Requirements documentation for C-GPT project

G24

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Version history

- Version 0.1 Added chapter 1.2 / Kai 28.9.2023
- Version 0.2 Added Chapter 2.1 / Fizra 28.9.2023
- Version 0.3 Added Users and purpose of use / Hermanni 28.9.2023
- Version 0.4 Added chapter 2.2 / My 28.9.2023
- Version 0.5 Transcription of PESTLE / Hermanni 1.10.2023
- Version 0.6 Added PESTLE E&E / Kai 5.10.2023
- Version 0.7 Added PESTLE Social / Fizra 6.10.2023
- Version 0.8 Added Stakeholder analysis / Hermanni 7.10.2023
- Version 0.9 Added Chapter 1.1 / Kai 8.10.2023
- Version 0.10 Added Entity diagram / Hermanni 15.10.2023
- Version 0.11 Added chapter 2.6 / My 20.10.2023
- Version 0.12 Added Requirements / Fizra 27.10.2023
- Version 0.13 Added Navigation Diagram / Fizra 16.11.2023
- Version 1.1 Added Use case diagram / Team 10.10.2023
- Version 1.2 Added ideas for further development / Hermanni 16.11
- Version 1.3 Added restriction requirement / Kai 17.11.2023
- Version 1.4 Added 5 accessibility features to requirements / Kai 17.11.2023
- Version 1.5 Added accessibility recommendations chapter / Kai 17.11.2023
- Version 1.6 Added description of a non-functional requirement / Hermanni 17.11.2023
- Version 1.7 Added description of a functional requirement / Fizra 22.11.2023
- Version 1.8 Added Chapter 3.3 / Fizra 22.11.2023
- Version 1.9 Added User Interface / My Hoang 29.11.2023
- Version 2.0 Finishing touches / Team 3.12.2023

1. Introduction

1.1 Contents and purpose of this document

The following document contains the preliminary planning for the Clear GraduationPathTailor (C-GPT) project. The planning will be conducted by the consultant company Sisukkaampi in conjunction with Tampester University. Collaboration will also be done with AI LLC, who will be supplying the AI powering our system. The purpose of this document is to document the planning process as well as give explanations to specific choices made during the project along with an assessment over the viability of the project.

1.2 Product, scope and environment

Our company, Sisukkaampi, has been tasked with assisting the creation of a new product, Clear GraduationPathTailor (C-GPT). Our role is making the feasibility analysis as well as plan and execute requirements gathering. The purpose of C-GPT is to replace the existing Unclear GraduationPathTailor in helping students graduate. This will be accomplished by streamlining course selection for bachelor's level students by creating a platform from where students can create a course roadmap based on the jobs that interest them.

This roadmap will be created with the information universities provide about their courses and job requirements posted by companies. The course information will be supplied by the universities themselves through a universal interface. The job requirements will be gathered through the JobHunters.com API. As information will be abundant, data sorting will be extremely important. Therefore, the project will be done in conjunction with AI LLC who will supply an AI that will sort jobs and courses based on keywords and requirements. This way students can be shown the most up to date information on what the industry sees as important.

The platform will be an android and iOS friendly web-based application that works on Chrome, Firefox and Safari. This guarantees that all students will be able to access the information. Users will be required to create profiles into which they will enter information such as their major and university. The platform should be able to create a course roadmap for them based on job titles that interest them and format that information into a visual or text-based representation. Out of the two, the text-based representation should be downloadable. Finally, the platform will save the student's past 15 searches to make comparing easier.

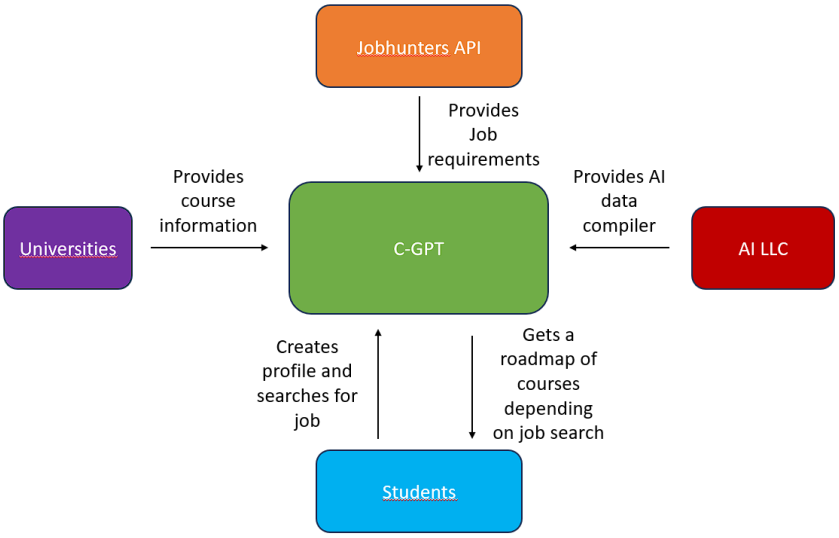


Figure 1 *C-GPT, connected stakeholders and systems.*

1.3 Users and purpose of use

The software is designed to bridge the gap between academia and the job market, ensuring that students can plan their studies effectively to achieve their desired career goals. To make this tool effective and beneficial for the university community, a clear understanding of its users and their roles is vital.

1. Students

Primary Users

Students form the core user base of the software.

Purpose: To receive an optimized study path aligned with their future career aspirations. By entering their desired job profiles, the software scans data from various job announcement websites and university course offerings, generating a tailor-made academic trajectory.

Environment: Typically accessed via personal laptops, mobile devices, or university computer labs.

Frequency: Especially active during course registration windows.

Skills & Training: Basic computer literacy is sufficient, given the software's intuitive design.

2. Career Advisors

Supportive Users

While the software is largely autonomous, career advisors can use it to provide additional guidance to students who seek human advice.

Purpose: Assist students by leveraging the software to supplement their own counseling.

Environment: Primarily in professional office settings with desktop computers.

Skills & Training: A brief orientation to the software is recommended, paired with their background in career planning.

3. Sisukkaampi Administrators

Backend Operators

Employees of Sisukkaampi, the company behind the software, responsible for its smooth operation.

Purpose: Oversee system management, which includes data updates, user support, and system maintenance.

Environment: Corporate office with access to servers and databases vital for software functioning.

Skills & Training: Advanced training in system administration, data integrity, and user support.

System Details

Administrative Access: Varies by user role, with Sisukkaampi Administrators having full privileges, and students having end-user access.

System Type: Multiuser, allowing different levels of access and functionality depending on user roles.

