SW Engineering CSC648/848 Spring 2021

PipeWave

"The Fast-Track from Student to Professional"

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Section 02, Team 04

Milestone 4-- 04/19/2021

History Table (Revision Summary):

04/19/2021: Document created

05/01/2021: Add new code review and P1 list

1. Functional Requirements

Priority 1-

1. *All users* from sfsu or companies shall be able to register and create accounts on the website
2. *All users* shall be able to update their profile information
3. *All users* shall be able to view other's profiles
4. *Students* shall be able to upload resumes to their profile in a pdf format
5. *Students* shall be able to enter any demographics to customize their profile
6. *Industry Professionals* shall be able to search for new graduates or students by major and demographics
7. *Industry Professionals* shall be able to register and get alerts for matching student or new graduate profiles
8. *Industry Professionals* shall be able to leave recommendations on students or graduates
9. *Professors* shall be able to rate students on a scale from 1-5
10. *Professors* shall be able to enter recommendations/reviews for students

1) Product Summary

Pipewave

- Diverse signup form depending on occupation
- Professors able to rate a student based on their talents
- Users of industry occupation are granted Alerts
- Customize and edit profile for:
    - Students
    - Professors
    - Industry individuals

Our product includes a unique feature that allows industry users and professors to filter their search results of students' cultural backgrounds and identity. This grants more opportunity for people of cultural backgrounds or unique identities to be widely represented within the workspace of a company. While our regular search function returns results that match to what keywords you enter, the advanced search with selectable filters provides more depth to what cultural background, identity, and major you are looking for.

URL: 35.235.77.107

2) Usability test plan

Test Objectives:

For this usability test plan, we are assessing our search function to verify it's working correctly and showcase our unique feature of our filters provided on our website. Since our website is focused on allowing professors or industry professionals to search for talents and possible recruits for their company, it's imperative that our search function works without a hitch to attract more attention to potential students and our site. Although the filters in the advanced search may be an optional alternative to utilize the search feature, it's still an important task of having this feature work correctly to guarantee to bring up the appropriate students they are interested in and leave a good impression of our unique feature provided on our site.

- Test Background and Setup:

For the tester to have the appropriate setup to execute the test plan, they must first have Node installed to their machine. The tester must then git clone our project code to their machine to prepare testing it. Using whatever IDE they have already installed or available to them, open the cloned project folder and use the terminal to cd into applications. Once they enter this directory, they execute npm install to retrieve the dependencies where they can finally execute nodemon to launch the server.

To begin the test, we place the tester's starting point at the homepage where all the registered users are displayed. This position is where all users are greeted when launching our site, so running tests at this point should yield more accurate results to how users would theoretically handle and navigate the website.

Regarding testing these particular functions, our intended users to complete the tasks provided would be professors and/or industry professionals. Since students are responsible for making their profile and portfolio appealing as well as choosing to share any additional details like their identity and background, our intended users are the ones who primarily will utilize our search and filter features.

The tester is to enter the URL localhost:3000 upon activating our server to be directed to our website.

What we will be measuring from the results of these tests are how effective our search function is in returning the appropriate results to the user, the tester's level of satisfaction towards how well the site handled the tasks given, and how the tester responds to the Lickert questionnaire regarding the testing.

- Usability Task Description:
    1. Search for Computer Science majors
    2. Search for users named "Robert"
    3. Apply filters to your advanced search
    4. Search for invalid characters

    To measure effectiveness, we would check the average of accurate search results returned to the tester's search queries. To do this, we verify how many results should be returned to a search query and compare to the output results. To measure efficiency, we determine the average time it takes from having all the tasks completed. This is reliant on how fast our site can pull up the results to the tester's search query and return it to them.

- Lickert Subjective Test:

The search feature delivered me the results quickly.
____ Strongly Agree
____ Agree
____ Neutral
____ Disagree
____ Strongly Disagree

The advanced search filters are a helpful alternative to my search queries.
____ Strongly Agree
____ Agree
____ Neutral
____ Disagree
____ Strongly Disagree

My search results that were returned to me were what I was looking for.

____ Strongly Agree
____ Agree
____ Neutral
____ Disagree
____ Strongly Disagree

3) QA test plan

QA Test Plan

Test Objectives:

For the QA Test objectives, we will be looking for bugs and errors when applying the search filter, how the search filter results show results in correct order, and for all the information to show up. We will be making sure the website performs the search results within the given specs. When given very specific tasks to the user, the website must be tested to show all the search results related to the search entry and filters. Test will report PASS or FAIL. We will be checking the SE process and documentation.

