

DEPARTMENT OF ELECTRONIC AND TELECOMMUNICATION ENGINEERING  
UNIVERSITY OF MORATUWA



CS2832 – Modular Software Development

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Group Project  
University Internship Management System (Web Based)

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# **1     Introduction**

This is a system which connects undergraduate students and companies who is offering internships. In this software there are three end users.

1. Undergraduate students
2. Companies
3. Administrators

This report describes software process of this software, including requirement specification with use case diagrams, architecture description diagrams and development process of our software.

We have implemented this software using our knowledge of HTML, PHP, CSS, MySQL.

## **2     Requirement specifications**

### **2.1 Student**

- ✓ Student should be able to create an account
- ✓ Student should be able to edit his profile
- ✓ Student should be able to upload his CV to have a better idea about him
- ✓ Student should be able to search companies and view their profiles
- ✓ Student should be able to apply companies
- ✓ Student should be able to accept request from the companies
- ✓ Student should be able to change his account's password

### **2.2 Company**

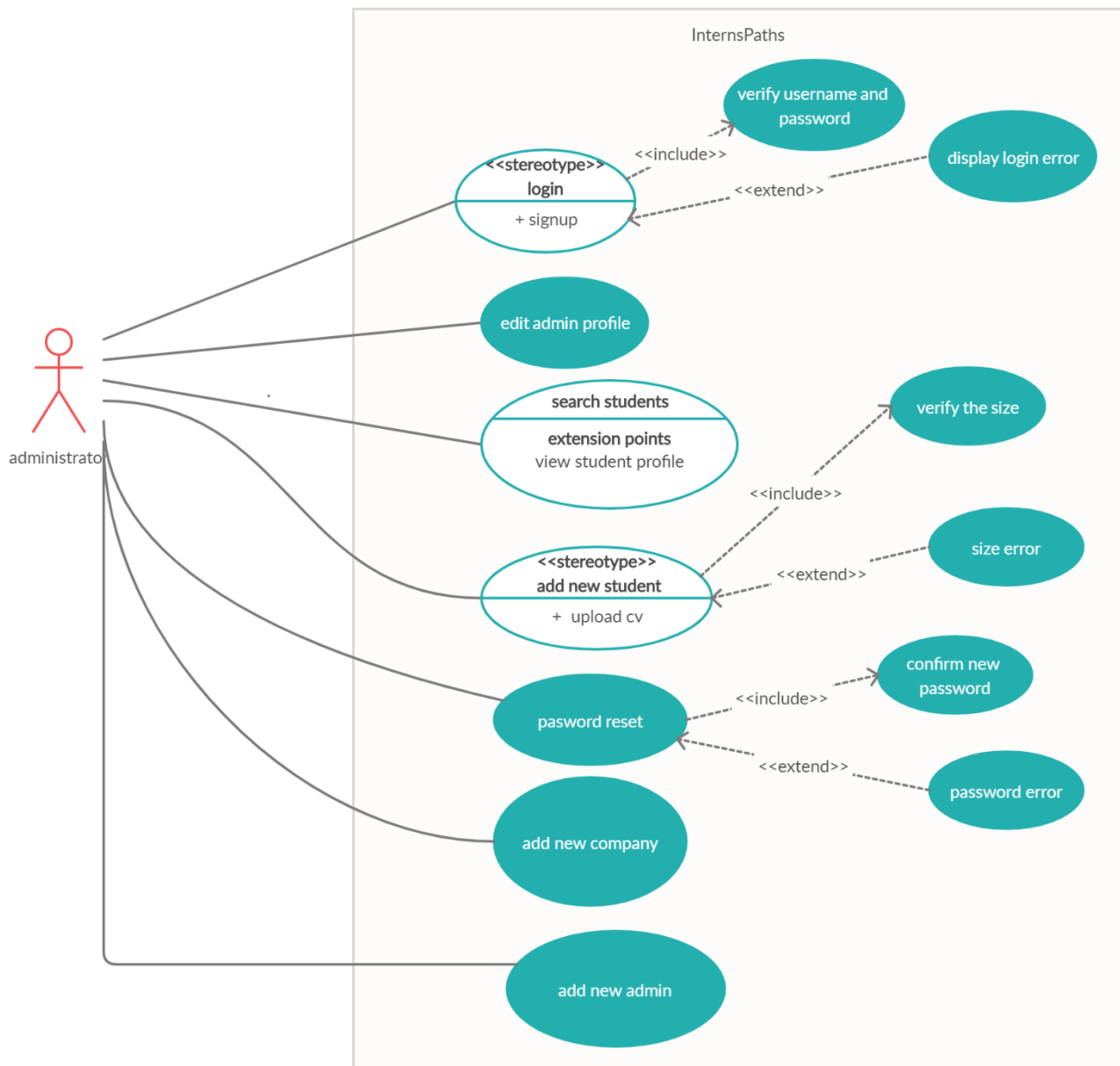
- ✓ Company should be able to create an account
- ✓ Company should be able to edit their profile
- ✓ Company should be able to show their skill requirements to have an idea about what they need
- ✓ Company should be able to search students and view their profiles
- ✓ Company should be able to send requests to students
- ✓ Company should be able to confirm applied students
- ✓ Company should be able to change their account's password

### **2.3 Administrator**

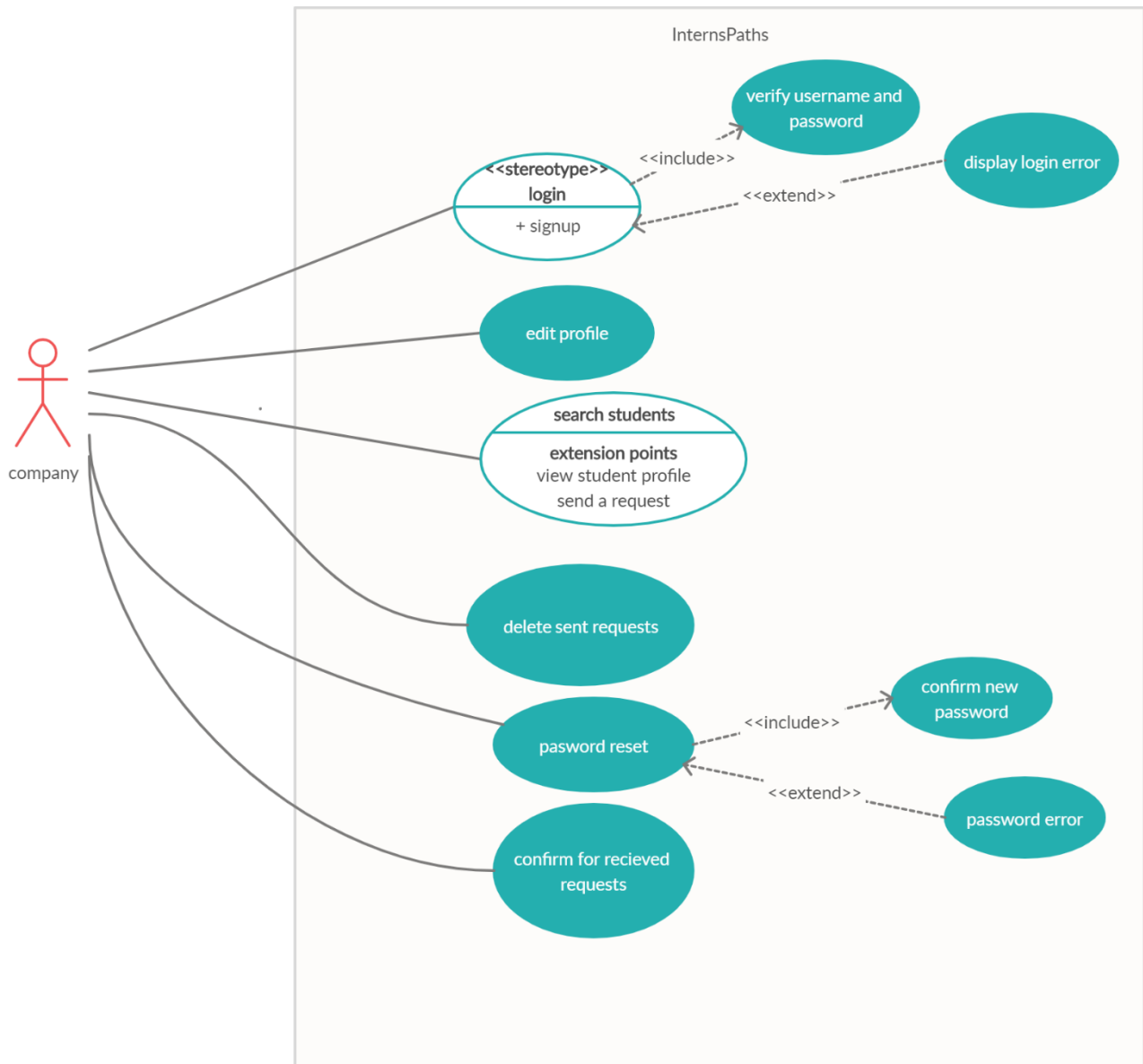
- ✓ There should be a super Admin whose account can't delete
- ✓ Admin should be able to edit his profile
- ✓ Admin should be able to add another Admin and edit his profile
- ✓ Admin should be able to add another Student and edit his profile but he could not be able to apply companies
- ✓ Admin should be able to add another Company and edit their profile but he could not be able to send requests to students
- ✓ Admin should be able to search students and view their profiles
- ✓ Admin should be able to search companies and view their profiles
- ✓ Admin should be able to change their account's password