User Interface Languages: Finnish as the primary language, but also supports English and Swedish.

This streamlined structure serves to clearly delineate the roles, purposes, and characteristics of each user group, ensuring the software meets the unique needs of each segment.

1.4. Terms, definitions and abbreviations

CGPT	Clear graduation path tailor
iOS	iPhone OS
AI LLC	AuthenticIntelligence Limited liability company
WCAG	Web content accessibility guidelines
ID	Identifier
OAuth	Open authorization
HAKA	User identification system
GDPR	General data protection regulation
PESTLE	Political, Economic, Social, Technology, Environmental
F	Functional requirement
NF	Non-functional requirement
R	Restrictive requirement
CP	Content production requirement
M	Maintenance requirement
API	Application Programming Interface

2. Requirements gathering plan

2.1. Background and current situation

Current practices of curating a study path to graduate and planning a career based on your interest can become daunting for a soon to be graduate student. Some ongoing practices include taking advice from guidance counsellors which might take long meetings and sessions. These advices are usually generalized and does not give any concrete or tailored pathway to the student. Another way that students usually resort to is reading up on stacks of study and career guides. These guides only add to the student's confusion and take up a lot of time. This might result in students switching between different courses and learning through trial and error. Furthermore, the current system of certain universities is not ideal to search for a particular set of courses in a long list of all disciplines and courses available.

The problems associated with these practices are; students end up making uninformed decisions, taking courses that do not align with their interests, and having untimely graduation. Furthermore, the overwhelming terror that creeps into their lives due to uncertainty affects their mental and physical health. On the other hand, markets do not get competitive and qualified people, and not producing enough workforce of skilled people timely would affect the economic situation of the country.

C-GPT is an artificial intelligence-based service that aims to make students' career path and planning easier and mitigate the risk of long periods of graduation. This application would let students choose a job or profession that they would like to work in and illustrate all the courses, degrees, course pre-requisites, universities that offer those courses/degrees, and university ranking all in one place. They can perform this task for any field and discipline for any number of times. This will give them a clear picture of what they will end up studying, if they choose the selected job or profession and make a decision if the course work aligns with their interests or not. In this way, a clear, specific and tailored career path would be generated for a student which they can explore further until they are satisfied. This practice would reduce time spent, energy and mental pressure in finding an optimal career path for oneself.

Although C-GPT has a competitive advantage over other practices and similar products or services on the market that only provide generalized methods of study plan, it comes with its own limitations. The technology, i.e., artificial intelligence that will be built, would be sensitive to keywords. If the keywords are fed into the application are not accurate or specific, it would not generate an optimal path that could result in misinformation. Moreover, it does not necessarily replace the guidance required from counsellors but would definitely supplement and optimize it. Another broader limitation is that students would not be encouraged to experiment with courses and an optimal path for every student could homogenize a certain market.

2.2. Analyzing current documentation and similar products

The documentation that is currently available about the project is an email from the project coordinator. The documentation is created when representatives from the multi-university collaboration board received messages from ministry of education, representatives from the multi-university collaboration board had a meeting with AI LLC's representatives, they reached decision, and the project coordinator sent an email to consultant to write the requirement for the product.

The documentation gave us key information about the customer. Our customers are Finnish universities, the Ministry of Education, and the AI company. Our customers need our service because they desire more timely graduation for their students and to solve the problem of not achieving timely graduation for the students.

The documentation gave us key information about the service. The goal of the service is to help students compare and visualize optimal study paths aimed at specific professions. It provides students with a clear course selection path depending on the type of job opportunities they wish to pursue, leading to timely graduation. It replaces the previously used Unclear GraduationPathTailor, which was based on stacks of study guides and long meetings with study counselors (old product). Input for the service includes details of their course information updated from the university, reports from yearly and monthly job titles and descriptions posted on their website by different companies from the API of JobHunters.com, C-GPT profiles, and searching keywords from students. Output for the service includes AI-created job profiles and a roadmap that includes a list of courses. For Platform Compatibility, the documentation states that the service can also work on mobile devices. The service needs to take accessibility into consideration. The primary target users for this service are bachelor students, and in the future, the user target will be expanded to master students. The output presentation of the service is both text-based and visual formats. The output content must include information about each recommended course, specifying whether a course is mandatory or optional, as well as its classification within the user's chosen major or minor field of study. For User Actions, users should have the option to download the output, enabling them to save and refer to the recommendations for further consideration and planning.

After doing research on the internet, we got some information about the existing or similar products:

Sisu: offers comprehensive information regarding degree programs, including details about university courses and student profiles; leverages degree and student profile data to recommend the courses required to successfully complete a degree; provides essential information such as scheduling, grading criteria, and completion methods for each course; automatically updates student profiles with grades and credits upon course completion. What distinguishes our product is its focus on aligning education with the job market. Unlike Sisu, our platform provides clear guidance on specific courses based on job titles rather than relying solely on degree selection. This feature ensures that our users receive tailored and up-to-date information, bridging the gap between education and career prospects.

My World of Work streamlines the career exploration process with ease and efficiency. Users begin by specifying their areas of interest, encompassing diverse subjects like business management, arts, and design. In response, the platform rapidly generates a tailored list of related job titles within the chosen subject area. Going beyond surface-level information, My World of Work provides in-depth

insights such as salary ranges, granting users valuable knowledge about potential earnings. Moreover, it offers real-time data on the current job market demand and availability in the country. Additionally, the platform outlines the specific skills required for success in the chosen field and provides guidance on the necessary qualifications and their respective levels. What sets My World of Work apart is its personalized touch; it tailors recommendations based on both the user's chosen subject and associated job titles. This approach ensures that users receive relevant guidance and support aligned with their unique interests and career aspirations.

National Career Service specializes in furnishing comprehensive course information for career seekers. Users can specify their job title or the field they are interested in, and the platform responds with an extensive list of available courses. These courses are categorized by type, including online, classroom-based, work-based, full-time, part-time, and study time. While it doesn't offer a roadmap, this service empowers users to make personalized course selections based on their unique preferences and needs, offering flexibility in pursuing their career aspirations.

2.3 PESTLE

2.3.1. Political

- Compliance with EU regulations, specifically GDPR, is required.
- Government funding is assured.
- Potential access to EU funding for scaling if the initial phase is successful.
- Attraction of international high-skilled students due to a clear study roadmap and promising career prospects.
- Consideration of electricity pricing.