HW and SW Setup(Including URL):

The user will begin by turning on the PC. They will then start their browser (chrome, safari, firefox) that is supported. They will enter in the URL 35.235.77.107 into the address bar. From there the user will type the desired entry into the search bar located in the upper half side of the screen. The user will click on the button ‘advanced’ and click on the bubbles alongside the categories in order to filter the results. The user may then click on the ‘search’ button.

Features to be tested:

- Major Search Results
- Name Search Results
- Filter Success
- Invalid Character Search Results

QA Test Plan: - table format:

Safari

Test #	Test Title	Test Description	Test Input	Expected Correct Output	Test Results
1	Name Search + Major	Test for name field	“Robert”, “Computer Science” Selected	Display all “Robert” users or names containing “Robert” from Database.	FAIL
2	Filter	Test for advanced filter	“asdf”, Male Selected	Display all “asdf” users in the database that are male	FAIL
3	Invalid Characters	Test to see error handling for invalid characters	“!@#”	Return to home page	PASS

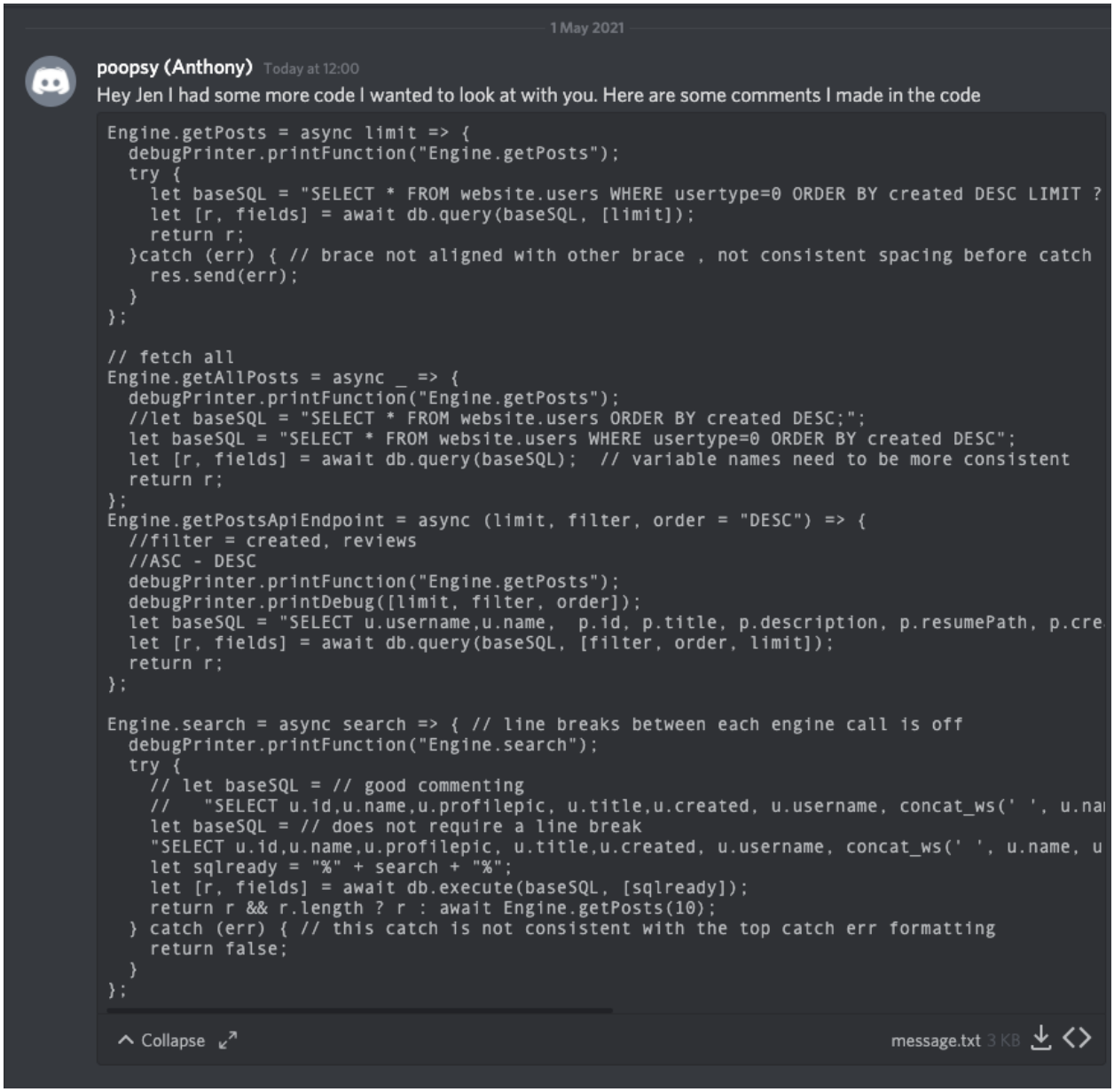
Chrome

Test #	Test Title	Test Description	Test Input	Expected Correct Output	Test Results
1	Name Search + Major	Test for name field	“Robert”, “Computer Science” Selected	Display all “Robert” users or names containing “Robert” from Database.	FAIL
2	Filter	Test for advanced filter	“asdf”, Male Selected	Display all “asdf” users in the database that are male	FAIL
3	Invalid Characters	Test to see error handling for invalid characters	“!@#”	Return to home page	PASS

4) Code Review

A. The style coding practices we used consisted of several things. First we declared all the variables in the beginning of the class. The variable declarations are separated by spaces except the parenthesis, quotation, and semicolons. Every function implementation has the parenthesis on the same line, as well as the if statements. After every comma, is a new line. Tabs are used to indent further between a function and objects.

B. Please note: This correspondence was easier to achieve through use of the team's private Discord channel, as emails tend to be too slow and inefficient for us.



1 May 2021

poopsy (Anthony) Today at 12:00

Hey Jen I had some more code I wanted to look at with you. Here are some comments I made in the code

