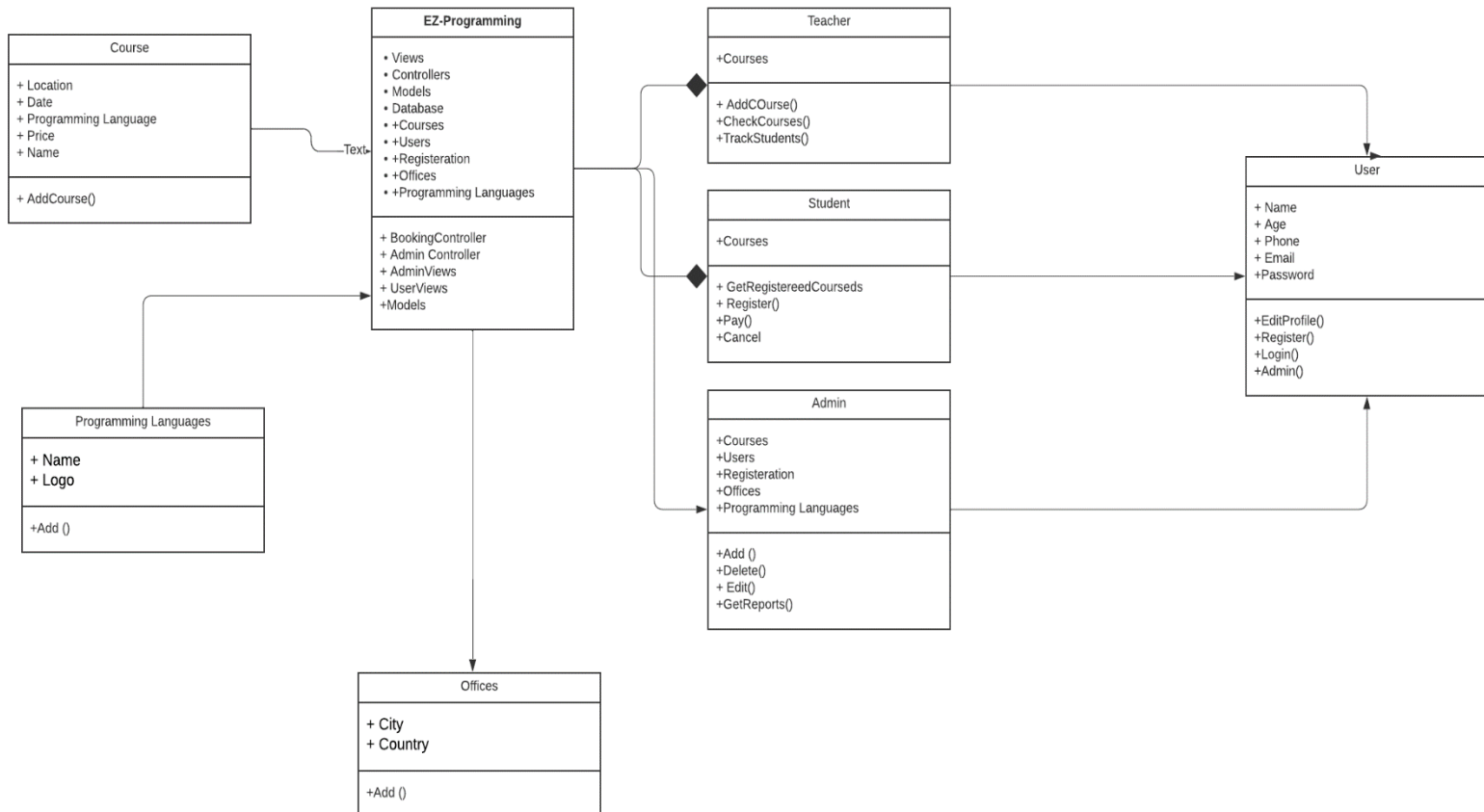
## Sequence Diagram:



