Project Handbook

GROUP X02 – EMPLOYABILITY ASSESSMENT TOOLKIT

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Revision

Version Number	Date & Time approved	Approved by	Description
1.0	Saturday, 16 April 2022, 10:26 AM	Muhammad Dar	Project vision statement
2.0	Sunday, 24 April 2022, 1 AM	Muhammad Daniyal	Initial project plan
3.0	Sunday, 15 May 2022, 10 AM	Muhammad Daniyal	Updated project handbook

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Preface

Basically, the main objective of the project handbook documentation is to guide the project team in the performance of its responsibilities. It includes designing the prototype, construction, and completion of the project by fulfilling the project requirements to a specified schedule. The main audience of this project are students, and members of the employability.life website. the rudimentary goal of this project is to develop a comprehensive employability assessment portal which will be comprised of three main functions i.e., a career assessment tool, a Curriculum Vitae (CV) assessment tool and a career development planning tool. It will benefit the stakeholders in many ways by saving time, managing large volume of candidates, providing more efficient review process and sorting resumes based on keyword identifiers provided by the employer. Basically, CV screening determines whether a candidate is prepared and qualified enough to be considered for a job role based on education and experience of the candidate.

Vision Statement

The major goal of this project is to create an Employability Assessment portal that will be used by students who are using the Employability.life website to prepare for their desired jobs. This portal will contain three main tools that are: career assessment tool, CV assessment tool and career development tool. Through career assessment tool, students will be able to prepare themselves for the job as this tool will contain detailed questionnaires according to their job roles which will help students to analyse their personality types, amount of preparation, and fitness for the jobs. Through CV assessment tool, students will be able to get feedback and recommendations about CV by uploading their CV in accordance with their preferred job roles. Over and above that it will benefit the stakeholders in many ways by saving time, managing large volume of candidates, providing more efficient review process and sorting resumes based on keyword identifiers provided by the employer. Basically, CV screening determines whether a candidate is prepared and qualified enough to be considered for a job role based on education and experience of the candidate. It will assist and advice students and institutions on workplace trends and employability preparation. Through career development planning tool, students will be able map their existing competencies to target competencies for their preferred job. Moreover, suggested solutions for competency development for the jobs are also provided to the students. With the help of these tools, students will be able to prepare themselves for their desired job. To recapitulate, this development will help the owners of the Employability.life website because it will attract a larger number of target users. These tools will set this website apart from others.

1. Introduction

1.1 **Project Overview**

The main objective of the project is to develop an employability assessment portal which will be majorly used by the students (target users of website) who are preparing themselves for their careers. This employability assessment portal will consist of three tools that are: career assessment tool, CV assessment tool and career development planning tool. This project is done in 5 sprints. The resources & technologies that will be used to develop the portal are:

- Pencil software to create wireframe
- Online resources through websites
- Online resources through Journals and books
- Moodle LMS & H5P
- HTMS
- Power BI

1.2 Project Deliverables

The key project deliverables which will be delivered at the end are as follows:

- Detailed research of the similar solution
- Specification and wireframe for the proposed solution
- Toolkit web app in Beta

1.3 Evolution of the Handbook

The handbook will be updated regularly at every step during the project progression to achieve the main goal of the project. Team leader will be responsible for updates. Every member is notified about every change as this handbook is shared on the MS teams & project progression is being monitored through GitHub and Trello so that everyone including university teacher & coordinator are aware of the changes.

1.4 Reference Materials

- Score My Resume - Get a Free Resume Score - Resume Checker and Grader. (2022). Retrieved 28 April 2022, from https://resumeworded.com/score
- Optimize Your Resume and Boost Interview Chances - Jobscan. (2022). Retrieved 28 April 2022, from https://www.jobscan.co/
- Retrieved 28 April 2022, from https://www.careermagnifier.com/career-assessment-australia/
- Youth, S. (2022). 15 free career assessment tools to help clients find their fit - CareerWise. Retrieved 28 April 2022, from https://careerwise.ceric.ca/2021/06/17/eight-free-career-assessment-tools-to-help-clients-find-their-fit/
- 7 Tools to Plan Your Career the Right Way | Indeed.com. (2022). Retrieved 28 April 2022, from https://www.indeed.com/career-advice/career-development/career-planning-tools

1.5 Definitions and Acronyms

Following are some of the acronyms, keywords, abbreviations, and technical words that are used in this product backlog.

Acronyms/abbreviations	Definitions
TU	Target Users
GU	Guest Users
EL	Employability Life
PC	Project Client
PO	Product Owner
US	User story
PS	Project Supervisor
FR	Functional requirement
EAT	Employability Assessment Tool
CVAT	CV Assessment Tool
CAT	Career Assessment Tool
CDPT	Career Development Planning Tool