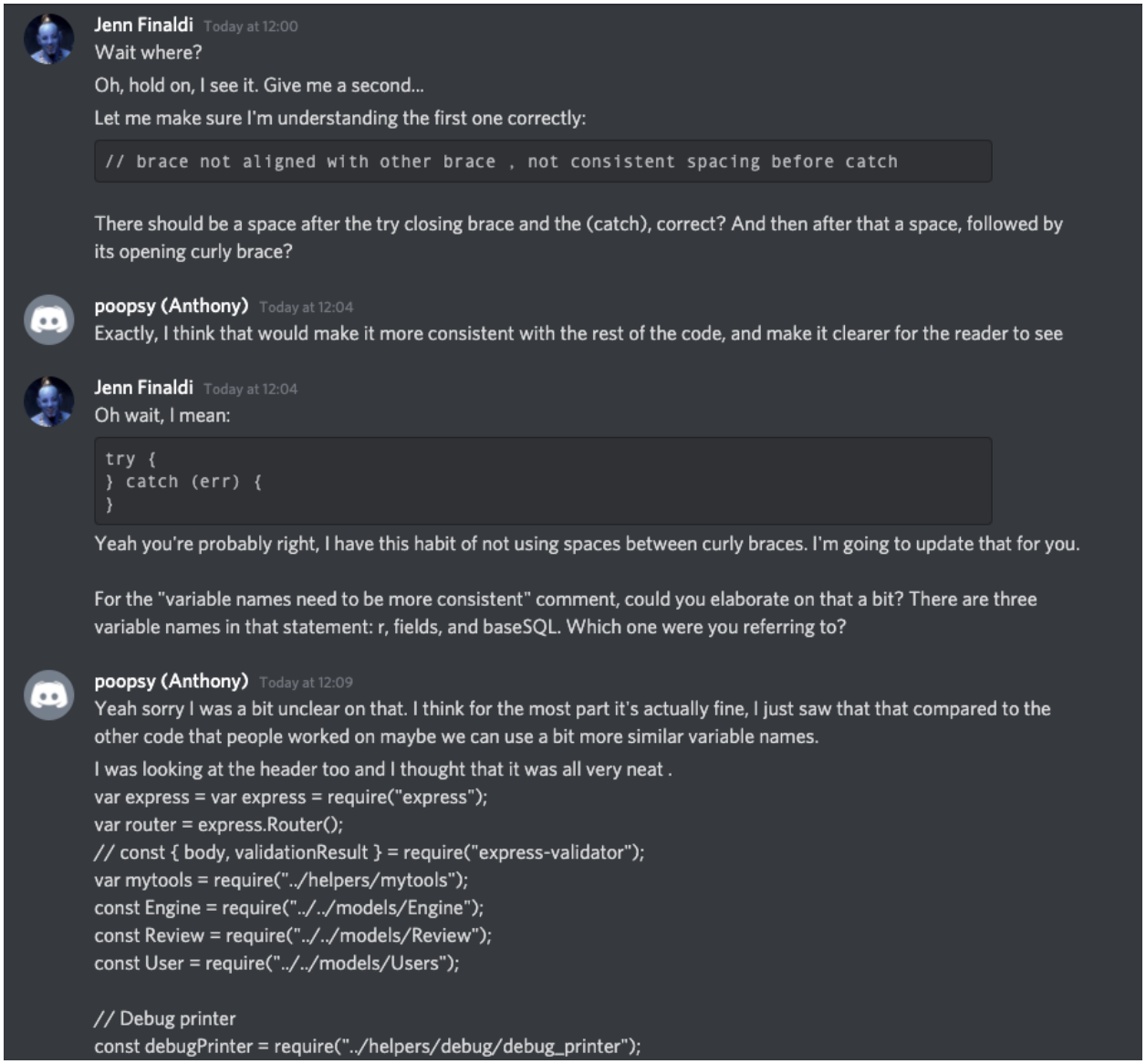
```
Engine.getPosts = async limit => {
  debugPrinter.printFunction("Engine.getPosts");
  try {
    let baseSQL = "SELECT * FROM website.users WHERE usertype=0 ORDER BY created DESC LIMIT ?
    let [r, fields] = await db.query(baseSQL, [limit]);
    return r;
  }catch (err) { // brace not aligned with other brace , not consistent spacing before catch
    res.send(err);
  }
};

// fetch all
Engine.getAllPosts = async _ => {
  debugPrinter.printFunction("Engine.getPosts");
  //let baseSQL = "SELECT * FROM website.users ORDER BY created DESC;";
  let baseSQL = "SELECT * FROM website.users WHERE usertype=0 ORDER BY created DESC";
  let [r, fields] = await db.query(baseSQL);  // variable names need to be more consistent
  return r;
};
Engine.getPostsApiEndpoint = async (limit, filter, order = "DESC") => {
  //filter = created, reviews
  //ASC - DESC
  debugPrinter.printFunction("Engine.getPosts");
  debugPrinter.printDebug([limit, filter, order]);
  let baseSQL = "SELECT u.username,u.name,  p.id, p.title, p.description, p.resumePath, p.cre
  let [r, fields] = await db.query(baseSQL, [filter, order, limit]);
  return r;
};

Engine.search = async search => { // line breaks between each engine call is off
  debugPrinter.printFunction("Engine.search");
  try {
    // let baseSQL = // good commenting
    //   "SELECT u.id,u.name,u.profilepic, u.title,u.created, u.username, concat_ws(' ', u.na
    let baseSQL = // does not require a line break
    "SELECT u.id,u.name,u.profilepic, u.title,u.created, u.username, concat_ws(' ', u.name, u
    let sqlready = "%" + search + "%";
    let [r, fields] = await db.execute(baseSQL, [sqlready]);
    return r && r.length ? r : await Engine.getPosts(10);