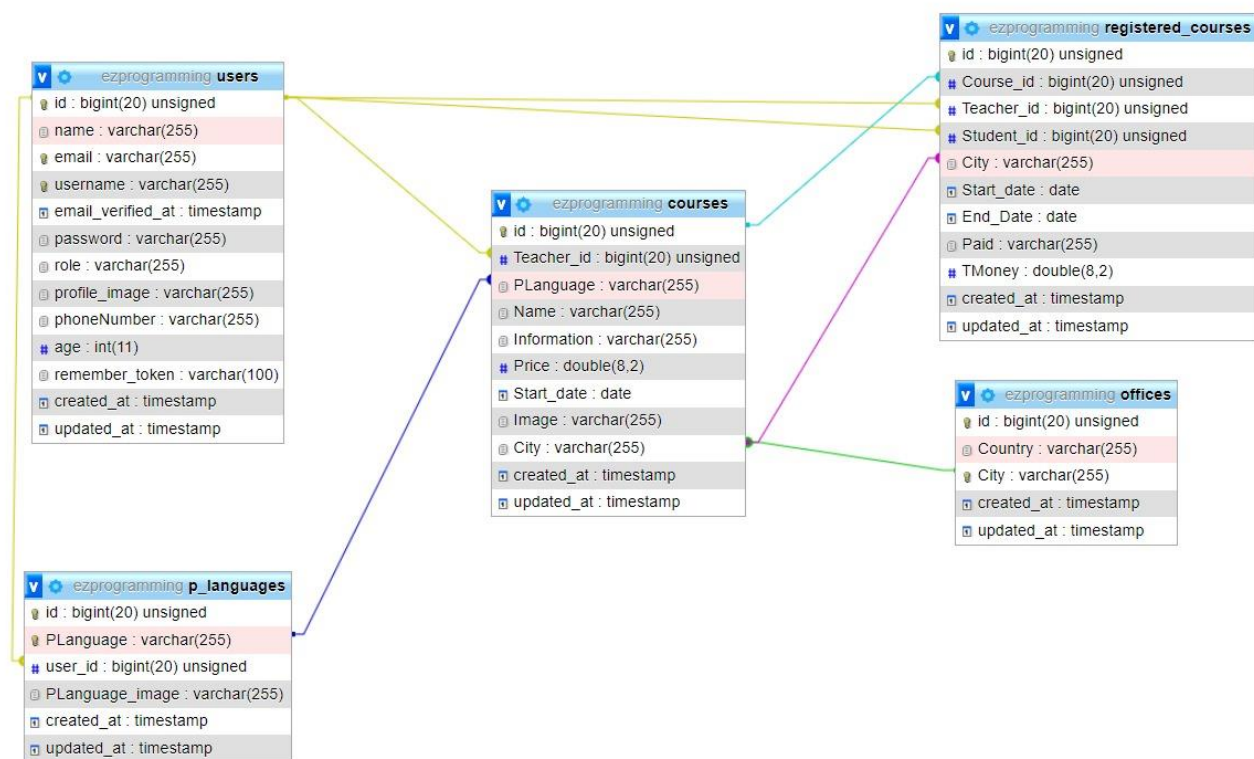
## State Machine Diagram:



## Class Diagram:



## Database Diagram:



## Task Priority's

### General

<u>Frontend</u>	<u>Backend</u>
Login/Register Page (High)	Database Design (High)
Welcome Page (High)	Routing (High)
General (Low)	Login/Register Functionality (High)
Drop Down Menu(Low)	Email/Password Authentication (High)

### Admin

<u>Frontend</u>	<u>Backend</u>
Admin Dashboard Page (Low)	Retrieve Data From database (Low)
User List (Medium)	Delete (Medium)
Offices List (Medium)	Edit (Medium)z
Programming Language List (Medium)	Add(Medium)
Registrations List (Medium)	Search Functionality (High)
Courses List (Medium)	View Website Details (Medium)
View Website Statistics (Low)	

## User

Teacher	
Frontend	Backend
Course Adding View (Medium)	Course Addition to DB (High)
Offered Courses View (Low)	Filtering Courses According To Teacher (Low)
Course Data (High)	Input Validation (High)
View Registered Number Of Registered Students (Low)	Logout Functionality (Low)
Student	
Frontend	Backend
Date & Office Choose Interface (High)	Filtering On Date & Office (High)
Programming Language Choose Interface (High)	Filtering On Date & Office (High)
Search Modal Interface (Medium)	Course Filtering According To Search(Medium)
Drop Down Menu (Low)	
Profile Editing (High)	Update Profile in Database (High)
Display Registered Courses (Medium)	Filtered Registered Courses According to Student (High)
Pre-Pay & Cancel Registration (Low)	Cancel & Pay Functionality (Low)

## Project Description

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## Goals

1. Help people from all around the world find programming teachers to ease their learning experience.
2. Help young programmers and undergraduate computer science students find opportunities to work and earn money.

## Objects

- Teacher
- Admin
- Registration
- Student
- Course
- Office
- Programming Language

## Tools

- Coding : Laravel (MVC)
- Database : SQL
- UML : LUCID CHART
- IDE: Visual Studio Code