# IT314: Software Engineering
# Lab Session 8 - Unit Testing
# Student Information System G23

→ Here we are Testing the login module of Student Information System And we are using **mocha** and **chai** Package for Testing in node.js.
So here we are test Only for Student Login Because For Faculty and Admin login details is same so Test Case For Student are Same for admin as well as Faculty

- **Test Cases For Student Login:**

1) Enter a Valid Credentials
2) Enter a Email which is not stored in our Database
3) Null Value in Email
4) Null Value in Password
5) Enter a Email which is store in our database with wrong password
6) Enter a Invalid Credentials in all fields
7) Enter a Invalid Email Format.

- **Here is Login Code which we are Testing:**

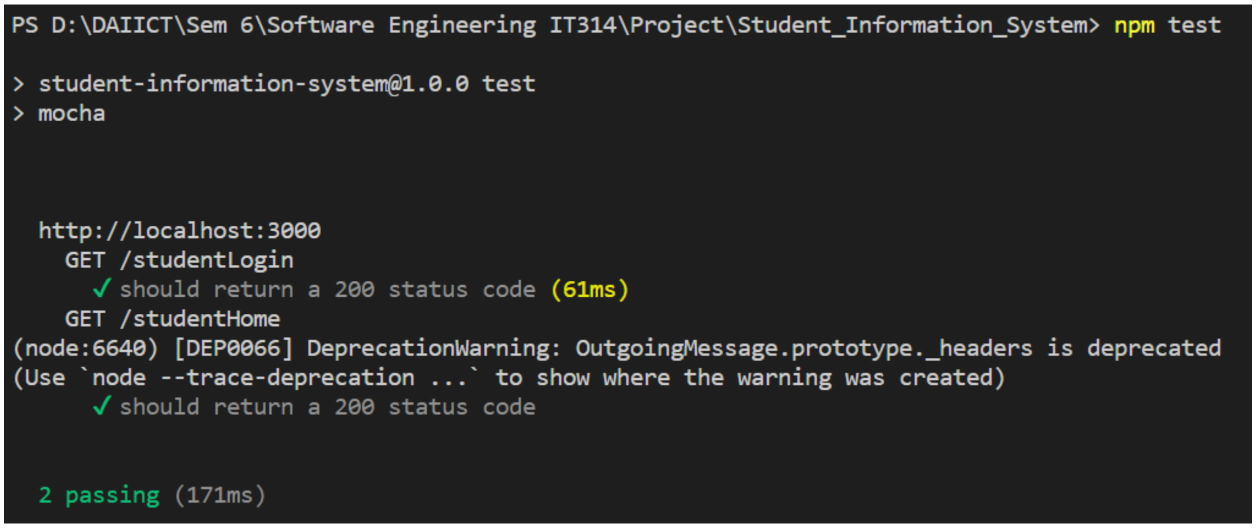
```
app.get('/studentLogin', checkNotAuthenticatedStudent, (req, res) => {
    res.status(200).render('studentLogin.ejs')
})

app.post('/studentLogin', function(req, res, next) {
    passportStudent.authenticate('student', function(err, user, info) {
      if (err) {
        return next(err);
      }
      if (!user) {
        // Authentication failed, send a 401 status
        return res.status(401).redirect('/studentLogin');
      }
      // Authentication successful, send a 200 status and redirect to
'/studentHome'
      req.logIn(user, function(err) {
        if (err) {
          return next(err);
        }
        return res.status(200).redirect('/studentHome');
      });
    })(req, res, next);
  });
```

- **Testing in Terminal:**

→ So Here is Testing Code for when **user send a get Request to Student Login Page** so if User successfully redirect to that page so this test case will pass and **second test case is for All Valid Credentials** When User enter valid Credentials this test case will pass.

```
const chai = require("chai");
const expect = chai.expect;
const chaiHttp = require("chai-http");
const server = require("../server"); // Your backend server file

chai.use(chaiHttp);

describe("http://localhost:3000", () => {
  describe("GET /studentLogin", () => {
    it("should return a 200 status code", async () => {
      const res = await chai.request(server).get("/studentLogin");
      expect(res).to.have.status(200);
    });
  });

  describe("GET /studentHome", () => {
    it("should return a 200 status code", async () => {
      const res = await chai
        .request(server)
        .post("/studentLogin")
        .send({ email: "nagrechadevarsh@gmail.com", password: "a" });
      expect(res).to.have.status(200);
    });
  });
});
```