### 3 Use case diagrams

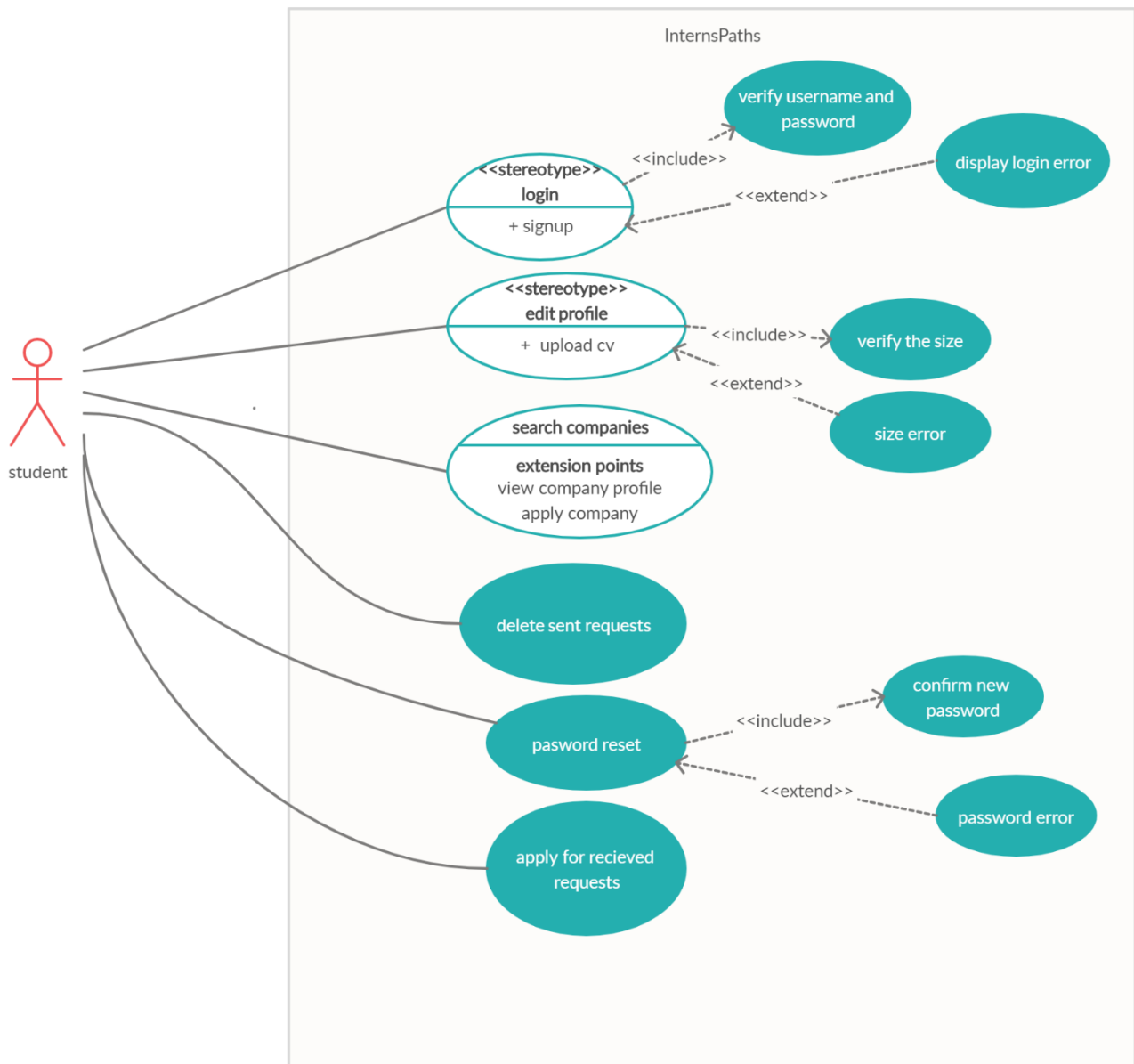
#### 3.1 Admin use case diagram



## 3.2 Company use case diagram



### 3.3 Student use case diagram

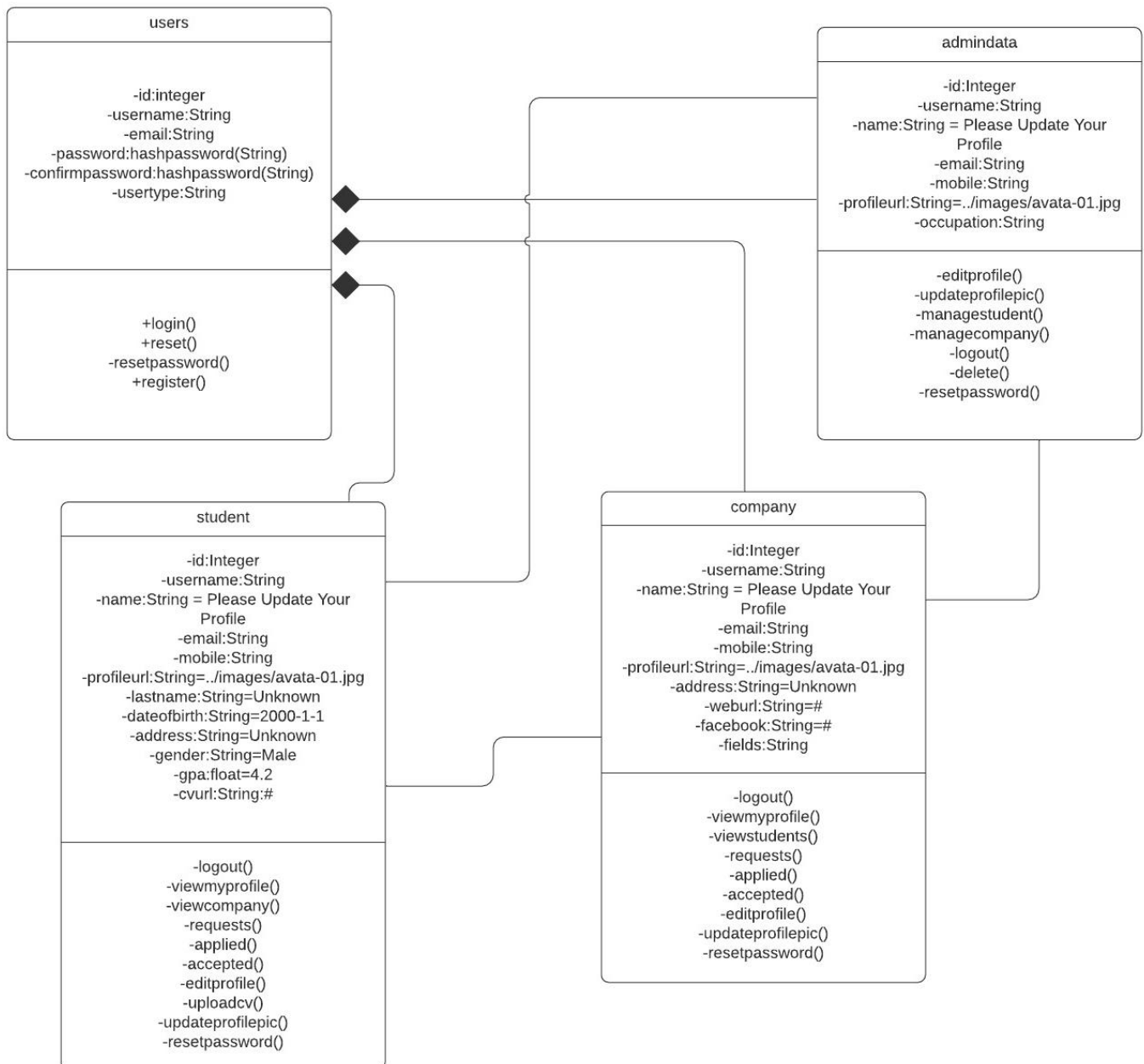


## 4 Design Process UML Diagrams

### 4.1 Class Diagram

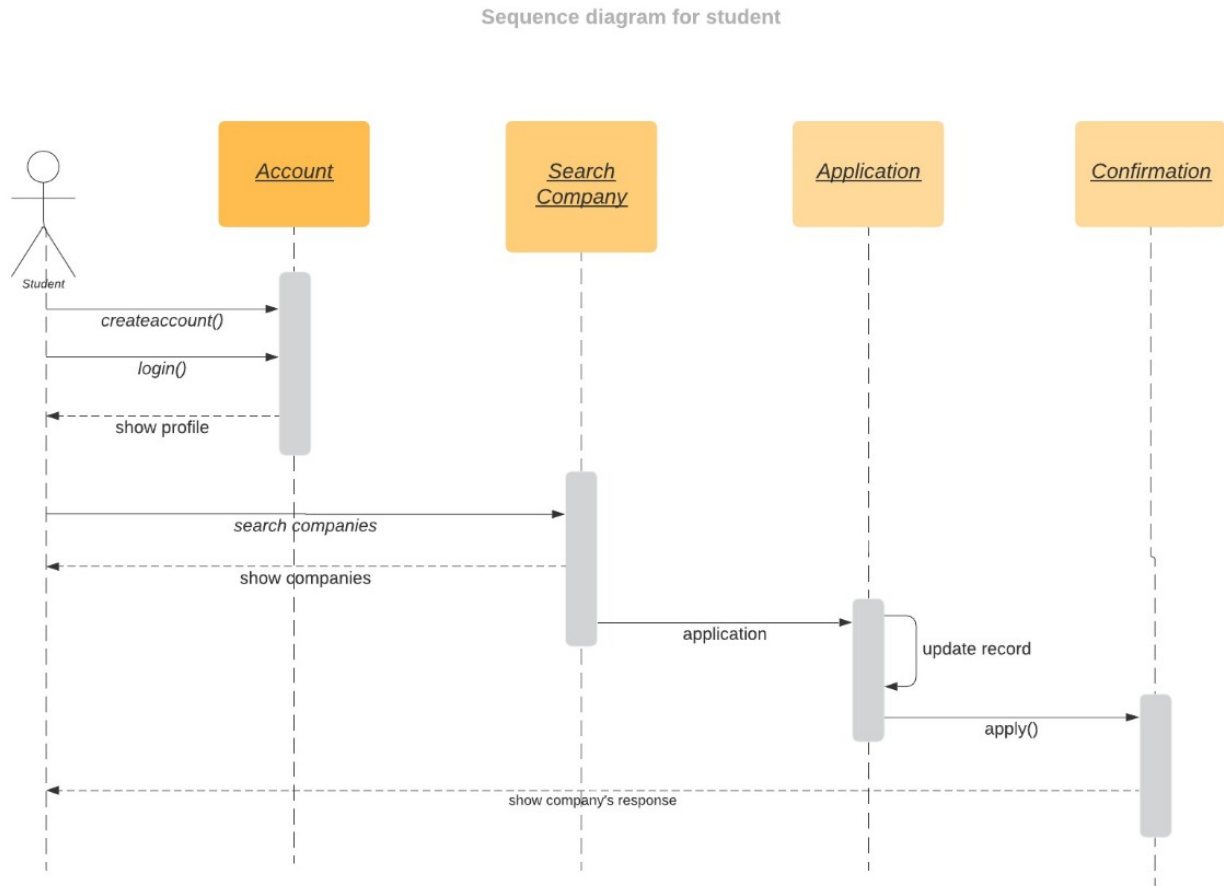
