**4.5.Test case Design:-**

|  |  |  |  |
| --- | --- | --- | --- |
| Test Condition | Input Selection | Expected | Actual |
| Admin Login | username=””  Password=”” | username and password fields are should not be empty | Login with super user Credentials |
| username=”admin” Password=”abc123” | Verify and redirect |  |
| Teacher Login | username=””  Password=”” | username and password fields are should not be empty | . Login with Register Credentials |
|  | username=”teacher” Password=”abc123” | Verify and redirect | Verify and redirect |

**5.0 Implementation and Testing**

**5.1. Implementation Approach**.

**List of Modules:-**

**Admin module:-**

1. Login module
2. Signup panel
3. Student panel:-

Upload file

1. logout

**Teacher module:-**

1. teacher login
2. attendance panel
3. view report
4. view excel
5. send mail
6. logout

**Admin Module:- login module, Signup panel, Student panel, logout**

admin should register the students details such as his name email address and also create training data of each student by entering his roll id and taking snaps of his or her frontal face and then webapp will automatically create model for that particular roll id and save it on server, The model which is created for each student is about 8kb in size. Admin can also register teachers using this site.

**Teacher Module:- teacher login , Attendance panel, view report, logout**

After teacher login you can see there are three tabs one for attendance panel ,other is view report panel . In the view report module I am having 2 sub modules. One is view excel sheet and send mail notifications module. And last is logout module.

**Attendance panel:-** After going to attendance tab teacher will pass phone to student and they have to show their face to mark their attendance one by one. If face is matched with the model saved for the particular roll id attendance is marked.

**Note:- There is also problem that student can mark their friends attendance by showing their photo from mobile i.e. spoof attack.**

**For spoof detection I am using tensorflow inception model by retraining it's last layer so that it can detect mobile phones in an image.**

**View Report:-** after going to View report tab teacher need to enter date,time and class then teacher can see the attendance and can also download the excel. Teacher can also see that how many lecture each student is present from that particular class.

**Note:- To generate and manage excel I am using xlrx and xlrd and pandas.**

**Send mail:-** teacher can also send mail after attendance for that particular day is over for particular class.

**Note:- For sending email's I am using flask-mail.**

**Technologies:-**

**Hardware**

|  |  |
| --- | --- |
| Processor | Intel@ Pentium quad core |
| Memory | 4GB |
| ROM | 1TB |

**Software:-**

|  |  |
| --- | --- |
| IDE | VsCode |
| Language | Html+Css+JavaScript+Python+Flask |
| Database | Mysql |
| Operating system | Windows 10 |

**Timelines:-**

|  |  |  |
| --- | --- | --- |
| Start date | Duration | Module name |
| 16 /12/2021 | 4 days | Admin login page |
| 21/12/2021 | 5 days | Admin Signup page |
| 27/01/22 | 10 days | Student panel and upload file |
| 08/01/22 | 2 days | Teacher login |
| 11/01/22 | 10 days | Attendance panel(face detection) |
| 22/01/22 | 10 days | View report page(view excel) |
| 03/01/22 | 2 days | Send mail |

**5.3 Testing approach:-**

A test approach is the test strategy implementation of a project, defines how testing would be carried out.

**5.3.1 Unit Testing:-**

All the modules like registration, login, image snapshot, face detection, face cam recognition and attendance record page will be test individual.

**5.3.2 Integration Testing:-**

In integration testing we are checking after successful registration teacher also able login into the webapp. Here we are checking once admin register teacher and student details will get store into Mysql database. Basically here we are checking all the modules are connected or not with each other.

**5.3.3 System Testing:-**

Here we are checking whatever input we are giving to the system and we are getting according output or not. Also The whole system working properly or not.

**5.3.4 Validating Testing:-**

Validation testing can be defined in many ways, but a simple definition is that validation succeeds when the software function in a manner that can be reasonably expected by the Users.

**5.3.5 Output Testing:-**

After performing the validation testing the next test is output testing of the proposed system since no system could be useful if it does not produce the required output in the specified format. Asking the user about the format required by them tests the outputs generated or displayed by the system under consideration. The output format on the screen is found to be correct as the format was designed in the system phase according to the user’s needs. Hence, output testing does not result in any correction in the system.

**5.3.6 User Acceptance Testing:-**

User acceptance of a system is the key factory for the success of any system. The system under consideration is tested for user acceptance by constantly keeping in touch with the perspective system.