2.3.2. Economic

- As our platform will be online, we will need to consider the price of electricity for servers
- Helping people graduate supplies more, higher educated people faster to the workforce
- Price of hosting ourselves compared to price of having a subcontractor host

2.3.3. Social

- The process of curating study and career path becomes less overwhelming and improves students' emotional and physical health. This will help them focus better on their studies and courses.
- Due to optimization, students targeting the same job opportunities would end up choosing the same set of courses and landing the same roles, which could result in lack of innovation in creating new roles.
- It is possible that saturation of personnel would occur in certain markets as more and more students would have the same qualifications.
- A step towards creating a highly educated society.

2.3.4. Technology

- Can inspire other companies to create similar or better versions for the same intended use

- Natural language processing and machine learning overall are rapidly growing industries. This software uses them and possibly develop even further
- Always available unlike appointment systems etc.
- Easily scalable (different levels of studying, different countries). Only needs new information supplied
- Available in different, most common languages (at least Finnish, Swedish, English)
- Search engine optimization is a risk that may need a solution
- The price of electricity has been changing a lot. This is a challenge for viability of the company
- Would be nice to be accessible also for disabled people. Could be implemented according to Web Content Accessibility Guidelines (WCAG)

2.3.5. Legal

- Adherence to environmental laws.
- Safeguarding student data privacy.
- Compliance with local company regulations.

2.3.6. Environment

- CO_2 emissions due to operations including employee travel as well as data centers
- Sustainability goals of the implementation
- Unforeseeable weather phenomena causing destruction on assets

2.4. Stakeholder analysis

Table 1 *Stakeholders*

Stakeholder class	Stakeholder	Role	Required participation	Perceived impact of project on stakeholder	Areas of influence	How requirements are collected
-Customer -Service provider	University	- The customer of the product. - User of the product. - Provides data on courses.	- In support of C-GPT in development and maintenance.	- Students graduate earlier, which benefit university financially.	- Want their students to graduate faster. - Want the software to be accessible for all their students. - Want students' information to be safe.	- Qualitative focused group meeting 1.-3.1.2024
Main user	Students	- The main user of the product.	- When they want to plan their studies.	- Makes planning the study path easier. Better chosen courses. Less work on planning studies.	- Want to plan their studies more easily. - Want to choose best possible courses. - Want their information to be safe.	-Interviews 8.-10.1.2024.
Additional service provider	JobHunters	- Provides data on jobs.	- Database maintenance of job announcements.	Makes finding a suitable job or employee with their pages easier.	- Want to make money with their service. - Already have their database in some format that needs to be used with this software.	-Brainstorming session 10. -15.01.2024.
Additional service provider	AI LLC	- Provides AI for data sorting.	- Development of the program to make it work. - Later updating.	- Gets money by offering their AI service.	- Want to make money with their service. - Used AI may give bad results.	- Qualitative focused group meeting 1.-3.1.2024
Financier	Ministry of education	- Finances the project	-No required participation.	-Good learning results and employment rate.	- More qualified employees in the future.	- Qualitative focused group meeting 1.-3.1.2024

2.5. Preliminary requirements and their categorization

Table 2 *Preliminary requirements*
Priorities: 1= most important, 2=important, 3=least important
Types: F=Functional, NF=Non-functional, R=Restriction, CP=Content production, M=Maintaining

ID	Priority	Source	Type	Requirement description
1	1	Frame story	M	Study planners/coordinators from each bachelor level university and its departments can update course information each year.
2	2	Frame story	CP	Information required by the study planners/coordinators: a. Course name b. Implementation code c. Implementation time d. Credit points e. Target students f. Description of the course g. Prerequisites h. Major/minor study module i. Mandatory/Not mandatory j. Language of operation
3	1	Frame story	R	API to fetch company reports from JobHunters.com
4	2	Frame story	F	Students can create a profile which includes following information: k. Basic information for the profile l. Current degree programme m. Current courses they are taking n. Compatibility with university account
5	3	Frame story	NF	Available on Web (one/different browser) and Mobile (Android, iOS).
6	1	Frame story	F	Students can conduct multiple searches in two ways: o. By adding keywords p. C-GPT can suggest a few jobs profiles
7	3	Frame story	NF	Store last 15 search results
8	3	Frame story	R	Profile creation is necessary to view the history
9	1	Frame story	NF	Based on input, a list of courses and their order should appear
10	1	Frame story	NF	The result includes graphical and textual roadmap

11	3	Frame story	F	The user can change the result format in under 5 seconds and the toggle button is right on top of the result.
12	2	Frame story	F	Results can be exported to pdf and image format
13	3	Frame story	R	Profile creation is necessary to download the results

2.7. Methods and timetable for requirements gathering

Gantt-chart for requirements gathering in appendix A.

Phase 1

Team members A and B will hold a qualitative focus group meeting with representatives from the Ministry of Education, representatives from the multi-university collaboration board, and AI LLC's representatives on 01 – 03.01.2024

Team member A will conduct an analysis of existing documents which email from project coordinator summaries from the previous meeting to extract valuable requirements and insights on 03 - 13.01.2024

Team members C and D will create a quantitative online survey and distribute it to students in all universities on 05 - 12.01.2024

Team members E and F will conduct qualitative in-person interviews with 5 students and 5 university technical officers who will be responsible for the product at Tampester University on 08 - 10.01.2024

Team members A and B will hold a brainstorm session with Job Hunters on 10 -15.01.2024

Phase 2

All team members analyze the basic data gathered from stakeholders, then hand over the data to UX and UI designers X and Y to create a basic prototype from 15 - 22.01.2024.

Team member G will develop detailed use case scenarios or user stories to illustrate how stakeholders will interact with the product or system in real-life situations on 25 - 30.01.2024

Team member A and B presents the prototype to stakeholders (Ministry of Education, representatives from the multi-university collaboration board, and AI LLC's representatives) to gather feedback from these stakeholders and modify the prototype accordingly on 30.01 – 05.02.2024.