Class Diagram of internspaths.ml

February 1, 2020



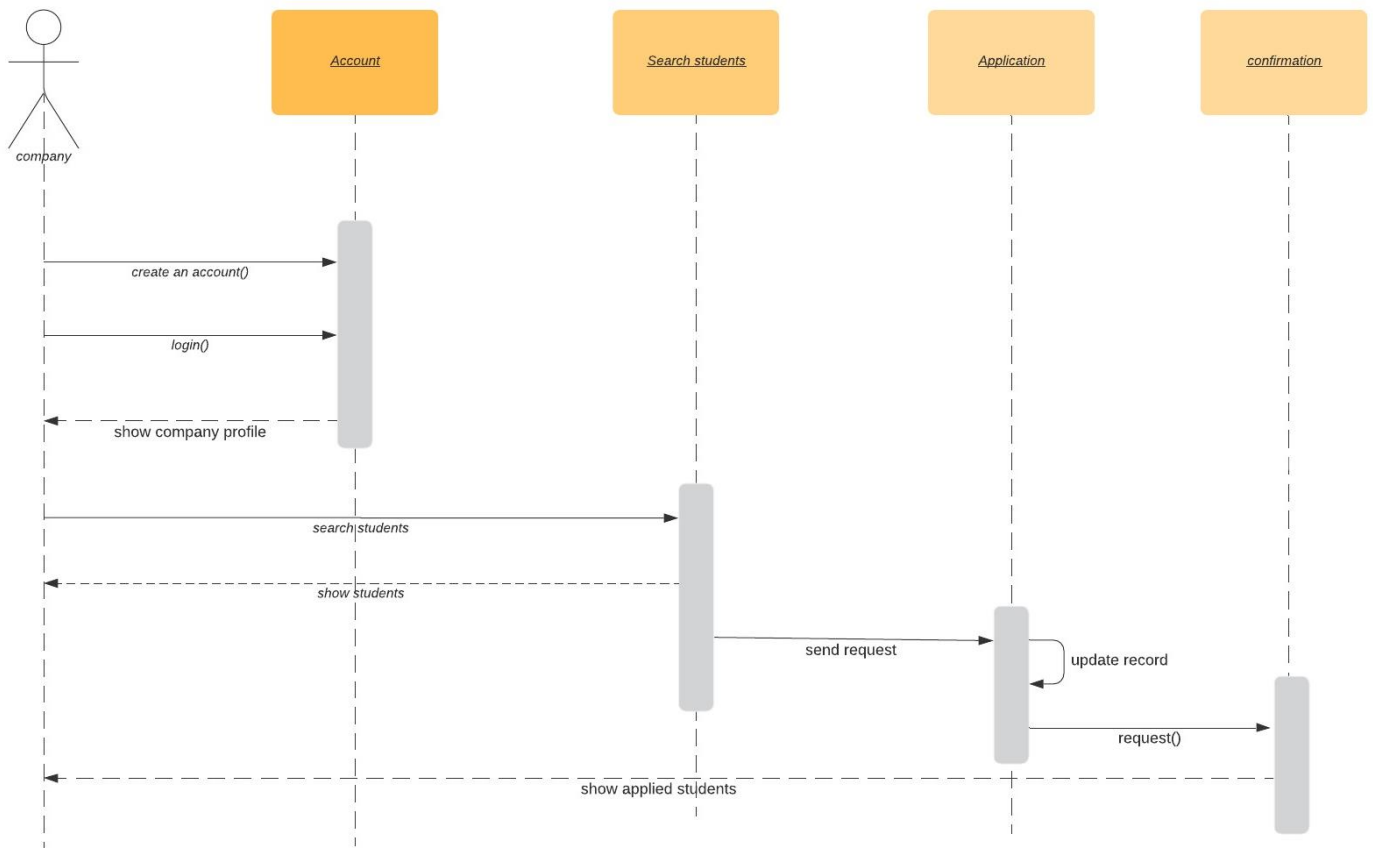


## 4.2 Student Sequence Diagram



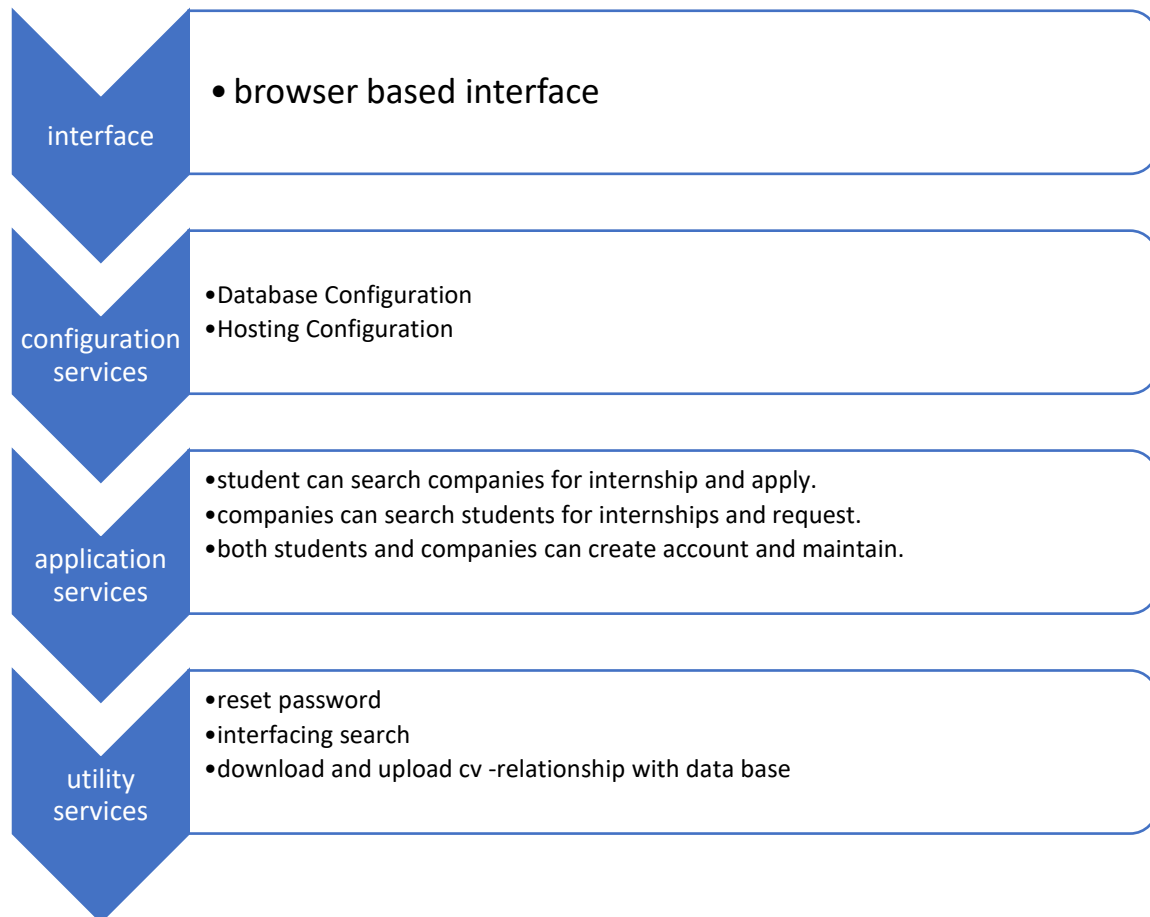
### 4.3 Company Sequence Diagram

sequence diagram for company



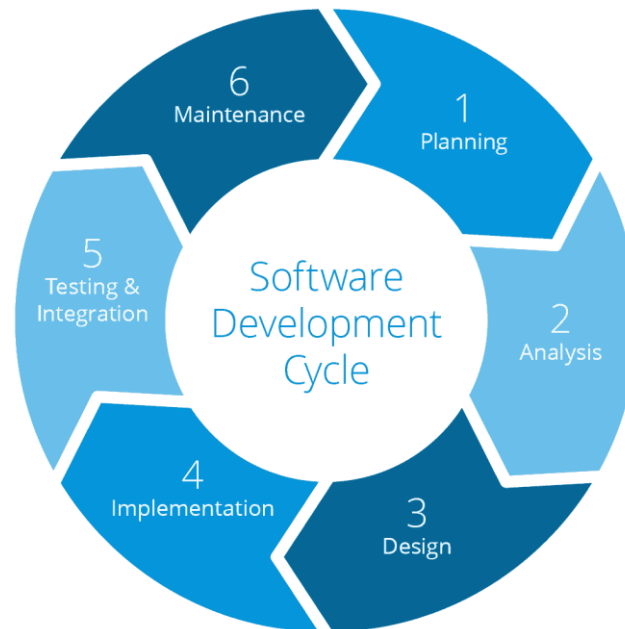
## 5 Architecture Description

For this website we