2 Organization

2.1 Process Model

Sprints	Activities	Start date	End date	Total Time (DAYS)
Sprint 1	Sprint meeting	4/18/2022	4/18/2022	19
	Defining requirements	4/19/2022	4/20/2022	
	Researching	4/21/2022	4/23/2022	
	Wireframing	4/24/2022	4/27/2022	
	Prototyping	4/28/2022	5/1/2022	
	Follow up sprint meeting	5/1/2022	5/1/2022	
	Documentation	4/30/2022	5/5/2022	
	Testing	5/1/2022	5/3/2022	
	Review meeting	5/6/2022	5/6/2022	
	Retrospective meeting	5/7/2022	5/7/2022	
Sprint 2	Sprint meeting	5/16/2022	5/16/2022	18
	Defining requirements	5/18/2022	5/19/2022	
	Researching	5/20/2022	5/22/2022	
	Database development	5/23/2022	5/26/2022	
	Code development	5/26/2022	5/28/2022	
	Follow up sprint meeting	5/28/2022	5/28/2022	
	Testing	5/29/2022	5/29/2022	
	Documentation	5/30/2022	6/1/2022	
	Review meeting	6/2/2022	6/2/2022	
	Retrospective meeting	6/3/2022	6/3/2022	
Sprint 3	Sprint meeting	1 day		18
	Defining requirements	2 days		
	Researching	2 ½ days		
	Designing forms and queries	3 ½ days		
	Follow up sprint meeting	1 day		
	Documentation	4 days		
	Testing	2 days		
	Review meeting	1 day		
	Retrospective meeting	1 day		
Sprint 4	Sprint meeting	1 day		20 ½
	Defining requirements	1 day		
	Designing interface	4 ½ days		
	Code development	5 ½ days		
	Follow up sprint meeting	1 day		
	Documentation	3 days		
	Testing and evaluating prototype	2 ½ days		
	Review meeting	1 day		
	Retrospective meeting	1 day		
Sprint 5	Sprint meeting	1 day		21
	Defining requirements	2 days		
	Final documentation	3 ½ days		
	Code development	4 days		
	Follow up sprint meeting	1 day		
	Incorporate user feedback	3 days		
	Deploy system	2 days		
	Review meeting	1 day		
	Retrospective meeting	1 day		

2.2 Organizational Structure

Project Team Members	Scrum roles
Sukhtindervir Kaur	Scrum Master
Muhammad Daniyal	Product Owner
Suraj Mahat	Team member
Pratik Lamichhane	Team member
Roshan Shrestha	Team member

Although it is better to stick with the role that one selects at beginning yet changes in these roles can happen based on following:

- Changes in these roles will be determined based on certain criteria set by the whole team while working on the project.
- Based on project responsibilities, everyone will be free to interchange the roles after the approval from rest of the group members.
- Based on performance, other team members may request to interchange the roles if one is not performing well during project progression. For instance, project owner may interchange with any of the team members and vice versa.

2.3 Organization Boundaries and Interfaces

The team leader/ Project lead/ Project Owner "Muhammad Daniyal (30385522), will be responsible for the project progression, communication & the interactions between each team member and the client at every phase of the project. Furthermore, project documentation will be done by the team member who has been allocated specific tasks. Communication with the client will be made possible face-to-face (as done with Marketa at ATMC, Sydney: 3:30 pm on 4/27/2022), through MS-Teams, Email, and Zoom. As per the responsibilities set by the team Muhammad Daniyal (30385522) will be responsible to schedule meetings with client and forwarding emails etc. We had our 1st meeting with client representative i.e., Marketa Mojzisova at ATMC, Sydney: 3:30 pm on 4/27/2022. We will have meetings during project progression as the client finds spare time and at the end of the final project. After sprint one was completed, we had meeting with Anirudh Phadke (Head of Digital Content) via MS Teams (Friday, 2:30 pm – 3:00pm on 5/6/2022).

2.4 Project Responsibilities

We have used RACIS matrix to identify the roles and responsibilities of each team member.

R = Responsible

A = Accountable

C = Consult

I = Informed

S = Support

PROJECT	*Design*	*Programming*	*Meeting arrangements*	*Quality assurance*	*Testing*	*Technical Documentation*
Muhammad Daniyal (Product Owner)	***C/S/A***	***S/A/C***	***R***	***R/A***	***C/I***	***S/C***
Sukhtindervir Kaur (Scrum Master)	***R***	***S/I***	***S***	***S/C***	***S/I***	***R/A***
Suraj Mahat (Team member)	***C***	***S/I***	***I/C***	***S***	***R***	***S/I***
Pratik Lamichhane (Team member)	***C***	***S/I***	***I/C***	***S***	***C/S***	***S/I***
Roshan Shrestha (Team member)	***C***	***S/I***	***I/C***	***S***	***C/S***	***S/I***

3 Managerial Process

3.1 Management Objectives and Priorities

The management (Product Owner and Scrum Master) is responsible for getting the tasks completed through the group members effectively and efficiently.

The management philosophy is to achieve high performance, high equity, flexibility, or learning new skills throughout the entire project by working collaboratively.

At first, we faced major complication in the form of team conflict. Only two members of the team that are Muhammad Daniyal and Sukhtindirvir Kaur taken our product backlog. Other members were not responsive. It caused conflict even though we tried to contact them, but nobody responded. Then, this problem was resolved when we attended week 4 lecture and discussed this issue with the tutor. A specific time was allocated, and meeting was done in which we decided a timetable about project progression. After that, everyone was happy, collaborative, and responsive.

3.2 **Assumptions, Dependencies, and Constraints**

- The assumptions upon which this project is based:
    - We have assumed two members in management that are Product owner and scrum master.
    - We have assumed three team members that will be responsible for helping and supporting management in the project development.
    - We have assumed that we will be using GitHub and Trello for project and - code management.
    - We have assumed that we will be using MS Teams for communicating through the project progression.
    - We have assumed that we will be using MS Word and Google doc for the documentation of the project.
    - We have assumed that we will be using HTML5, CSS3, JS, PHP, MYSQL, HTMS, H5P, Moodle LMS and Power BI for the project development.
    - We have assumed that the team members can use above mentioned tools and technologies to develop the employability assessment toolkit.
- The external events or inputs that the project depends on:
    - We have had a face-to-face meeting with the client representative that is Marketa Mojzisova.
    - Meeting with the client via Zoom and MS teams.
- The constraints under which the project is operating:
    - Availability: The resources which will be using for the development of the project needs to be available.
    - Hardware: We are required some of the hardware to achieve the main goal of the project.
    - Quality: The level of quality to with the project must reach.
    - Time: The project is finished in total five sprints. All the key outcomes of each sprint of the project needs to be delivered on the time.
    - Scope: Throughout the project progression, the project needs to run according to its scope.