Phase 3

UX and UI designers X and Y will refine the prototype 05.02.2024 – 10.02.2024

Team member A and B will get feedback about the new prototype from the representatives from the multi-university collaboration board and resolve any conflicts write more requirements based on the feedback received 10 – 15.02.2024

Team member A and B will hand over the requirement to stakeholders to validate them 17 – 25.02.2024

All team members held a meeting to complete the final version of the requirements based on the feedback and validation on 25.02 - 10.03.2024

3. Requirements and modeling the system

3.1. Modeling

3.1.1. Use case diagram

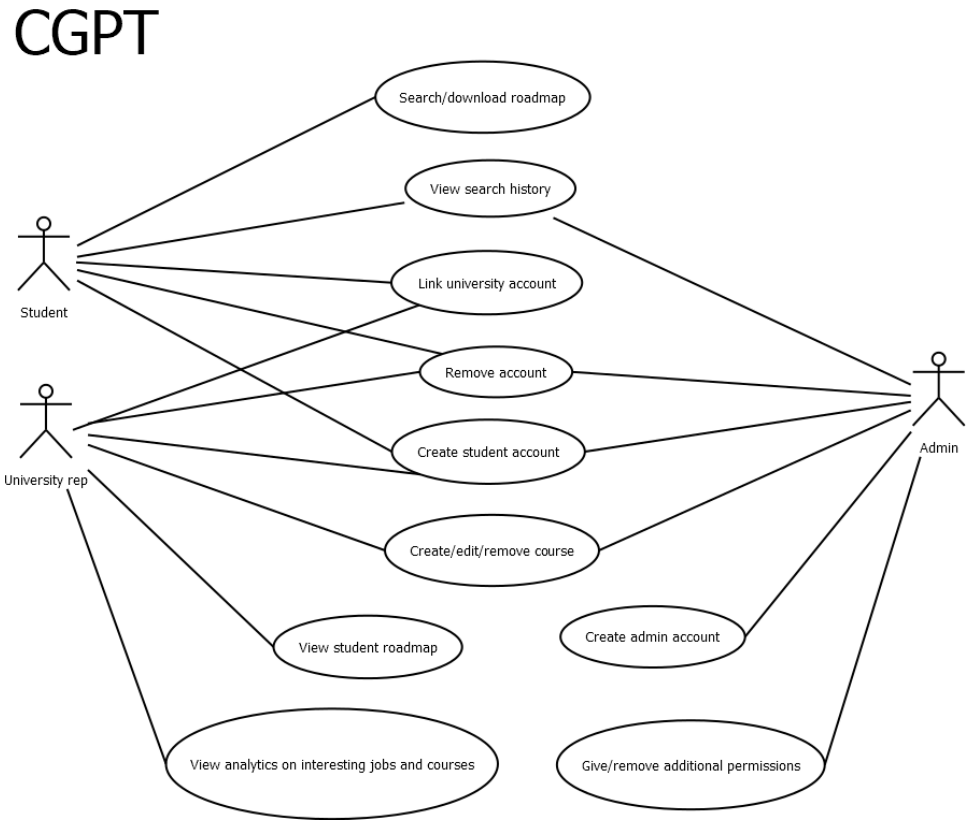


Figure 2 *Use case diagram*

3.1.1.1 Add course into CGPT

Actor:

University personnel

Pre-conditions:

Actor has internet access and database servers are online. Actor has an account that has the rights to create a course for a university and is logged in. Interface for adding courses exists and is usable.

Description:

Actor adds a new course by inputting all relevant information to their designated spots in the “add course” interface. Relevant information contains name, course ID and brief description of course as well as other courses linked to the added course.

Result:

Course is added into the university profile in CGPT. The course can be used as a recommendation in roadmaps generated for students.

Exception:

Errors occur if a course with the same ID already exists or if there are network problems between server and actor.

3.1.1.2 Student generate roadmap

Generate the roadmap

Precondition:

The student has an active profile on the C-GPT platform

Description:

The student opens the C-GPT app, enters specific job titles or keywords related to their career interests into the search bar.

The system utilizes AI algorithms to analyze and sort relevant jobs and courses based on the entered search terms.

Result:

The student receives instant suggestions and results, displaying a list of job titles and associated courses, and selects desired job titles from the suggestions provided.

The platform generates a personalized course roadmap based on the selected job titles, incorporating data from universities and job requirements from the JobHunters.com API.

The roadmap is presented to the student in a clear and user-friendly visual representation, the student has the option to switch to a text-based representation, which is also downloadable for future reference.

The system saves the student's search history, allowing access to the past 15 searches for easy comparison.

Priority:

High

Exceptions:

If the student's profile information is incomplete or inaccurate, the system prompts them to update their details before initiating the search process.

In the case of technical issues or data unavailability, the system provides clear error messages and guides the student on alternative actions.

