IT-314 Software Engineering

Group: 27 College Programming Club

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Unit Testing Jest:

We have used the jest framework for unit testing in node js. The testing is being performed in node js as the project is being implemented in node js.

1) isValidEmail

Function to check the validation of email

```javascript
// Function to check the validation of email
function isValidEmail(email) {
    //return email.length === 22 && /^[0-9]+@daiict.ac.in+$/.test(email);
    if (
      email.substr(-13, 13) != '@daiict.ac.in' ||
      email[1] != '0' ||
      email[0] != '2' ||
      !(email[4] == '0' || email[4] == '1' || email[4] == '2') ||
      !(
        email[5] == '0' ||
        email[5] == '1' ||
        email[5] == '2' ||
        email[5] == '3'
      ) ||
      email[6] >= '6'
    ) {
      return false;
    }

    return true;
  }
```

Test case for the email validator

```javascript
test('Email is valid for registration', () => {
    expect(isValidEmail('202001265@daiict.ac.in')).toBe(true);
    expect(isValidEmail('202001276@daiict.ac.in')).toBe(true);
    expect(isValidEmail('202001426@daiict.ac.in')).toBe(true);
    expect(isValidEmail('202001267@daiict.ac.in')).toBe(true);
    expect(isValidEmail('202001241@daiict.ac.in')).toBe(true);
```

```
      expect(isValidEmail('202001139@daiict.ac.in')).toBe(true);
      expect(isValidEmail('202001254@daiict.ac.in')).toBe(true);
      expect(isValidEmail('202001266@daiict.ac.in')).toBe(true);
    });

    test('Email is not valid for registration', () => {
      expect(isValidEmail('202001265@gmail.com')).toBe(false);
      expect(isValidEmail('20200@daiict.ac.in')).toBe(false);
      expect(isValidEmail('20200426@daiict.ac.in')).toBe(false);
      expect(isValidEmail('198001267@daiict.ac.in')).toBe(false);
      expect(isValidEmail('002001241@daiict.ac.in')).toBe(false);
      expect(isValidEmail('102001139@daiict.ac.in')).toBe(false);
      expect(isValidEmail('202001254@daiict.in')).toBe(false);
      expect(isValidEmail('202001266@gmail.ac.in')).toBe(false);
    });
```
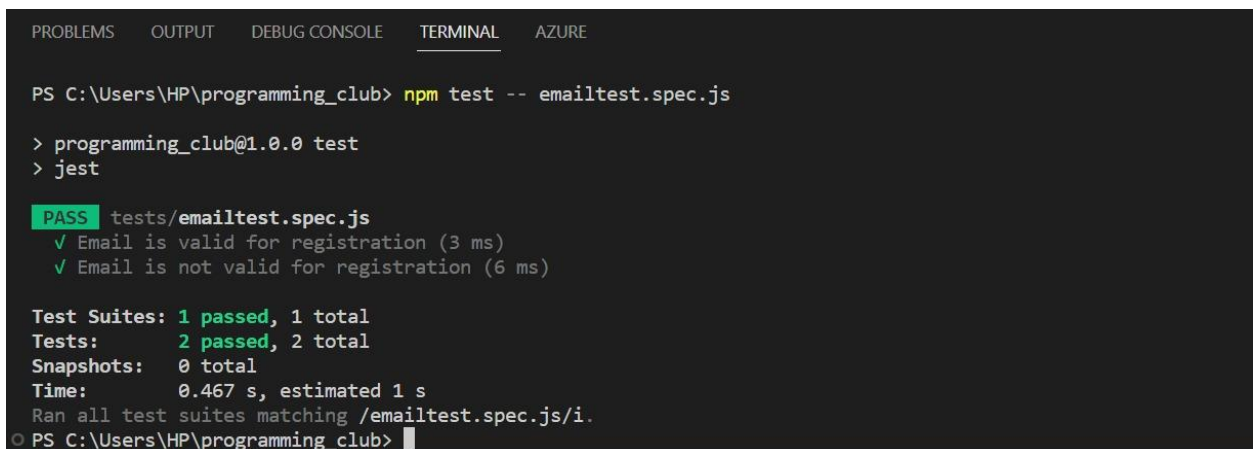
The test suite consists of two test units:

- The first is for valid email which returns true when the email is a valid syntax.
- The second is for invalid email which returns true when the email is an invalid syntax.

Result

```
PROBLEMS    OUTPUT    DEBUG CONSOLE    TERMINAL    AZURE

PS C:\Users\HP\programming_club> npm test -- emailtest.spec.js

> programming_club@1.0.0 test
> jest

 PASS   tests/emailtest.spec.js
  √ Email is valid for registration (3 ms)
  √ Email is not valid for registration (6 ms)

Test Suites: 1 passed, 1 total
Tests:       2 passed, 2 total
Snapshots:   0 total
Time:        0.467 s, estimated 1 s
Ran all test suites matching /emailtest.spec.js/i.
PS C:\Users\HP\programming_club>
```

We can observe that both the test cases gets passed successfully

2) GET welcome page URL and POST event registration

Test case

```javascript
const request = require('supertest');

const baseURL = 'http://localhost:5000';

describe('GET /', () => {
  test('should return status 200 for welcome page', async () => {
    const res = await request(baseURL).get('/');
    expect(res.status).toEqual(200);
  });
});

describe('POST /', () => {
  test('should return status 302 for event registration successfully and
refresh page', async () => {
    const req = {
      body: {
        event_id: '643bb200689344b247c114c2',
        user_id: '643d00e982ae64d1eeb5b2ad',
      },
    };
    const res = await request(baseURL).get('/event');
    expect(res.status).toEqual(302);
  });
});
```

The test suite consists of two unit tests:
- The First is for GET baseURL, which will return the status code 200 for the welcome page.
- The second is for POST event registration, which will return status code 302 for successful event registration and will refresh the page.

Result

```
PROBLEMS    OUTPUT    DEBUG CONSOLE    TERMINAL    AZURE

PS C:\Users\HP\programming_club> npm test -- auth.spec.js

> programming_club@1.0.0 test
> jest

 PASS  tests/auth.spec.js
  GET /
    √ should return status 200 for welcome page (35 ms)
  POST /
    √ should return status 302 for event registration successfully and refreash page (9 ms)

Test Suites: 1 passed, 1 total
Tests:       2 passed, 2 total
Snapshots:   0 total
Time:        0.619 s, estimated 1 s
Ran all test suites matching /auth.spec.js/i.
PS C:\Users\HP\programming_club>
```

We can observe that both the test cases gets passed successfully