used layered architecture. Following diagram will describe the architecture



## 6 Development Process

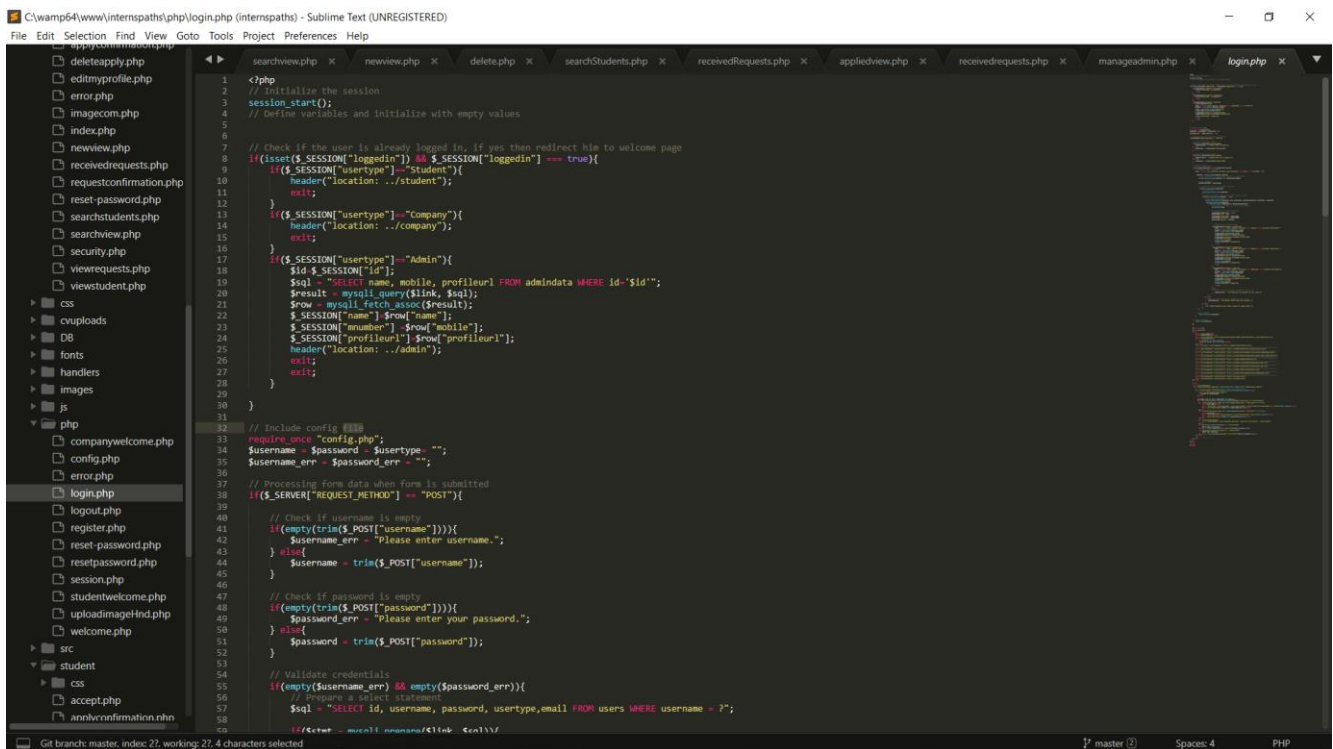
We have identified that the most suitable development method for our project is “Agile Development”. That is because we had a tight schedule to plan, implement and test.