→ **Output of Above Test Cases.**

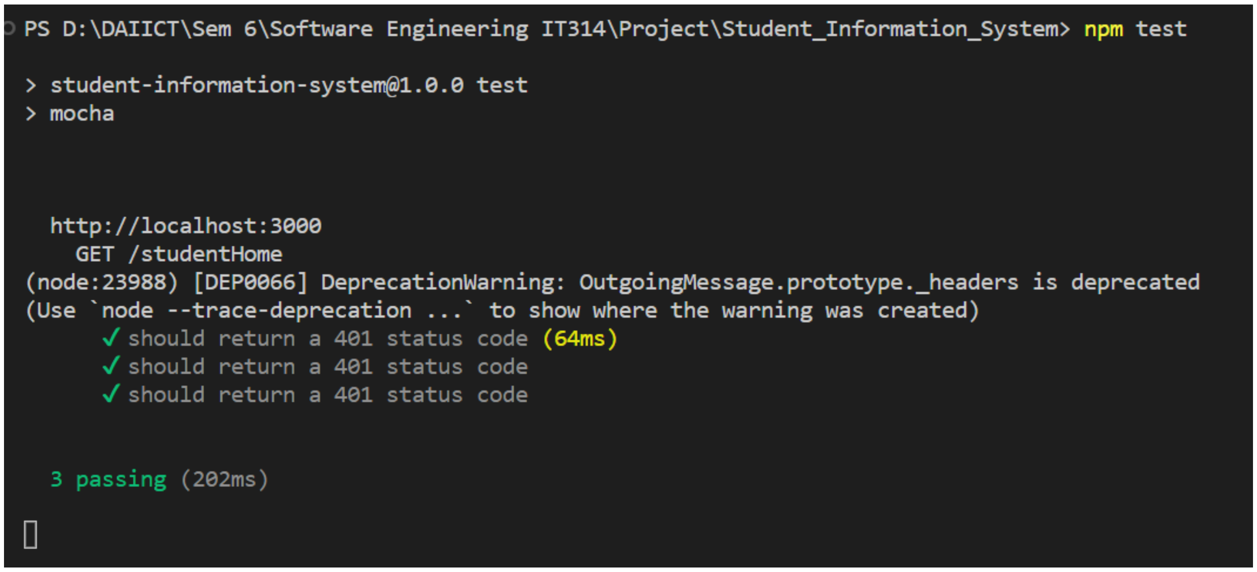


```
PS D:\DAIICT\Sem 6\Software Engineering IT314\Project\Student_Information_System> npm test

> student-information-system@1.0.0 test
> mocha



  http://localhost:3000
    GET /studentLogin
      ✓ should return a 200 status code (61ms)
    GET /studentHome
(node:6640) [DEP0066] DeprecationWarning: OutgoingMessage.prototype._headers is deprecated
(Use `node --trace-deprecation ...` to show where the warning was created)
      ✓ should return a 200 status code


  2 passing (171ms)
```

→ This is the test code for **When User Enters Wrong Password** and When All the **Credentials is null** And **When Entered Email id is not registered** And when **Email is Wrong or password is wrong** and **All the credentials are invalid**.

```
const chai = require("chai");
const expect = chai.expect;
const chaiHttp = require("chai-http");
const server = require("../server"); // Your backend server file

chai.use(chaiHttp);

describe("http://localhost:3000", () => {

  describe("GET /studentHome", () => {

    it("should return a 401 status code", async () => {
      const res = await chai
        .request(server)
        .post("/studentLogin")
        .send({ email: "nagrechadevarsh@gmail.com", password: "1234" });
      expect(res).to.have.status(401);

    });
    it("should return a 401 status code", async () => {
        const res = await chai
          .request(server)
          .post("/studentLogin")
          .send({ email: "nagrechrh@gmail.com", password: "a" });
        expect(res).to.have.status(401);
      });

      it("should return a 401 status code", async () => {
        const res = await chai
          .request(server)
          .post("/studentLogin")
          .send({ email: "", password: "" });
        expect(res).to.have.status(401);
      });
  });
});
```