  } catch (err) { // this catch is not consistent with the top catch err formatting
    return false;
  }
};
```

Collapse

message.txt 3 KB


Jenn Finaldi Today at 12:00
Wait where?
Oh, hold on, I see it. Give me a second...
Let me make sure I'm understanding the first one correctly:
// brace not aligned with other brace , not consistent spacing before catch
There should be a space after the try closing brace and the (catch), correct? And then after that a space, followed by its opening curly brace?
poopsy (Anthony) Today at 12:04
Exactly, I think that would make it more consistent with the rest of the code, and make it clearer for the reader to see
Jenn Finaldi Today at 12:04
Oh wait, I mean:
try {
} catch (err) {
}
Yeah you're probably right, I have this habit of not using spaces between curly braces. I'm going to update that for you.
For the "variable names need to be more consistent" comment, could you elaborate on that a bit? There are three variable names in that statement: r, fields, and baseSQL. Which one were you referring to?
poopsy (Anthony) Today at 12:09
Yeah sorry I was a bit unclear on that. I think for the most part it's actually fine, I just saw that that compared to the other code that people worked on maybe we can use a bit more similar variable names.
I was looking at the header too and I thought that it was all very neat .
var express = var express = require("express");
var router = express.Router();
// const { body, validationResult } = require("express-validator");
var mytools = require("../helpers/mytools");
const Engine = require("../../models/Engine");
const Review = require("../../models/Review");
const User = require("../../models/Users");
// Debug printer
const debugPrinter = require("../helpers/debug/debug_printer");