### 6.1 Software Packages Used for Implementation

Software	Purpose
Sublime Text, VS Code	Text editor
WAMP	Managing local server
GIT Desktop	Managing repositories
WebMin	Host server management (GUI)
Microsoft Edge, Google Chrome	Web browser
FileZilla	FTP control to host
PuTTY	Host server management (CLI)

## 6.1.1 Sublime Text Interface



The screenshot shows the Sublime Text editor with a file named `login.php` open. The code is a PHP script for user authentication. It includes session management, database queries, and form validation. The left sidebar shows a file explorer with various PHP files and folders. The bottom status bar indicates the current branch is `master` and the cursor is at line 27, column 4.

```
<?php
// Initialize the session
session_start();
// Define variables and initialize with empty values

// Check if the user is already logged in, if yes then redirect him to welcome page
if(isset($_SESSION["loggedin"]) && $_SESSION["loggedin"] === true){
    if($_SESSION["usertype"] == "student"){
        header("location: ../student");
        exit();
    }
    if($_SESSION["usertype"] == "company"){
        header("location: ../company");
        exit();
    }
    if($_SESSION["usertype"] == "Admin"){
        $sql = "SELECT name, mobile, profileurl FROM admindata WHERE id=?";
        $result = mysqli_query($link, $sql);
        $row = mysqli_fetch_assoc($result);
        $SESSION["name"] = $row["name"];
        $SESSION["anumber"] = $row["mobile"];
        $SESSION["profileurl"] = $row["profileurl"];
        header("location: ../admin");
        exit();
    }
}

// Include config
require_once "config.php";
$username = $password = $usertype = "";
$username_err = $password_err = "";

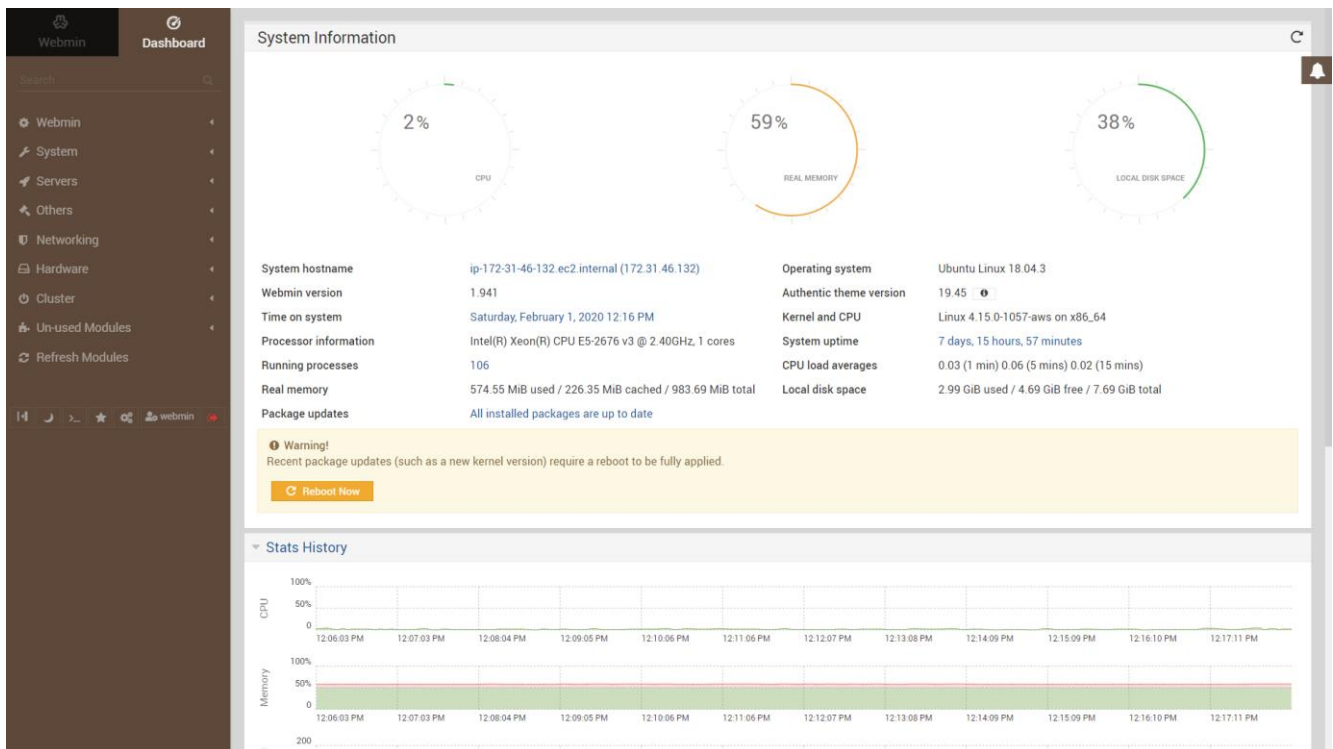
// Processing form data when form is submitted
if($_SERVER["REQUEST_METHOD"] == "POST"){
    // Check if username is empty
    if(empty(trim($_POST["username"]))) {
        $username_err = "Please enter username.";
    } else {
        $username = trim($_POST["username"]);
    }

    // Check if password is empty
    if(empty(trim($_POST["password"]))) {
        $password_err = "Please enter your password.";
    } else {
        $password = trim($_POST["password"]);
    }

    // Validate credentials
    if(empty($username_err) && empty($password_err)) {
        // Prepare a select statement
        $sql = "SELECT id, username, password, usertype, email FROM users WHERE username = ?";
        if($result = mysqli_query($link, $sql)) {
            // Fetch one row
            $row = mysqli_fetch_assoc($result);
            // Check if row exists
            if($row) {
                // Verify if the password is valid
                $password_verify = password_verify($password, $row["password"]);
                if($password_verify) {
                    // Password is valid, store the user information in session
                    session_regenerate_id(true);
                    $_SESSION["loggedin"] = true;
                    $_SESSION["name"] = $row["name"];
                    $_SESSION["anumber"] = $row["mobile"];
                    $_SESSION["profileurl"] = $row["profileurl"];
                    $_SESSION["usertype"] = $row["usertype"];
                    header("location: ../welcome.php");
                    exit();
                }
            }
        }
    }
}

// Redirect to login page if there is an error
if($username_err || $password_err || $password_verify == false) {
    header("location: ../login.php");
    exit();
}
```