4 Technical Process

4.1 Methods, Tools, and Techniques

In this section, we have discussed about the tools and techniques that are used to build the project. It includes project management, documentation, and communication tools.

Team leader and scrum master will be responsible for controlling the empirical processes, self-organization, iterative development, value-based prioritization, and collaboration.

For project management, we are and will be using GitHub and Trello. For documentation, we are using MS-Word and Google Doc. For communication between the team members and the client, we are using MS-Teams, Gmail and Zoom etc. We are using Ms Teams and GitHub for document and code management. We will be using many technologies such as HTML5, CSS3, JS, PHP, MYSQL, HTMS, H5P, Moodle LMS and Power BI for project development. To recapitulate,

Tools	Functionalities/Uses
GitHub	Project & Code Management
Trello	Project Management
MS-Word	Project Documentation
Google Doc.	Project Documentation
Zoom	Project Communication
MS Teams	Project Communication
HTML5, CSS3, JS	Project Development
PHP	Project Development
MYSQL	Project Development
HTMS	Project Development
H5P	Project Development
Moodle LMS and Power BI	Project Development

4.2 Software Documentation

For creating user and technical documents we will be dividing the tasks. First, we will create a preliminary project plan, requirement elicitation and analysis specification. After that we will be creating the wireframes for our project. Subsequently, the whole project will be divided into many components and for each object, we will create designs. In the end, we will code and test our project prototype.

The main goal of the project is to develop an employability assessment toolkit. For this toolkit, we will need to create a user manual and an installation manual. We will be assisting in using and installing this toolkit. Project will ensure quality, verification, and validation.

This documentation will be reviewed and tested for accuracy by Muhammad Daniyal (Product owner) who will carry out review based on project progression and will make other team members aware of any changes that will be required.

5 High level Project Plan

There are five sprints planned for the project.

- Sprint 1: Research and documentation

Goal: The main goal of this sprint is detailed research of the similar solutions.

Key objective: For accomplishing this task, firstly we are performing research of solutions that are resembling to our project requirements as high lightened in the reference section of the document. After this we will be choosing the best proposed solution and subsequently, we will document the acquired information.

Outcomes: Proper documentation of the project handbook

- Sprint 2: Specifications and wireframing of CV assessment tool

Goal: The main goal of this sprint is to document the specifications and designing of wireframes for the CV assessment tool.

Key objective: To carry out this task, we will write the requirements about the tool of what interfaces and designs we must use. Subsequently, detailed specifications will be provided. After this we will be using pencil software to develop the wireframe of CV assessment tool.

Outcomes: Fully designed wireframe along with CV upload option having certain file uploading formats.

- Sprint 3: Specifications and wireframing of Career Development Planning tool

Goal: The main purpose of this sprint is to document the specifications and designing of wireframes for the Career Development Planning tool including detailed feedback to the user.

Key objective: First and foremost, we will write the requirements about the tool of what interfaces and designs we must use. Along with that we will decide the design of how to provide feedback to the users. Subsequently, detailed specifications will be provided. After this we will be using pencil software to develop the wireframe of Career Development Planning tool.

Outcomes: Detailed specifications and recommendations to user based on future competencies.

- Sprint 4: Specifications and wireframing of Career Assessment Tool

Goal: The purpose of this sprint is to document the specifications and designing of wireframes for the Career Assessment tool including detailed feedback to the user.

Key objective: First and foremost, we will design questionnaire in which the user will be asked to answer questions related to the desired job roles and responsibilities. Subsequently, we will decide of how to provide recommendations to the user so that they will be able to find a suitable job based on their desired fields. After this we will design the Career Assessment Tool and will include specifications in the document.

Outcomes: Detailed questionnaire, recommendations and feedback to users, document specifications

- Sprint 5: Technical documentation and testing

Goal: The rudimentary goal is to document the technical needs of the project and to test the designed wireframes.

Key objective: Firstly, we will be high lighting the technical requirements of the project and initiative by Employability.life. After this we will test our designed wireframes and will showcase the completed work to client.

Outcomes: Complete employability assessment portal and documentations along with certain documentation.

Following are the links that are referencing to our online project board:

GitHub project link:

https://github.com/ITECH3208andITECH3209feduni/project-repo-project-x02

Trello project link:

https://trello.com/itech3208projectx02team/members

6 Non-functional Requirements

6.1 Platform

The employability assessment portal which we are developing will run in the Moodle platform of the employability.life. It will be using many technologies. Everyone will be able to easily see these portals on their personal computers, tablets, and mobile devices.

6.2 Communication

The portal will need to connect to the mail server using Simple Mail Transfer Protocol (SMTP), POP3 and IMAP through which users will be able to fill out the online query form to helpdesk of E/L. POP3 protocol works on two ports which are port 110 and port 995. IMAP protocol works on two ports which are port 143 and port 993. SMTP protocol works on three ports which are port 25, port 2525 and port 465. The portal will need to connect to the HTTPS server using (Transmission Control Protocol) TCP. HTTPS works on port 443 for web browsing. It provides encryption and transport over secure ports.