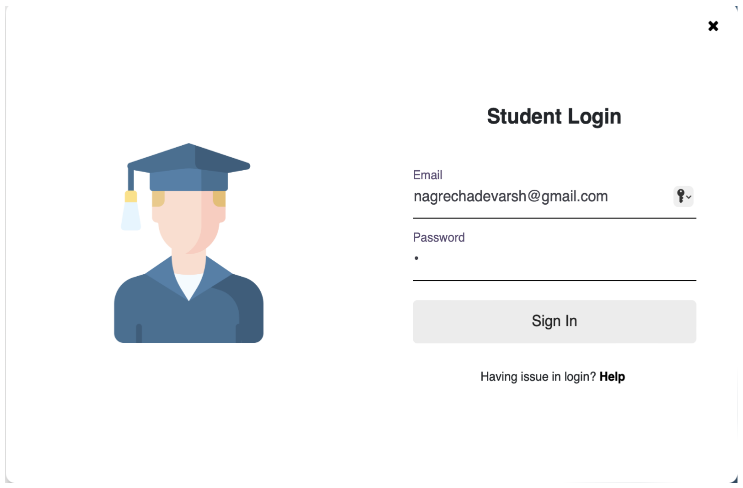
→ **This is Output for Above test Cases.**



```
PS D:\DAIICT\Sem 6\Software Engineering IT314\Project\Student_Information_System> npm test

> student-information-system@1.0.0 test
> mocha



  http://localhost:3000
    GET /studentHome
(node:23988) [DEP0066] DeprecationWarning: OutgoingMessage.prototype._headers is deprecated
(Use `node --trace-deprecation ...` to show where the warning was created)
      ✓ should return a 401 status code (64ms)
      ✓ should return a 401 status code
      ✓ should return a 401 status code


  3 passing (202ms)
```

- **GUI Testing:**

1) With All Valid Credentials

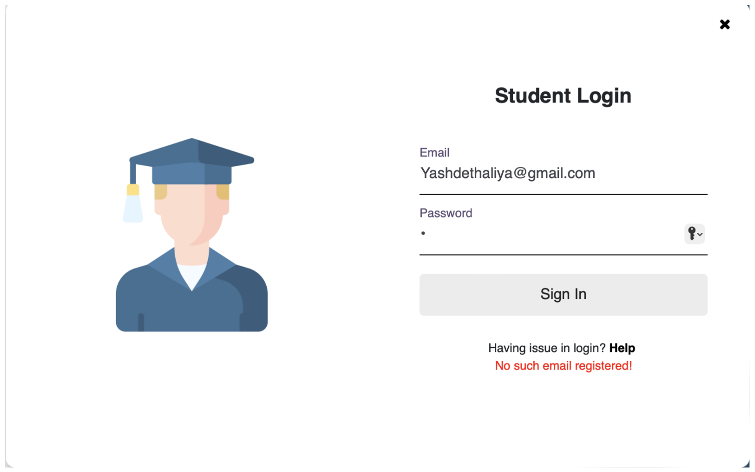

Student Login

Email
nagrechadevarsh@gmail.com

Password
•

Having issue in login? **Help**

2) Enter a Email which is not stored in our Database

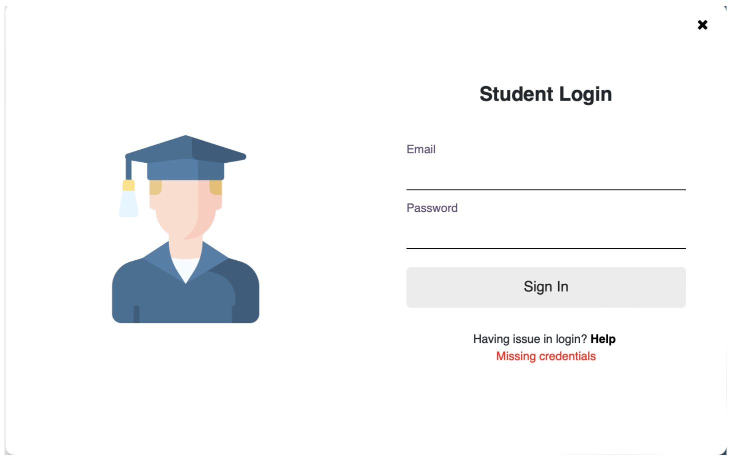

Student Login

Email
Yashdethaliya@gmail.com

Password
•

Having issue in login? **Help**
No such email registered!