## 6.1.2 Webmin Interface



## 6.2 Hosting and Domain Name

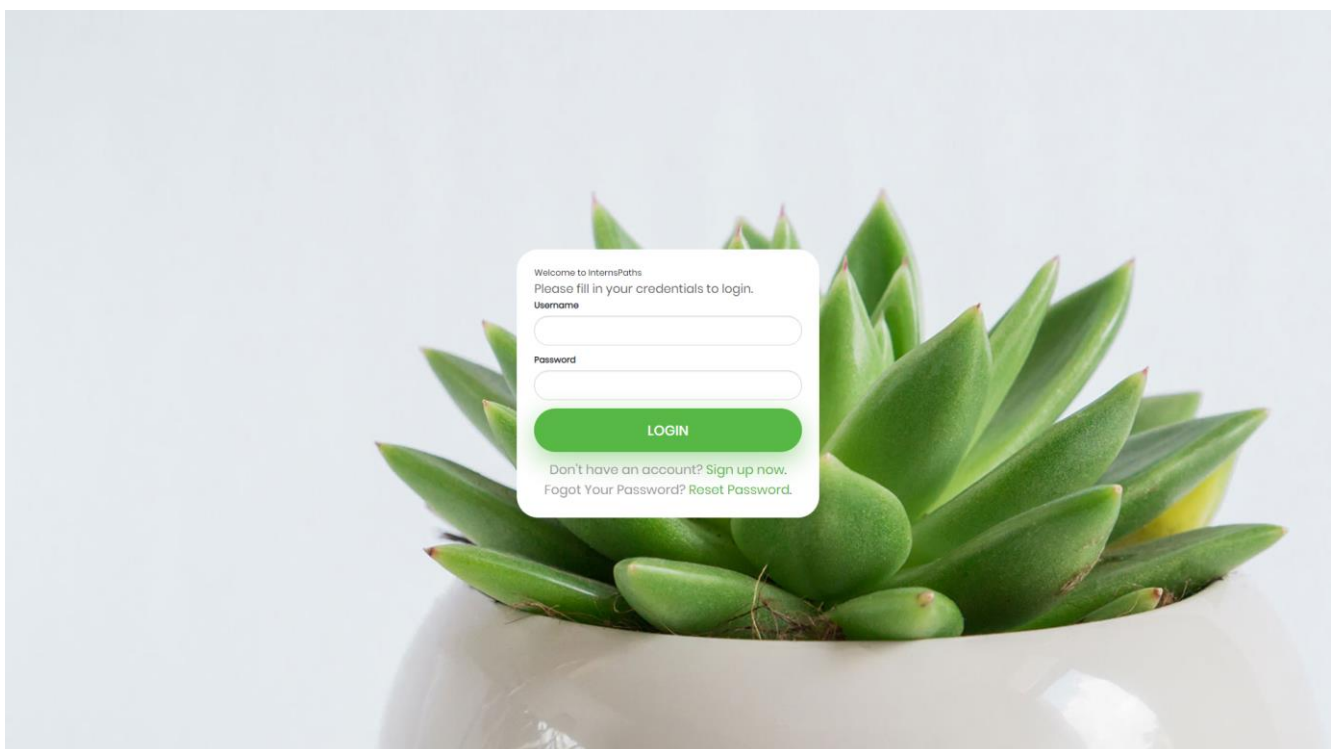
We have obtained the domain name “internpaths.ml” for free for 1 year of period from [www.freenom.com](http://www.freenom.com). Hosting is achieved by AWS Educate as we can have a student account for our university email address.

In AWS educate EC2 console we created an ubuntu instance as our virtual server. Elastic IP that have been allocate for our server is 52.86.141.54. Initial setup of the server is done using PuTTY as the CLI. Then we configure Webmin for easy access for the server. FileZilla is used to upload new contend to the server.

## 6.3 Creating Interfaces

All the web interfaces are created using HTML, CSS, JavaScript to have the required design for us. Some of the online available templates were referred in order to have a good design.

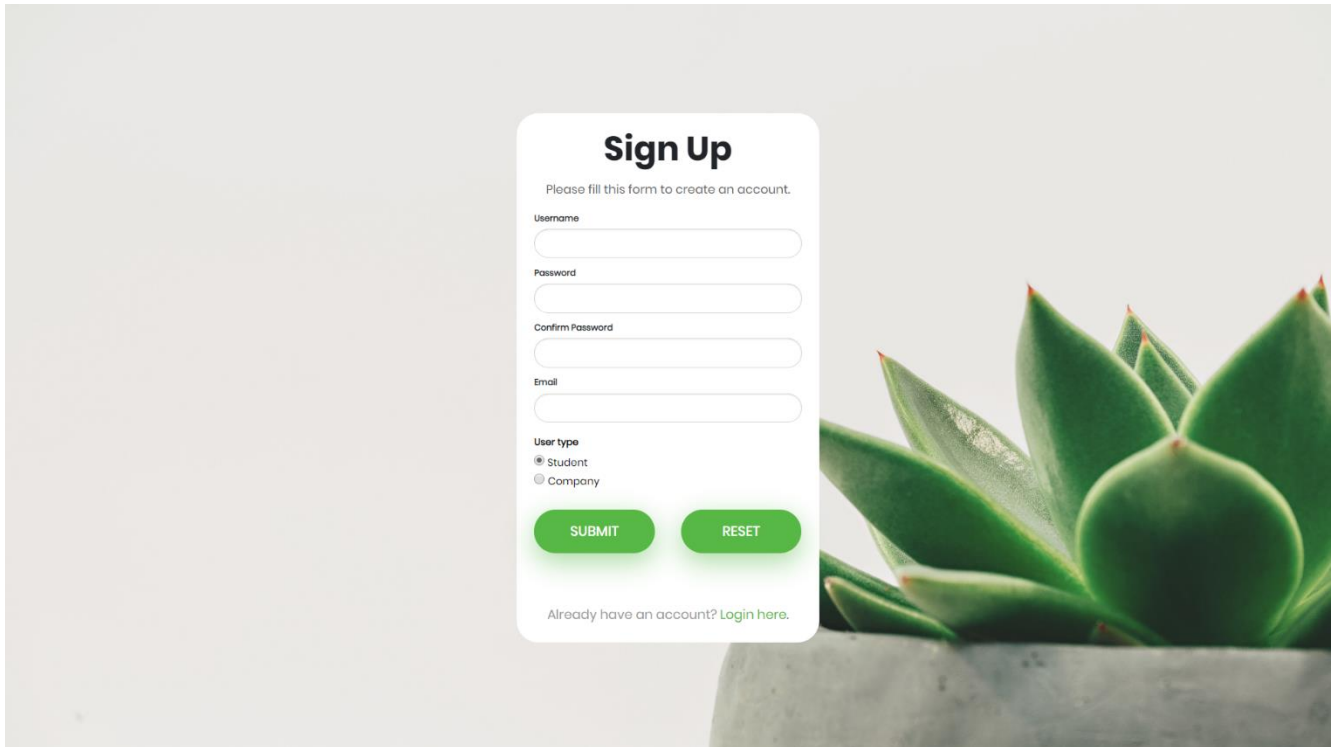
### 6.3.1 Login Interface



Login interface is common for all type of users (Students, Company, Administrators). Server will identify the user type and redirect the user to the correct console. Login interface is the first thing a visitor sees when comes to the website. If he/she is a new user, then they can click “Sign up now” to create a new account as a Student or a Company. New administrator can only

be added by an admin. If any user forgot their password, they could reset their password by giving required credentials.

### 6.3.2 Signup Interface



**Sign Up**

Please fill this form to create an account.