6.3 Performance

Following performance-based requirement will be implemented in our design:

Encoding mode = Quality

Key frame = 5

Frame rate = 60 fps

Audio bit rate = 32 kbps

Field order = Progressive and NTSC

Profile = Baseline

Level = 4.3

Render at Maximum Depth=On

Bitrate Encoding VBR 2 pass

Target Bitrate = 2

Maximum Bitrate = 2

Key Frame Distance = 75

Audio Format = ACC

Channels = Mono

Audio Quality = High

Audio Sample Rate = 32000 Hz

Audio Precedence = Bitrate

Audio Bitrate (kbps) = 32

6.4 Security and Privacy

For the development of open-source platform, security raises many concerns. Our team will be able to fix any detected bugs and vulnerabilities quickly. The organisation will have complete control over the data because we would not be able to monetise any student data or use organisational data. We will offer full commitment to privacy that is full data control and transparency. Password will be stored using PhpMyAdmin. The organisation will need to adhere to local privacy legislation requirements. Two factor authentication will be used for user's data. We will be using Moodle privacy API that plug in developers to implement changes in GDPR compliant.

6.5 Audience, Usability and Accessibility

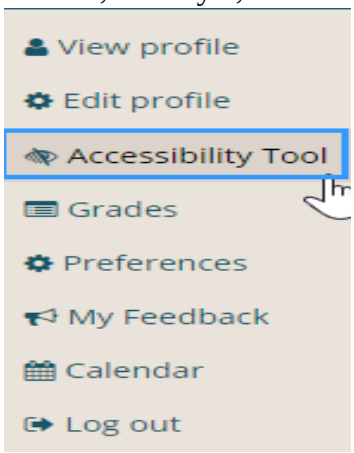
People from all over the world will be able to use it as an open-source platform. Over 100 language translation will be provided using Google Translator API. The intended users are students and educational institutes. The interface will be quite simple to use. It will provide equal functionality and information to all people. There will not be any barriers for users regardless of disabilities, assistive technology that are used, different screen sizes and input devices. From the site administration panel, employability admins will be able to find accessibility toolkit under admin tools in plugins sections. Three types of accessibility issues will be covered that is visual, auditory and mobility.

6.6 Reliability

System availability, up/downtime, fault logging, redundancy, error tolerance will be fixed and handled quickly in the time of any fault. The open-source software will be maintained and upgraded regularly. It will be flexible management system that will create for assessments. It will be user friendly interface which is easy to access and offers content management and security.

6.7 Modifiability

The employability assessment portal will allow authorised educational institutions, staff members and students to customize the appearance of the platform through changing colour scheme, font style, readability, and font sizes.



Amendments made in the tool will only reflect to an organizational institution, staff, or students. A non-programmer will be able to easily amend the tool appearance. The system will ask the user in case if any new version of the software is available by popping up a notification.

6.8 Economic

There are some economic constraints/requirements in our project development. Choice of platform, development tools, frameworks and libraries, external services, deployment targets and more are all dictated by economic constraints. This project is funded by employability.life under ATMC initiative. Employability is responsible for providing access to the site code so that we could add an extra feature which is employability assessment portal after approval from the client.

6.9 Legal

Licencing and certification will be provided by employability.life under Moodle consent to amend the site for organizational and educational purposes.

6.10 Standards

We will need adhere to existing standards for file formats, network systems, or to be compatible with other systems or products under employability requirements. The assessment portal will be designed according to employability aesthetics and designs to meet client's needs.

7 Software and Systems Architecture

7.1 Architecture objectives

The desired goals of the employability assessment portal are to grant user the access to https://employability.life/ for using three tools which are career assessment tool, CV assessment tool and career development planning tool. First user needs to login to the system to access these tools. Each tool will provide access after correct login credentials. Once user will be able to access the employability assessment toolkit, he/she will be asked to use one of the three available tools. In case in the user selects CV assessment tool, he/she will be asked to upload resume and after the system will have analysed the CV, it will show results to the user with some features locked which the user can access after subscribing to employability. In case of career assessment tool, user will be asked to answer different questions and the tool will provide the user with suggestions and recommendations again with some locked features using SAS analysis through which user will be able to access important resources. Similarly, in case if the user selects career development planning tool, he/she will be asked to answer a detailed questionnaire and results will be shown in terms of certain criteria like career competencies and future goals with some locked features which the use can access once he/she subscribes to employability. Overall, these portals provide many advantages to the students such as provide feedback on their CV, detailed questionnaire, and suggestions on their competencies for their desired job roles.

7.2 High-level architecture

For the development of assessment portal, we will be adopting a combination of **n-Tier**, **distributed** and **microservice**. N-tier architecture is also called multi-tier architecture because it is developed in such as a way to have the processing, data management, and presentation functions physically and logically separated. Microservices will allow the employability assessment portal to be separated into smaller independent parts, with each part having its own specific functions.

