CEN 4010 PRINCIPLES OF SOFTWARE ENGINEERING
GROUP 22 - SPRING 2023
MILESTONE 1 PROJECT PROPOSAL AND HIGH-LEVEL DESCRIPTION
TEAM FAEIM

Members

Angelina Biafore - Team Leader, Scrum Master
abiafore2020@fau.edu
Max Rothman - Product Owner
mrothman2019@fau.edu
Ines Neves - Development Team
ineves2020@fau.edu
Fonsi Avila - Development Team
avilaa2021@fau.edu
Elias Fatta - Development Team
efatta2019@fau.edu

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History Table

Date	Instructor Feedback	Revisions
03/03/2023		

MILESTONE 1

1. Executive Summary

The goal of this website is to describe the different majors within the engineering field. The website will also include the possible careers that align with each speciality, along with a list of companies that work with each described major. The proposed website will target universities and students with the objective of offering guidance with career paths and professions. The name of the project will be The Integrator, as it will help to integrate students into the workforce.

2. Competitive Analysis

There are a couple of websites that focus on the types of engineering majors, like CollegeVine and DeVry University. While these websites describe many engineering majors, they do not include specific career paths or company examples.

DeVry University	**CollegeVine**	**The Integrator**
Basic description of what engineering is	Gives background as to what engineering is, broad course requirements, level of difficulty, and salary for each	Gives background information, introduction, benefits, expected salary range, and specific descriptions.
Vague description of each major	Gives a general category and examples of majors without explaining each one	Includes all types of engineering majors, with detailed descriptions for each
Mentions only six types of engineering majors	Mentions the most popular types of engineering majors	Describes the most common, as well as least common majors
Does not specify professions	Does not specify professions	Includes career & company possibilities for each

The advantages of The Integrator will be how specific and detailed it will be. A lot of college guidance websites are vague, leave students with questions, and only scratch the surface of what engineering is and what it means. The Integrator will go deeper and explore beyond the obvious so students can have more exposure to the amount of opportunities engineering can actually offer. It will include majors that are not common, thorough descriptions, expected salary ranges, companies, and possible careers.

References used:
Engineering | DeVry University
60 Types of Engineering Majors: Which is Best for You? | CollegeVine Blog

3. Data Definition

USER INTERFACE SECTION
Central - the main homepage
Branch - a split off page, specifically about a subtopic
Leaf - a subtopic being written about
Gen-ed Seeds - the general/supporting information about a subtopic
Start-up Seeds - the information about careers and internships of a subtopic
Corporate Seeds - the information about companies that do work in that subtopic
Gardeners - Collaborators / team members

4. Overview, Scenarios and Use Case

As mentioned in previous sections, the main idea for this project is to have a website that displays the different kinds of engineering majors that exist and the possible career paths that align with each specific major, without forgetting to include several companies that utilize a specific career.
As an overview of what the product must include, there will be the main website where the different engineering majors would be shown. Then, the website would also have a page that showcases the different career paths for each of the majors. Besides that, there would also have to be a page for each career path where there would be a brief description of the responsibilities that an individual fulfilling that role would normally have in a professional atmosphere. Some additional information about that specific career path could also be included there, such as average salaries, how much is the profession needed right now and projections for the future, etc. In this same page underneath these descriptions and details there should be a list of companies, ranging from large and known enterprises to medium and small-sized companies, that work with individuals in that specific career path. The name of each company would be in a hyperlink that could take the users to the company's main website. An option that could also be included for the companies is to have a dropdown arrow that when clicked, it would show more information about the company, such as a brief description and the main goals or the mission statement of the enterprise, along with a way in which to contact them like an email address or a phone number for those interested in working for that specific business.

Some of the main scenarios or use cases that the website could have would include students as the main actors, or users. On one hand, they could be students that just graduated from college or are about to graduate with a certain engineering degree and want to see where or in what areas they can apply their degree to in case they are not aware and maybe even contact a company to see if they can get an interview for a specific position. On the other hand, they could be students that are currently in college deciding what field they would like to major in and want to see where they could apply their specific major of interest and what are the current job offers for the different career paths under that specific major. Obviously, in this case the students would have to be interested in an engineering major. From a user perspective, they would go to the main website and there they would see a list of the different engineering majors that they could choose to be a part of. Once they click on the major that interests them, the page would load new information and they would then see a list of the different career paths that they would be able to take if they chose that major. The user would then click on a career path and the page would again load new information for them to see a description of the career path. From that description and the details included there, some of which were stated earlier, the user should be able to tell whether or not they would be interested in working for a company under that specific occupation. After scrolling down, the user would see a list of companies that have positions for individuals in that specific career path. The user could click on the name of the company to be taken to their main website and learn more about that specific company or they could select the drop down arrow to the side of the company name in order to get a few details about them, such as a brief description and their mission statement. They would also find the company's phone number and email address that they could use to potentially contact that company to see if they are offering any positions at the moment.

5. Initial List of High-Level Functional Requirements

1) Site will have a main page containing the list of all engineering majors that the user can choose from. Each of these majors in the list will contain a link to the page of the given major.
2) Each major page will contain a list of possible career paths for the given major, and each of these career paths in the list will contain a link to the given career path page.
3) Each career path page will contain a brief description of the responsibilities of said career path, as well as some additional information about average salaries, demand for the career, and projections for the future. The page will also include a list of companies who employ said career path, with information on the company as well as a link to the company's website for further reading.
4) Site should have a header that allows the user to return to the home page by clicking on it, and a list of other navigation links.

6. List of Non-Functional Requirements

1.) Performance - how fast the system responds to user input. Processing speed. For this project, an average response time of 1.3 seconds and an average page load time of 3 seconds is the goal - both marks considered to be average by Google. 2.) Usability - how easy it is to use the system. User should have minimal issues in navigating the interface. 3.) Portability - how well it can run on multiple platforms. The website must be able to run sufficiently well on multiple devices, both newer and older versions. 4.) Security measures like account creation and passwords won't be needed with this site, but measures such as only linking reliable sites/companies that won't compromise user data will be necessary to ensure safety. 5.) Availability. The site should achieve an uptime of 99.9%, considered to be the industry standard.

7. High-Level System Architecture

The languages we intend to use to develop this project are html, css, and javascript. We intend to also utilize the bootstrap framework for the site. We intend for this site to work on all major browsers I.e. chrome, firefox, opera, safari, edge.

8. Team

Team FAEIM:
Angelina Biafore - Team Leader and Scrum master.
Max Rothman - Product owner/Github master.
Ines Neves - Development Team.
Fonsi Avila - Development Team.
Elias Fatta - Development Team.

9. Checklist

a) Team decided on basic means of communications - **DONE.**
b) Team found a time slot to meet outside of the class - **DONE.**
c) Front and back end team leads chosen - **DONE.**
d) Github master chosen - **DONE.**
e) Team ready and able to use the chosen back and front-end frameworks - **DONE.**
f) Skills of each team member defined and known to all - **DONE.**
g) Team lead ensured that all team members read the final M1 and agree/understand it before submission - **DONE.**