Username

Password

Confirm Password

Email

User type

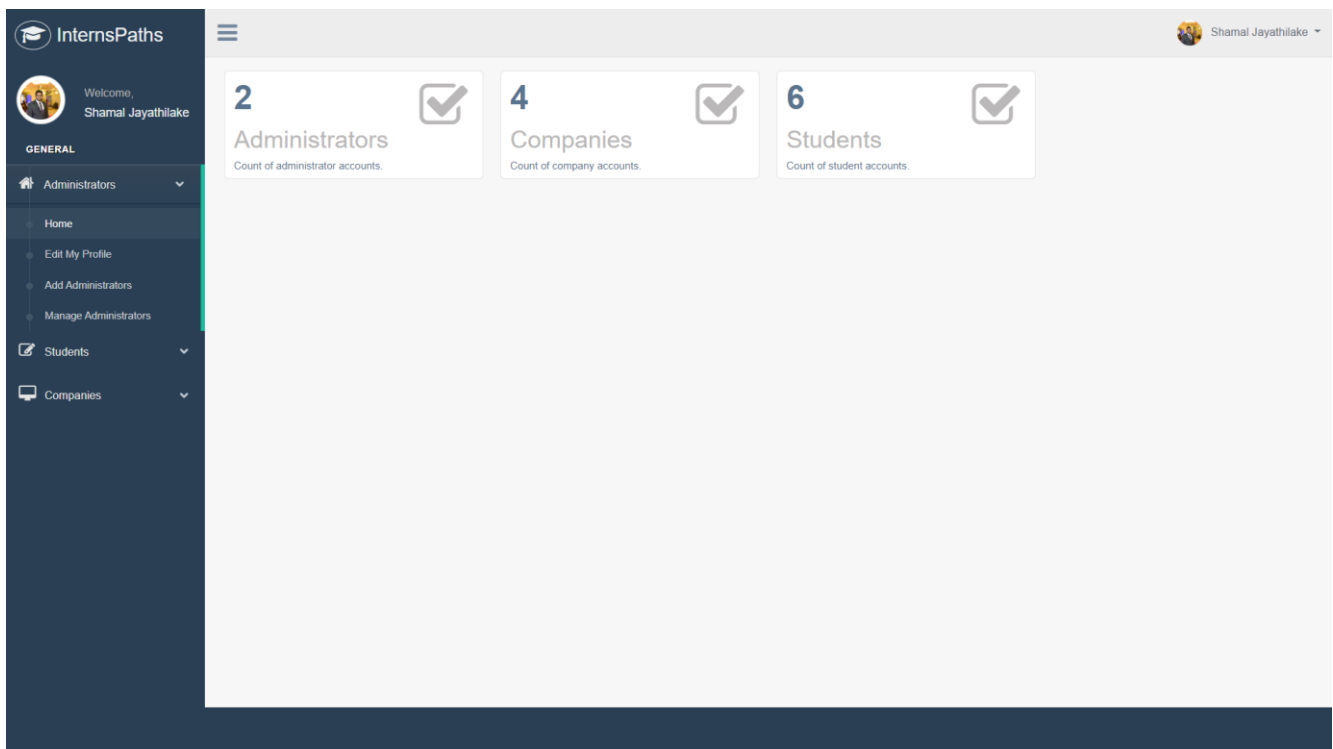
☒ Student

☐ Company

Already have an account? [Login here.](#)

New users can create their account here as Students or Companies. Form data validation is done in the backend using PHP.

### 6.3.3 Administrator Interface



Home page of the administrator console contains count of each type of users. Administrators can manage student, company and administrator data tables. He/ She can add new users, edit user profiles, delete accounts & reset user passwords. However, we decide to restrict the administrator from manipulating Company – Student relationships.



### 6.3.4 Student Interface

The screenshot displays the 'InternsPaths' web application interface. On the left is a dark blue sidebar with the 'InternsPaths' logo and a list of navigation options: Home, Edit My Profile, Search Companies, Sent Requests, Received Requests, and Security. The main content area is white and features the user's profile for 'SHEHAN ADHIKARI'. The profile includes a profile picture of a man in a suit, a 'DESCRIPTION' section with a bio, a 'WHAT I DO ?' section listing projects, an 'I'M INTERESTED IN' section with a list of interests (machine learning, robotics, python programming, bio mechanis, genomics), and a 'VIEW MY CV' button. Below the profile picture, personal details are listed: Name, Date of birth, Address, Gender, Phone, Email, Field, Personal Website, and LinkedIn Address.

**InternsPaths** Welcome, Shehan Adhikari

**GENERAL**

- Home
- Edit My Profile
- Search Companies
- Sent Requests
- Received Requests
- Security

## SHEHAN ADHIKARI

**DESCRIPTION**

I am an undergraduate student of Biomedical Engineering in university of moratuwa. I have an interest about nw develpoing technologies and i have creativity mind .i have done several projects related to biomedical engineering.i have one moth work experience in CEBI company. I have listed down my interests below.

**WHAT I DO ?**

currently i doing below projects 1. automated gas meter 2.automated dosage suplier 3. car audio amplifier 4. machine learing based ibelt 5. machine learning based iGlass

**I'M INTERESTED IN**

- ✓ machine learning
- ✓ robotics
- ✓ python programming
- ✓ bio mechanis
- ✓ genomics

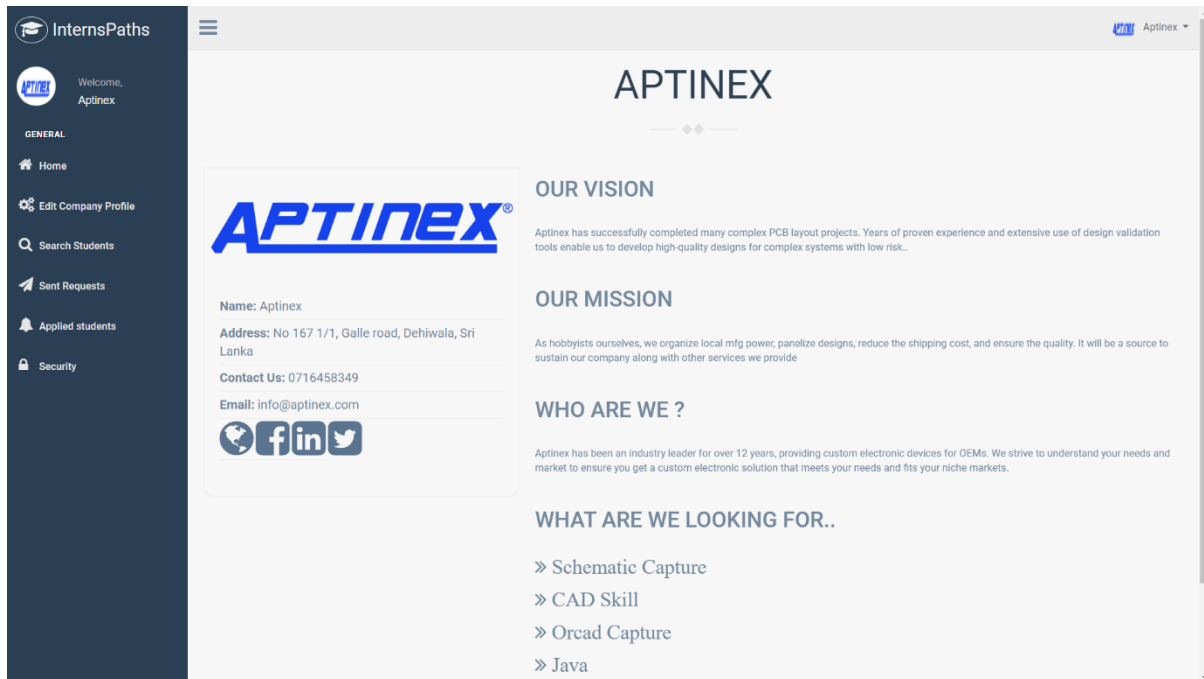
**VIEW MY CV**

**Personal Details:**

- Name: Shehan Adhikari
- Date of birth: 1997-09-14
- Address: No.03, Supercity Estate ,Kiwulgalle ,Narammala.
- Gender: Male
- Phone: 0766657660
- Email: adhikarishehan100@gmail.com
- Field: Electronic & Telecommunication Engineering
- Personal Website: <https://www.fiverr.com/s2/b59d3a9d4b>
- LinkedIn Address: <http://linkedin.com/in/shehan>

Student can maintain their own profile and include their CV to it. They can view the list of companies, filter them according to their needs, view company details and then then can apply for internships in a company. Also, students can accept internship invitations.