3.1.2. Entity/Concept diagram

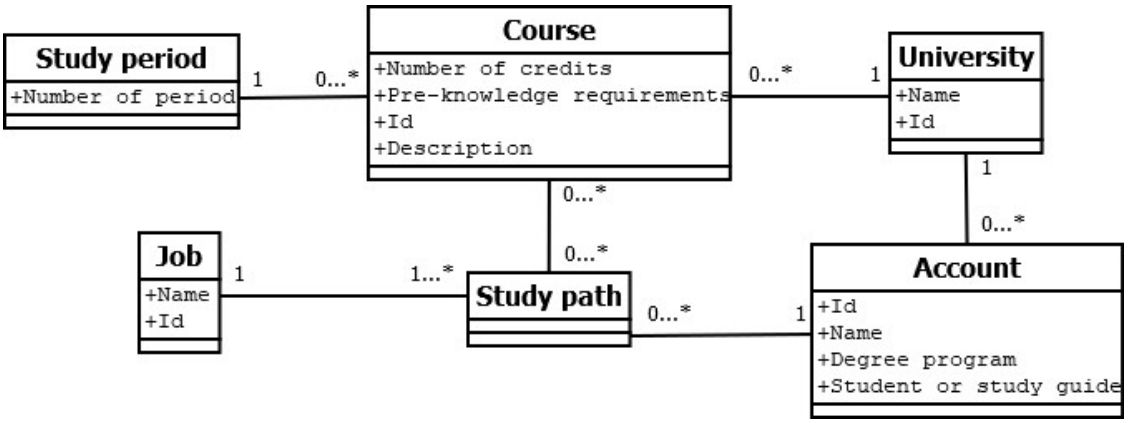


Figure 3 *Entity diagram*

3.1.3. Navigation diagram

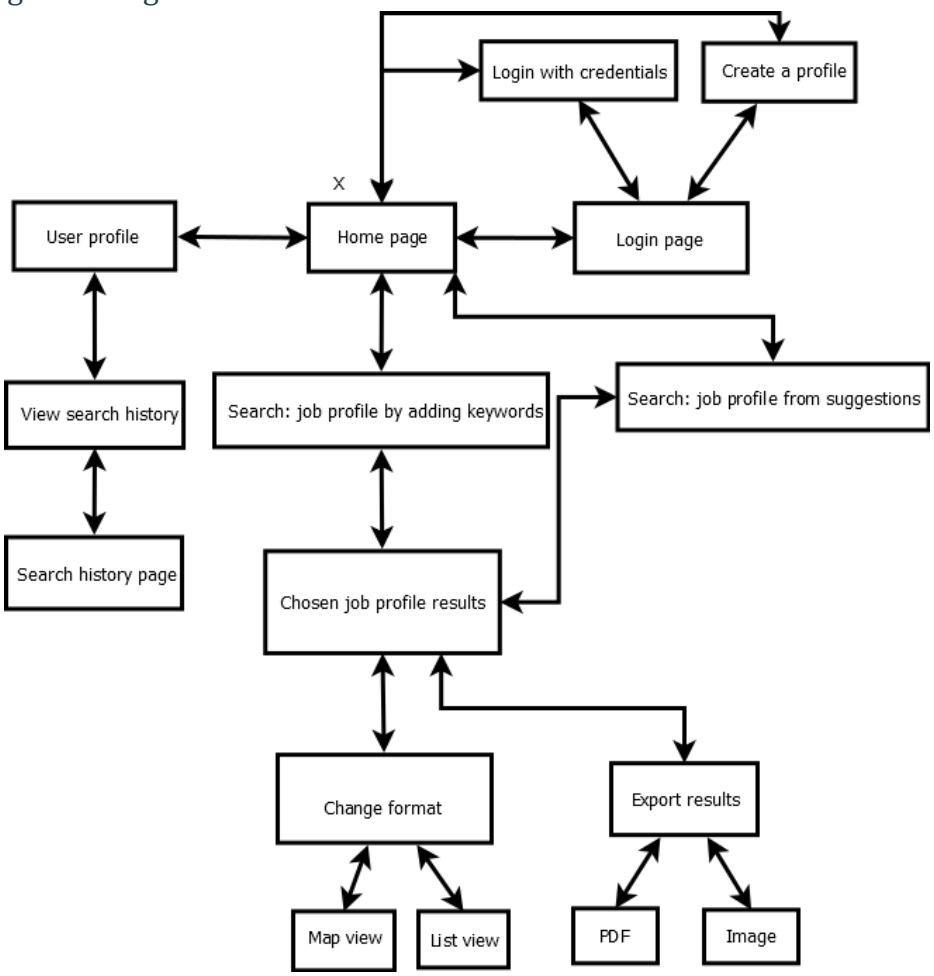
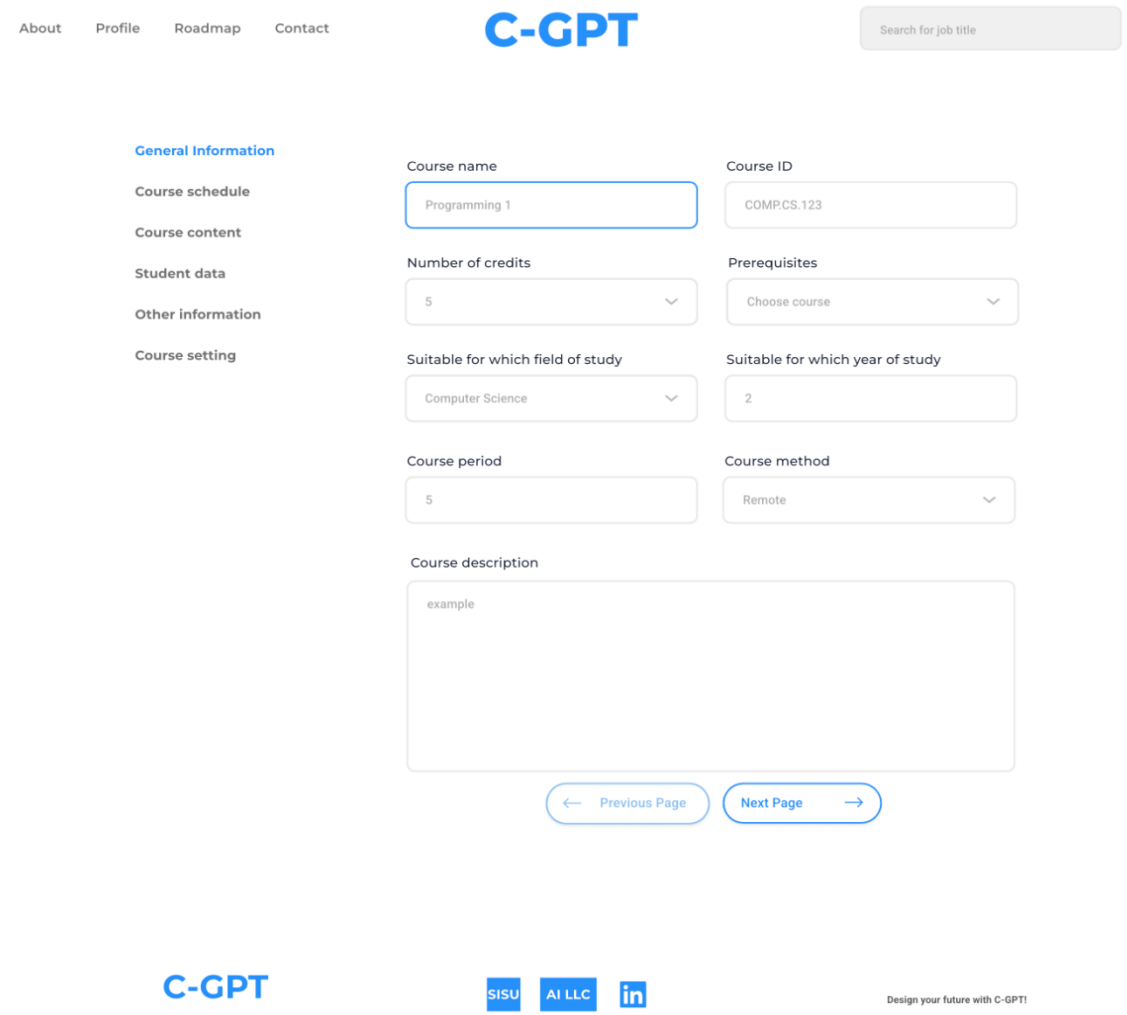