3) Null Value in Email

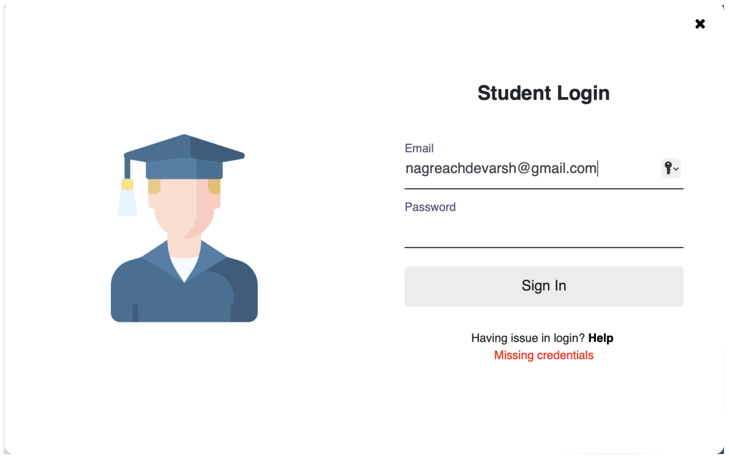

Student Login

Email

Password

Having issue in login? **Help**
Missing credentials

4) Null Value in Password


Student Login

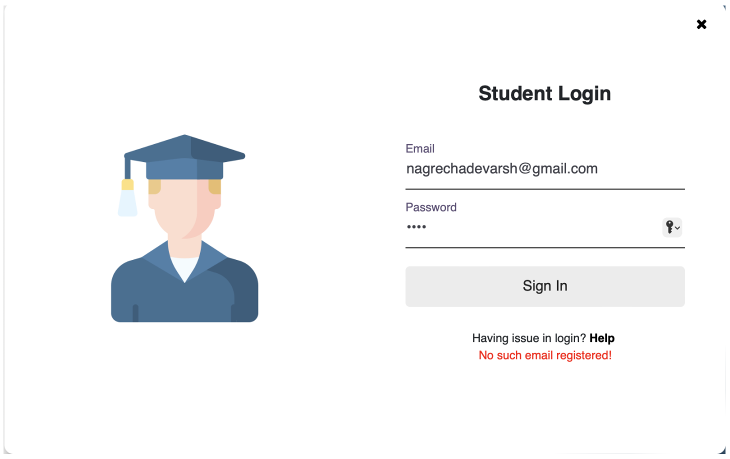
Email
nagreachdevarsh@gmail.com

Password

Sign In

Having issue in login? **Help**
Missing credentials

5) Enter a Email which is store in our database with wrong password


Student Login

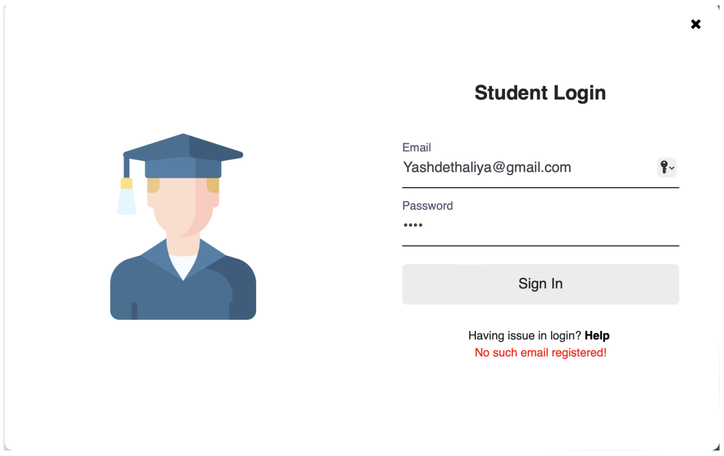
Email
nagrechadevarsh@gmail.com

Password
••••

Sign In

Having issue in login? **Help**
No such email registered!

6) Enter a Invalid Credentials in all fields


Student Login

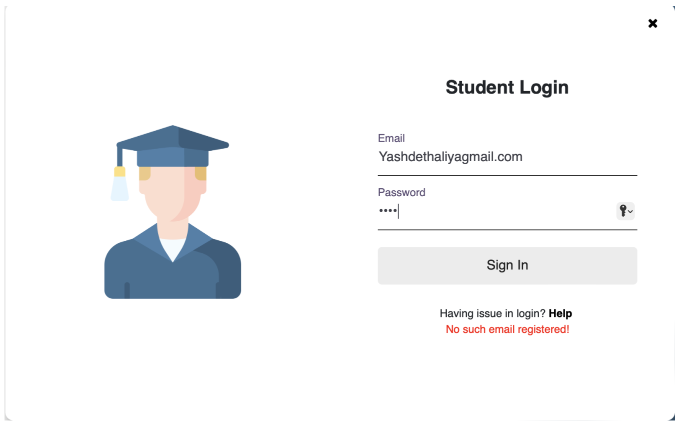
Email
Yashdethaliya@gmail.com

Password
••••

Sign In

Having issue in login? **Help**
No such email registered!

7) Enter a Invalid Email Format.



Student Login

Email
Yashdethaliyagmail.com

Password
••••

Having issue in login? **Help**

No such email registered!