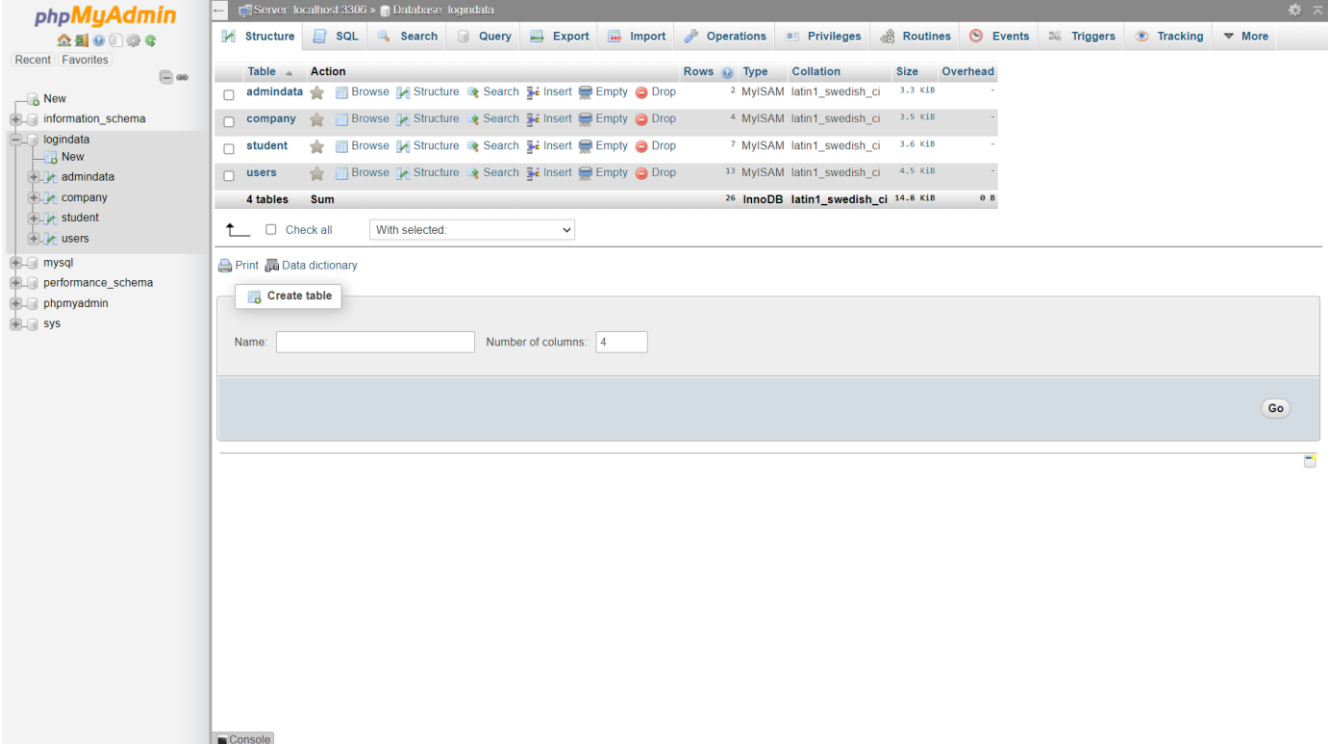
### 6.3.5 Company Interface



A company can maintain their own profile and with their information about who are they looking to have for internships, what kind of skills there are looking for and so on. They can view the list of students, filter them according to their needs, view student details and then they can invite student for internships in the company. Also, companies are allowed to accept internship requests of students.

## 6.4 Creating Database

We created SQL databases using phpMyAdmin. Our database name is logindetails and it contains four tables named as users, admin, student and company.



The screenshot displays the phpMyAdmin web interface. The left sidebar shows the database structure, with 'logindata' selected. The main panel shows the 'Structure' tab for the 'logindata' database. It lists four tables: 'admindata', 'company', 'student', and 'users'. Each table has a 'Browse' icon, a 'Structure' icon, a 'Search' icon, an 'Insert' icon, an 'Empty' icon, and a 'Drop' icon. The table details are as follows:

Table	Action	Rows	Type	Collation	Size	Overhead
admindata	Browse Structure Search Insert Empty Drop	2	MyISAM	latin1_swedish_ci	3.3 KIB	-
company	Browse Structure Search Insert Empty Drop	4	MyISAM	latin1_swedish_ci	3.5 KIB	-
student	Browse Structure Search Insert Empty Drop	7	MyISAM	latin1_swedish_ci	3.6 KIB	-
users	Browse Structure Search Insert Empty Drop	13	MyISAM	latin1_swedish_ci	4.5 KIB	-
4 tables	Sum	26	InnoDB	latin1_swedish_ci	14.8 KIB	0 B

Below the table list, there is a 'Create table' button. The 'Name' field is empty, and the 'Number of columns' is set to 4. A 'Go' button is located at the bottom right of the 'Create table' section.

## 6.5 Backend Programming

Backend of the system is programmed using php. We followed some tutorials on w3schools to have enough knowledge to implement the backend of the system.

```
<?php
// Initialize the session
session_start();
// Define variables and initialize with empty values

// Check if the user is already logged in, if yes then redirect him to welcome page
if(isset($_SESSION["loggedin"]) && $_SESSION["loggedin"] === true){
    if($_SESSION["usertype"]=="Student"){
        header("location: ../student");
        exit;
    }
    if($_SESSION["usertype"]=="Company"){
        header("location: ../company");
        exit;
    }
    if($_SESSION["usertype"]=="Admin"){
        $id=$_SESSION["id"];
        $sql = "SELECT name, mobile, profileurl FROM admindata WHERE id='$id'";
        $result = mysqli_query($link, $sql);
        $row = mysqli_fetch_assoc($result);
        $_SESSION["name"]=$row["name"];
        $_SESSION["mnumber"] =$row["mobile"];
        $_SESSION["profileurl"]=$row["profileurl"];
        header("location: ../admin");
        exit;
    }
}
}
```

## 7 Testing and evolution

We developed this website using agile development process. It means that this system was developed step by step. We tested each unit while developing (unit testing). if there were errors, we had to repeat the developing process for regarding unit. When we completed the unit testing, we focused on testing the whole system.

To execute the system testing process, we tested our system on sample users. Then we changed our system according to their feedback.

## 8 Login Details for User Accounts

Username	User Type	Email	Password
SuperAdmin	Admin	<a href="mailto:sadmin@internspaths.ml">sadmin@internspaths.ml</a>	admin@Internspaths
Shamal	Admin	<a href="mailto:shamalchamara@gmail.com">shamalchamara@gmail.com</a>	SCJ@1996
Chamara	Student	<a href="mailto:chamara@internspaths.ml">chamara@internspaths.ml</a>	Chamara@Internspaths
ParaqumTech	Company	<a href="mailto:paraqum@internspaths.ml">paraqum@internspaths.ml</a>	Paraqumtech@Internspaths
MITesp	Company	<a href="mailto:Mitesp@internspaths.ml">Mitesp@internspaths.ml</a>	Mitesp@Internspaths
Shehan Sandeepa	Student	Adhikarishehan100@gmail.com	9725@Shehan
Esol	Company	keerthi@effectivesolutions.com	Esol@internpaths
Shehan Adhikari	Admin	shehanadhikari@gmail.com	shehan@intern
Isuru_Jayaweera	Student	<a href="mailto:itjayaweera@gmail.com">itjayaweera@gmail.com</a>	Isuru@1234
Aptinex	Company	info@aptinex.com	Aptinex@1234
Isuru	Admin	isuru@internspaths	Isuru@1234

URL – <http://www.internspaths.ml>