Figure 4 *Navigation diagram. X denotes the starting point of the product.*

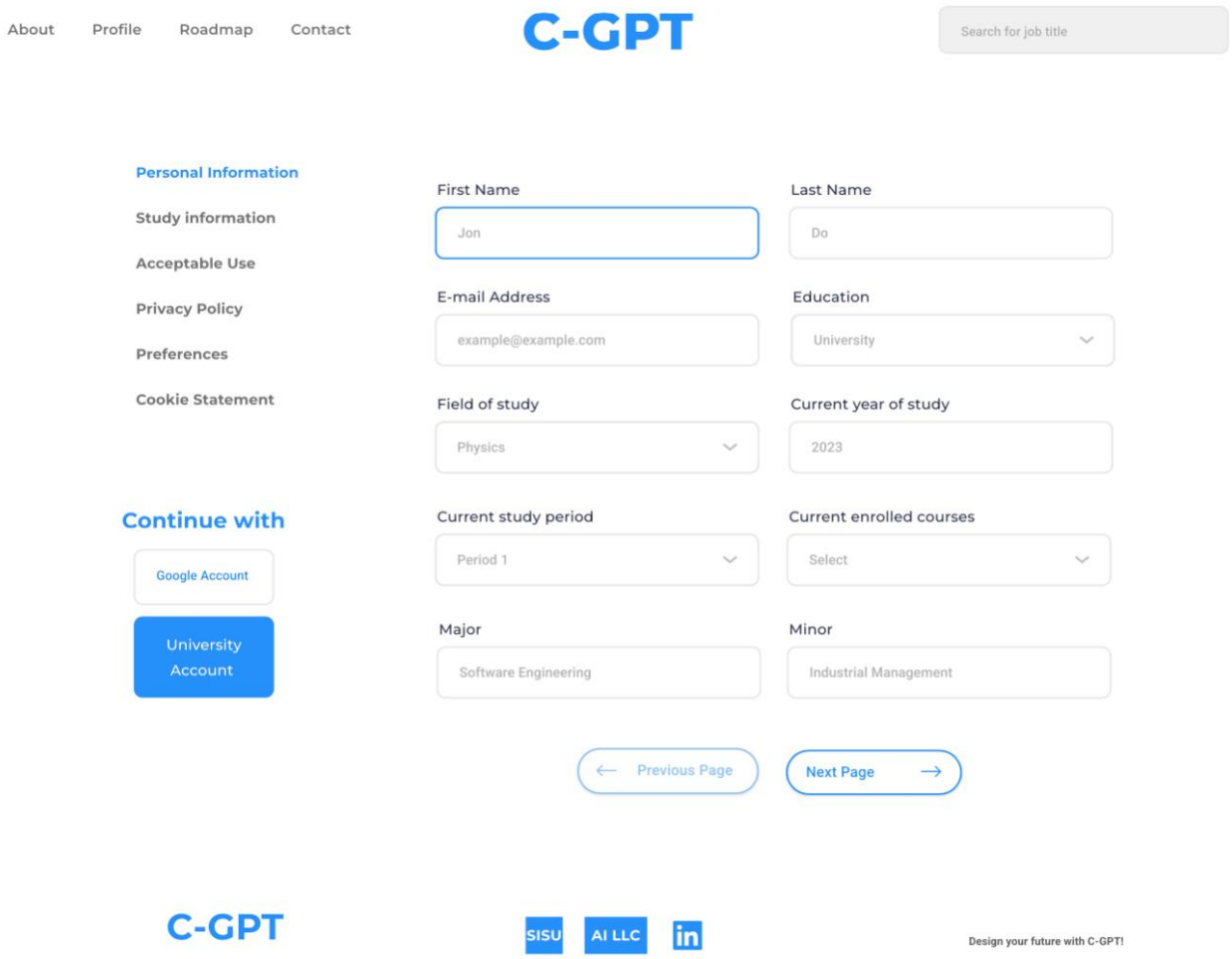
3.2. User interface

Wire frames from **four** user interface views. The views are:

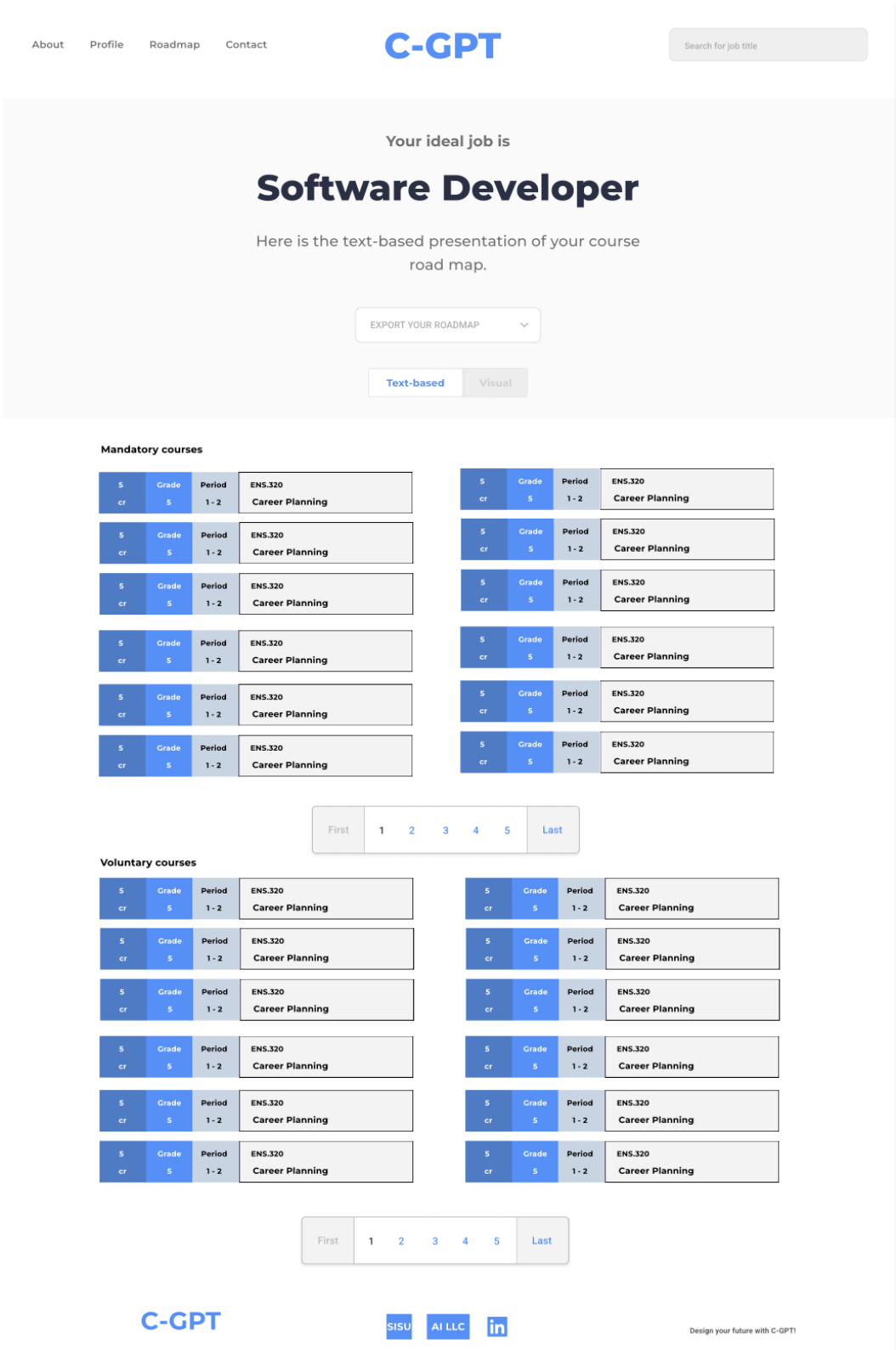
3.2.1. Course information entering view



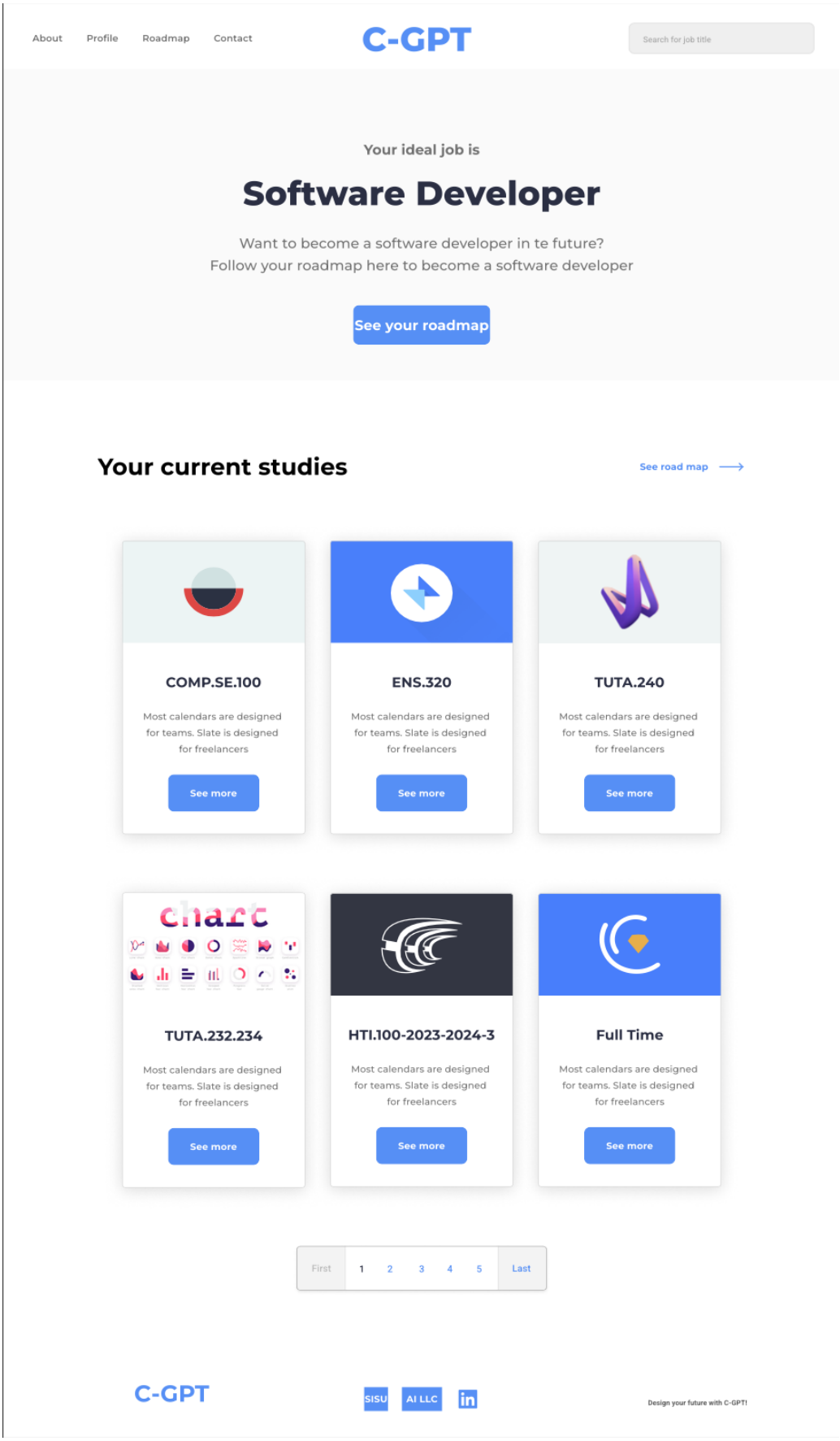
3.2.2. Student profile creation



3.2.3. Result view of the search



3.2.4. Home page



3.2. Requirements

Table 3 *Requirements*

ID	Priority	Source	Type	Requirement description
1	1	Frame story	M	Study planners/coordinators from each bachelor level university and its departments can update course information each year.
2	2	Frame story	CP	Information required by the study planners/coordinators: a. Course name b. Implementation code c. Implementation time d. Credit points e. Target students f. Description of the course g. Prerequisites h. Major/minor study module i. Mandatory/Not mandatory j. Language of operation
3	1	Frame story	R	API to fetch company reports from JobHunters.com
4	2	Frame story	F	Students can create a profile which includes following information: k. Basic information for the profile l. Current degree programme m. Current courses they are taking n. Compatibility with university account
5	3	Frame story	NF	Available on Web (one/different browser) and Mobile (Android, iOS).
6	1	Frame story	F	Students can conduct multiple searches in two ways: o. By adding keywords p. C-GPT can suggest a few jobs profiles
7	3	Frame story	NF	Store last 15 search results
8	3	Frame story	R	Profile creation is necessary to view the history
9	1	Frame story	NF	Based on input, a list of courses and their order should appear
10	1	Frame story	NF	The result includes graphical and textual roadmap

11	3	Frame story	F	The user can change the result format in under 5 seconds and the toggle button is right on top of the result.
12	2	Frame story	F	Results can be exported to pdf and image format
13	3	Frame story	R	Profile creation is necessary to download the results
14	2	WCAG 2	NF	Text alternatives to images
15	2	WCAG 2	R	Minimum contrast ratio of 4.5:1
16	2	WCAG 2	R	Keyboard accessible – All content is operable through keyboard
17	2	WCAG 2	NF	Error identification – errors is described to user by text
18	1	WCAG 2	NF	Pages have titles that describe topic or purpose
19	3	Team	F	Google OAuth 2.0 compatible
20	3	Team	F	HAKA login compatible
21	3	Team	F	Study information system compatibility, can read and copy courses from university systems.