// Get Home

All the code looks very clear, line breaks are used when necessary, and there are a lot of comments within all the headers that I see in the code

Jenn Finaldi Today at 12:12

Yay! Ok yeah this makes sense. And between the Engine functions, yes some don't have spaces in between the definitions and I noticed that and fixed it already but haven't pushed those changes yet.

poopsy (Anthony) Today at 12:13

Okay great. Those were the only edits I wanted to clarify on at the moment. I'll let you know if I see anything else I think needs attention. Thanks Jen

Jenn Finaldi Today at 12:14

Here I fixed some things. On line 56 you commented how the err in the catch block was handled differently. In the event the function needs to return a true or false, we will put false in the catch block but perhaps we can also throw in a res.send(err) statement as well, provided it won't break any of the functionality. How does that sound?

Looking at this code has also alerted me to the incorrectness of our debugPrinter arguments so I'm going to fix those as well

Jenn Finaldi Today at 12:18

Ok I'll have a look at all of that and have some changes pushed by late afternoon. Thank you for the input!

poopsy (Anthony) Today at 12:18

Thank you!

5) Self-check on best practices for security

- Database of registered users' information
    - The database belongs to a cloud server, and in order to access it, you require a ppk private key
- Database of sessions
    - Similar to the database for users, the database that holds a user's current session to our website is secured behind requiring the ppk private key
- Validating incoming data towards the backend
    - Search bar, we validate data to make sure no sql queries are escaped by certain characters which would allow for malicious code injections.
- Root access to cloud server
    - The team members are using an alternative account with limited permissions to access the server to keep root access disabled
- Authentication
    - From the registered users created and stored in our database, users must authenticate that they are a registered user when signing in

Password Encryption in DB:

5	coolbeans2	Not Robert Cacho	coolbeans2@gmail.com	$2b$15$0s2poKtA/dez0a.vx/Z/OupuIaRU8aue...
6	coolbeans4	Cooler McGee	coolbeans4@gmail.com	$2b$15$6OLDaj1dOljyC4lXkKFQy.Ux/OMRvw1t...
7	coolbeans5	Richard Hendricks	coolbeans5@gmail.com	$2b$15$fMKJU/iE7PlThWVGextBbOzd9Z9VefaP...
8	coolbeans6	Barack Obama	coolbeans6@gmail.com	$2b$15$Mta87XpuWjljER0Q4QTzb.MjVGHCe/bP...

To validate our data we are using front-end javascript along with backend javascript. We are using two forms since only using the front end validation wouldn't be enough, since programs like curl or postman can easily send data to our backend without any interaction with our frontend. In our backend we make sure the limit length is 40 characters as long with it all being alpha-numeric. This sort of validation is implemented in our search bar, our registration and login also has validation.

6) Self-check: Adherence to original Non-functional specs

1. Application shall be developed, tested and deployed using tools and servers approved by Class CTO and as agreed in M0 (some may be provided in the class, some may be chosen by the student team but all tools and servers have to be approved by class CTO).

ON TRACK

2. Application shall be optimized for standard desktop/laptop browsers e.g. must render correctly on the two latest versions of two major browsers

ON TRACK, as of right now this is true

3. Selected application functions must render well on mobile devices

ISSUE, there is currently no plans to port this application to mobile devices at this time.

4. Data shall be stored in the team's chosen database technology on the team's deployment server.

DONE

5. No more than 100 concurrent users shall be accessing the application at any time

DONE

6. Privacy of users shall be protected, and all privacy policies will be appropriately communicated to the users.

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7. The language used shall be English.

DONE

8. Application shall be very easy to use and intuitive.

ON TRACK

9. Google maps and analytics shall be added

ISSUE, not sure the team has time to implement this, nor are we clear on why this application would require maps.

10. No e-mail clients shall be allowed. You shall use webmail.

ISSUE, while we aren't using e-mail clients, our webmail aka in site messaging feature is a P2 that may not get completed.

11. Pay functionality, if any (e.g. paying for goods and services) shall not be implemented nor simulated in UI.

DONE, we are not implementing any payment features at this time

12. Site security: basic best practices shall be applied (as covered in the class)

ON TRACK

13. Modern SE processes and practices shall be used as specified in the class, including collaborative and continuous SW development

ON TRACK

14. The website shall prominently display the following exact text on all pages "SFSU Software Engineering Project CSC 648-848, Spring 2021. For Demonstration Only” at the top of the WWW page. (Important so not to confuse this with a real application).

ON TRACK