3.2.1. Functional requirement

Requirement: Create a user profile

Description:

This functional feature is made for students or the user. When the user goes to the home page, a button would appear at the top left corner stating, “Sign in/Log in”. The user will click on it, and it will lead them to another page. Here, the student will have three options; link their profile to Gmail/university account or create a profile manually. If they choose Gmail and click on that button, they will have to enter the required information such as Name, password, Education, Field of Study, current year of study, current study period, and enrolled courses, etc. If they choose to link it with their university account and click on that button, all this information will be automatically filled by the system. If they create a profile manually, the only difference will be to provide a valid email address.

After that, the user will check move to the next page and complete all the required information and submit it. A verification link will be sent to their email account ensuring that their profile has been created and they can log in using that link.

3.2.2. Non-functional requirement

Requirement: Store last 15 search results.

Description:

When user views the profile, there is a button “Search history”. This button leads to a view containing last 15 jobs the user has been searching. Last searched job is first and oldest searched job is last on the list. There is a dropdown menu for changing the order to alphabetical or oldest to newest. This view would also contain the basic toolbar on top of the view and logos etc. on bottom of the view. When the user clicks one of the jobs on the list there opens a view containing the study path for this job. The study path view looks similar to the study path view represented under chapter 3.2, except the title would tell that the roadmap is for older, not the newest searched job.

3.2.3. Restriction

Restriction: Need account for search history

Description:

Search history is only available to those who have created a profile and by proxy have agreed to the terms of service and the privacy policy as they have consented to CGPT saving their data. The past 15 searches will be saved for the user, who then can go and view them later.

By choosing a previous search, the system will show the selected previously generated roadmap to the student as well as the job title searched for by the student. The system will not update completed courses that have been marked between the search and the viewing of the past search but will only show the roadmap with the completed courses from the original search.

3.2.4. Accessibility recommendations

Website accessibility means that those with disabilities can interact and contribute to the web. In our case this means that the website should be operable by all students no matter the disability. The five accessibility requirements raised here are:

1. Text alternatives to images
2. Minimum contrast of 4,5:1
3. Keyboard operable website
4. Error identification
5. Pages have titles that convey the title and purpose of the page

Text alternatives to images, minimum contrast and page titles are all for users who are visually impaired and are using text-to-speech tools to operate the website. For the visually abled, these changes won’t cause any hindrance either. Error identification is also added as an important factor as telling the user why a function isn’t working is important to keep the user’s sanity at normal levels. Lastly, as everyone may not be able to use a mouse or touch screen, keyboard operability of necessary functions will be added as a restriction to website design.

3.3. Environment

3.3.1. Other related systems and specialties

CGPT will be required to use the following systems:

1. JobHunters.com:

CGPT uses JobHunters.com API to extract monthly and yearly reports of job profiles, their requirements, and salaries. This data needs to be fed into the artificial intelligence system to be able to produce accurate results directly taken from real world examples.

2. Artificial Intelligence:

The main foundation and technology of CGPT is artificial intelligence systems. The system will take an input (user search words), perform some machine learning/deep learning methods (based on Python programming language) and gives a roadmap, both list and graphical view, as a result.

3. Google OAuth 2.0 and Study Information Systems:

CGPT should be compatible with each university study information system so that students can just link their profile with university profile and the relevant information about degree program is extracted by system.

3.3.2. Required connections, communication, and other environmental requirements

For CGPT to work and produce results, stable internet connection will be necessary. It needs to be made compatible with Android and iOS systems to work on mobile phones. Some functionalities will only work when the user is logged onto the application (refer to the requirements table). Moreover, CGPT will be compatible with three browsers, Google Chrome, Firefox and Safari for web-based application.

3.4. Ideas for further development

Below are listed some ways to develop the software in future.

1. Making the software more accessible. This could include following more standards made for accessibility. Also, it could be useful to give more options on how to perform different tasks.

2. Making apps for different kinds of devices. At the beginning there will be Android and iOS apps but not for all existing phone and tablet models. Later we could design the app for more and more different devices.

3. Getting job announcements from multiple different websites in addition to Job Hunters.

4. Including AI chatbot. OpenAI provides tools to customize a chatbot for more specific needs, like being an assistant on our website. The AI assistant could at least guide people on how to use the software and maybe give some advice for their future career.

5. Simplifying the software. It is always good if things can be done as easily as possible. One good way to measure that is counting how many clicks it takes to perform a task. However, this is often inconsistent with accessibility.

6. Collecting feedback from users. We don't know what we don't know so it is always good to listen to feedback and criticism. Users of the software often have good ideas on how to develop the software. They also find bugs and can report about them.

7. Making a system for giving feedback and reporting about bugs. The app could include a button that leads to a window for giving more details about the feedback. In the beginning, the easiest way could be to provide an e-mail address where users can send their feedback.

3.5. Open issues

No open issue.

References

[1] https://www.w3.org/WAI/WCAG22/quickref/?versions=2.1#principle1

Appendix A: Requirements gathering Gantt-chart

C-GPT

Company: Sisukkaampi
Project Lead: Annie I. Hal

Project Start: Mon, 01/01/2024
Display Week: 1

TASK	Stakeholders related	ASSIGNED TO	PROGRESS	START	END
Phase 1 Stakeholder Engagement					
Hold a qualitive focus group meeting	Ministry of Education multi-university collaboration board AI LLC	Team members A and B	50%	1/1/24	3/1/24
Analyse the existing document	Ministry of Education multi-university collaboration board AI LLC	Team member A	60%	3/1/24	13/1/24
Do quantitative online surveys	students	Team members C and D	50%	5/1/24	12/1/24
Do qualitative in-person interviews	students university technical officers	Team members E and F	25%	8/1/24	10/1/24
Hold a brainstorm session	Job Hunters	Team members A and B		10/1/24	15/1/24
Phase 2 Prototyping and Stakeholder Feedback					
Analyse requirements for prototyping	all stakeholders	All team members, UX UI designers X and Y		15/1/24	22/1/24
Develop use case scenarios	all stakeholders	Team member G		25/1/24	30/1/24
Get stakeholder review and feedback online	Ministry of Education multi-university collaboration board AI LLC	Team member A and B		30/1/24	5/2/24
Phase 3 Requirement Refinement and Validation					
Refine prototype	all stakeholders	UX and UI designers X and Y		5/2/24	10/2/24
Write additional requirements	multi-university collaboration board	Team member A and B		10/2/24	15/2/24
Hand over the requirements to stakeholders to validate	multi-university collaboration board AI LLC	Team member C and D		17/2/24	25/2/24