7.3 User Interface / Interaction / Software design

Developed prototype link:

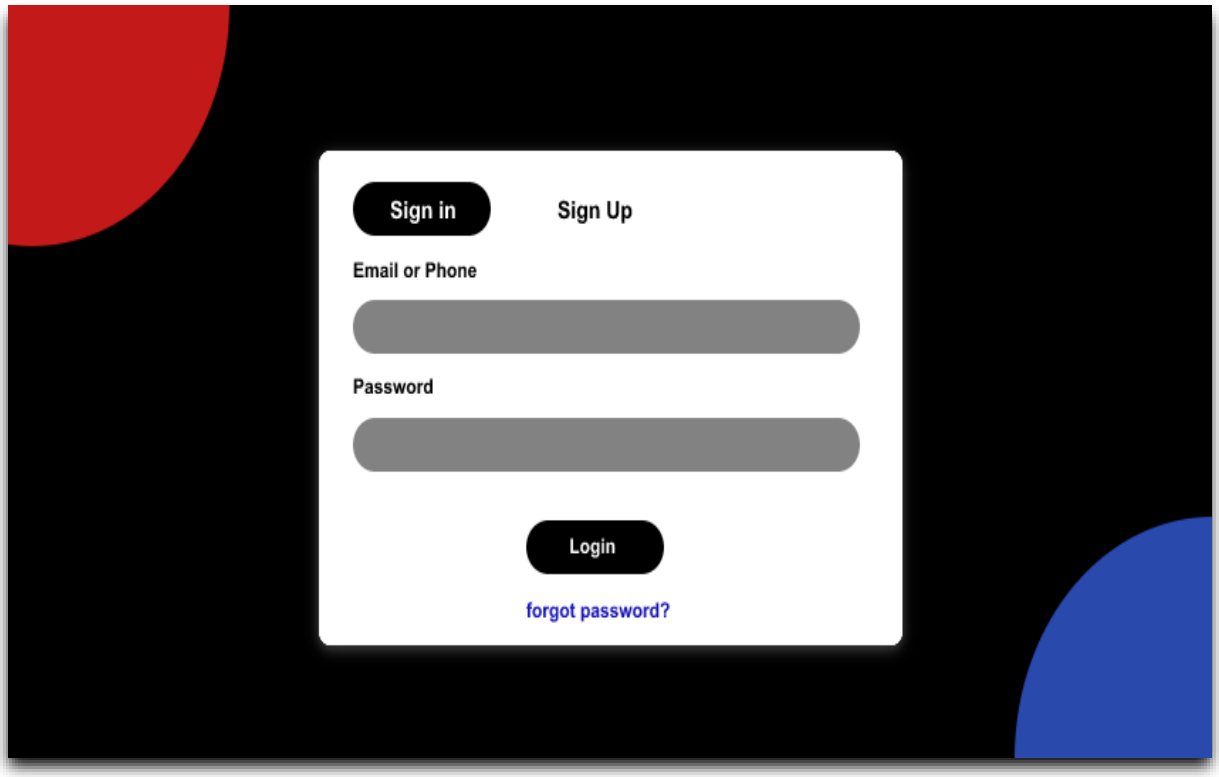
https://mdaniyalmuz.invisionapp.com/prototype/cl2otpxsh00g3y301i2k267yg/play

Prototype explanation:

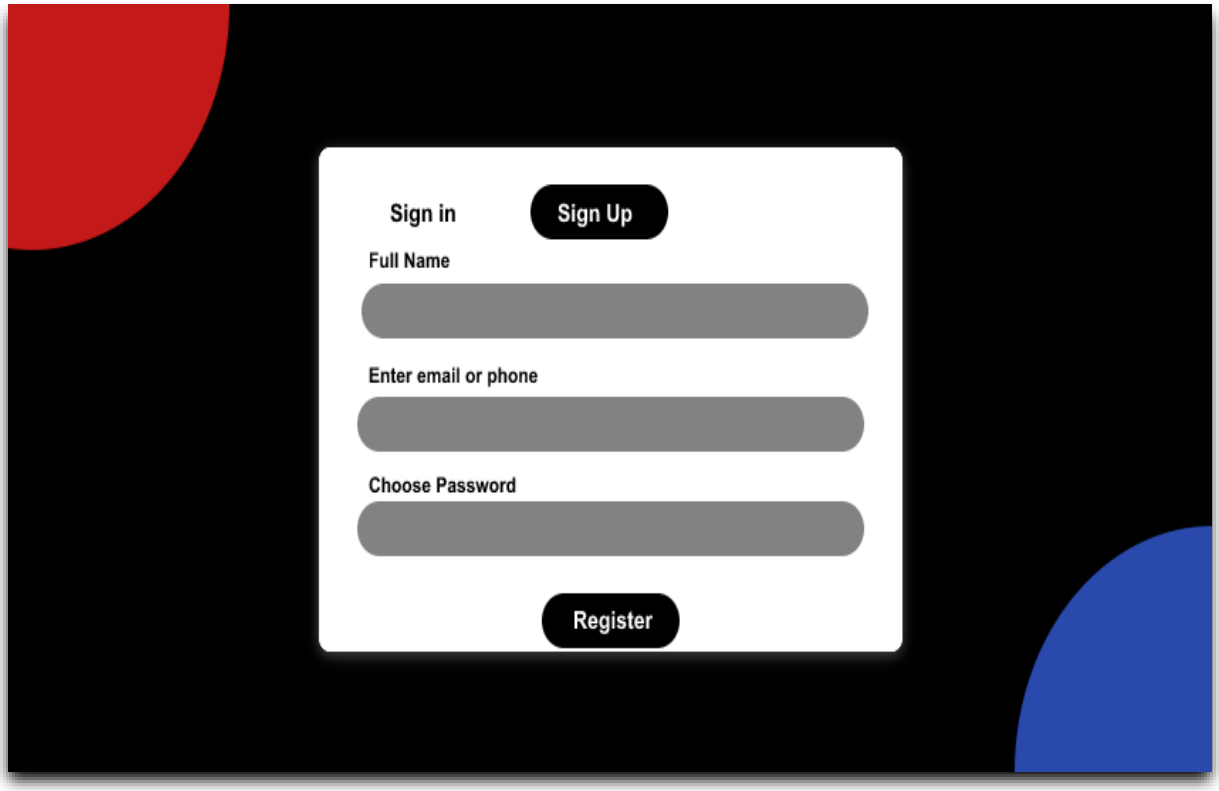
To commence with, user will be welcomed to the employability assessment portal. The user will be asked to sign into the system if he/she is a registered member. Otherwise, the user can sign-up by filling their full name, email address, phone number and password in relevant fields. User will have the option to reset password if he/she forgets. Once user login to the portal, user will be given the option to select one of three available tools i.e., CV assessment tool, career assessment tool and career development planning tool. Once user selects any of the options, he/she will be able to receive feedback after following relevant tools' procedure. For CV assessment tool, user will need to upload CV. For career assessment and career development planning tool, user will be required to answer questions. The user will also have the option to subscribe to employability assessment portal and user will be given access to extra features. The whole procedure is delineated below:

Home page:

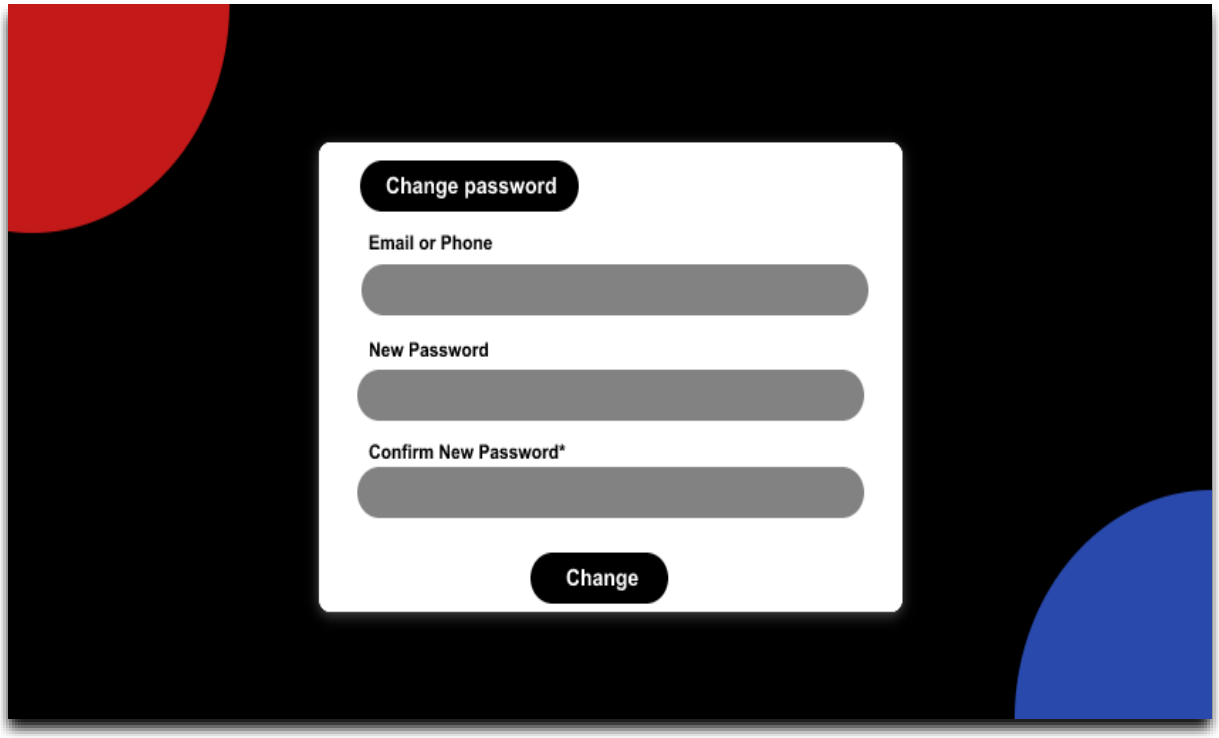
Sign in page:



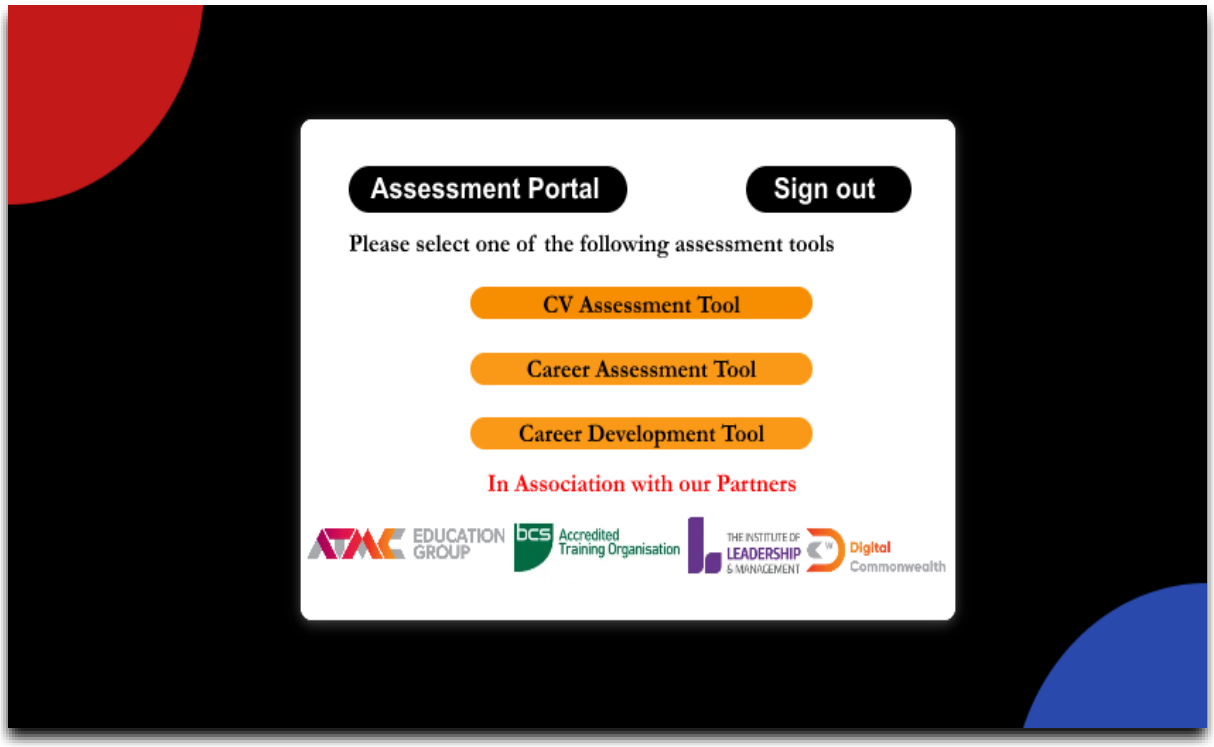
Sign Up page:



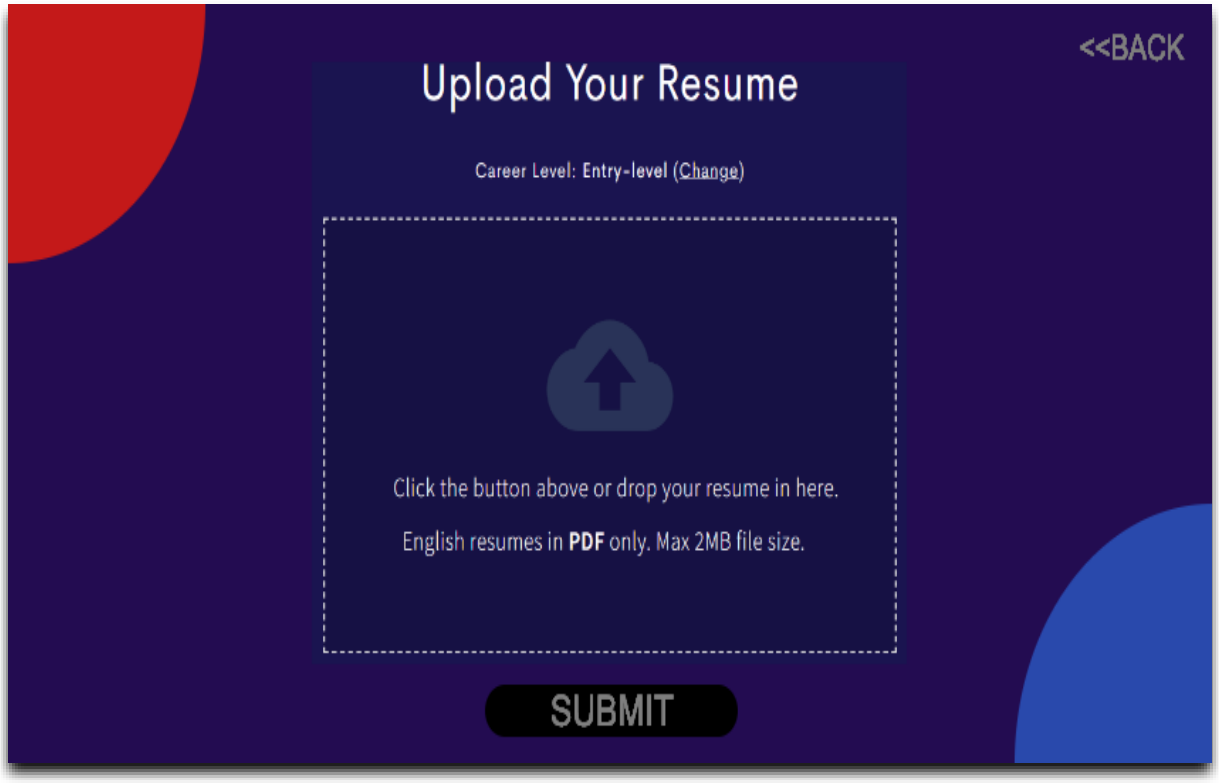
Change password page:

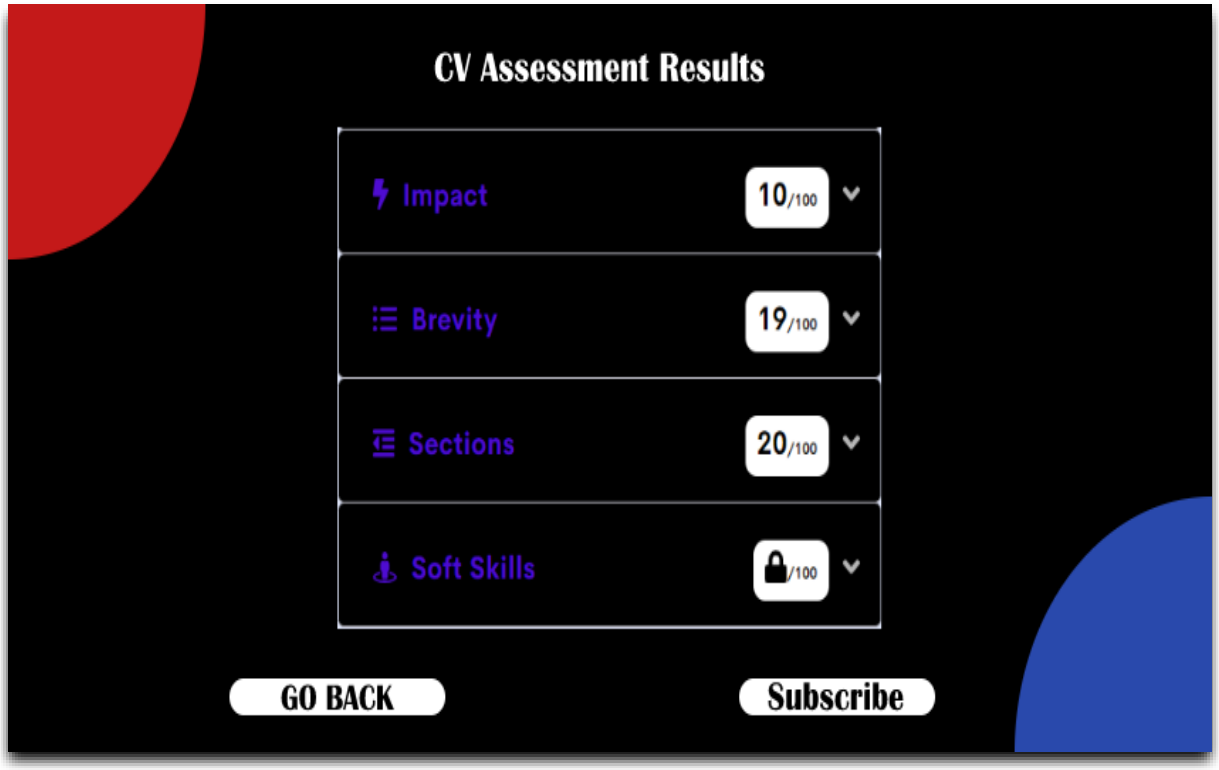


Employability assessment portal:

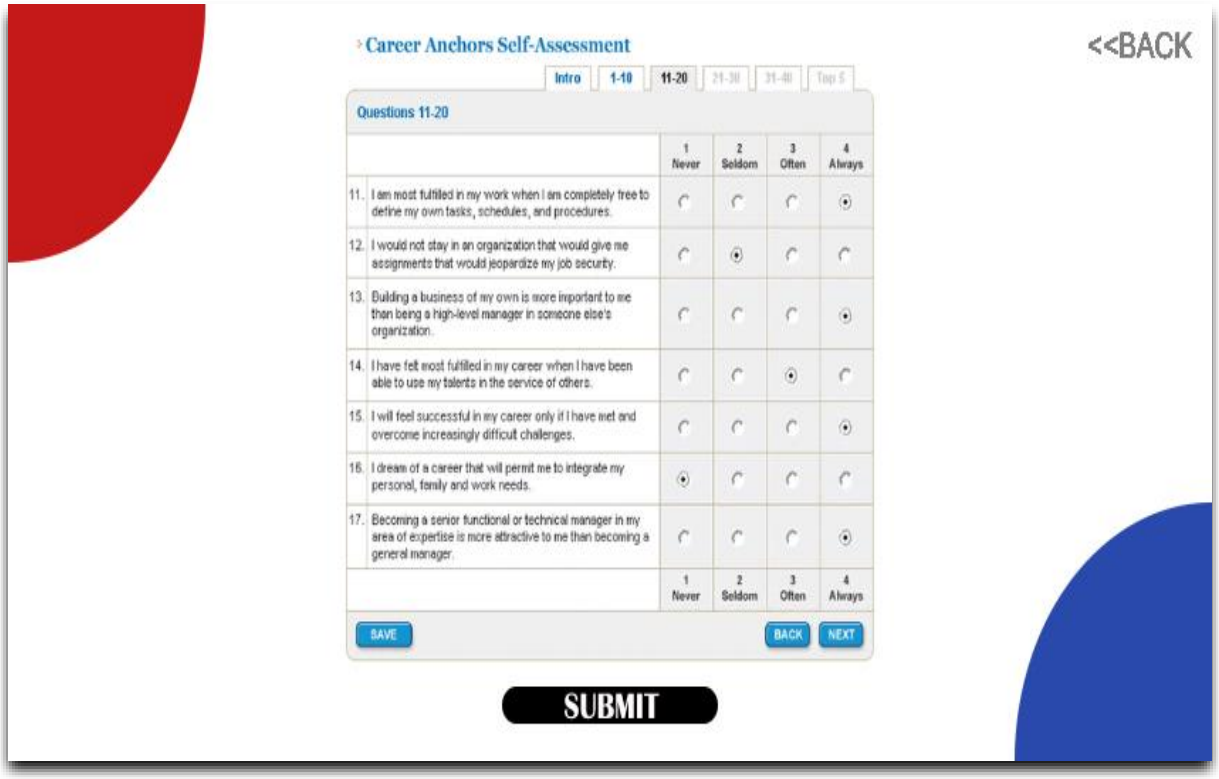


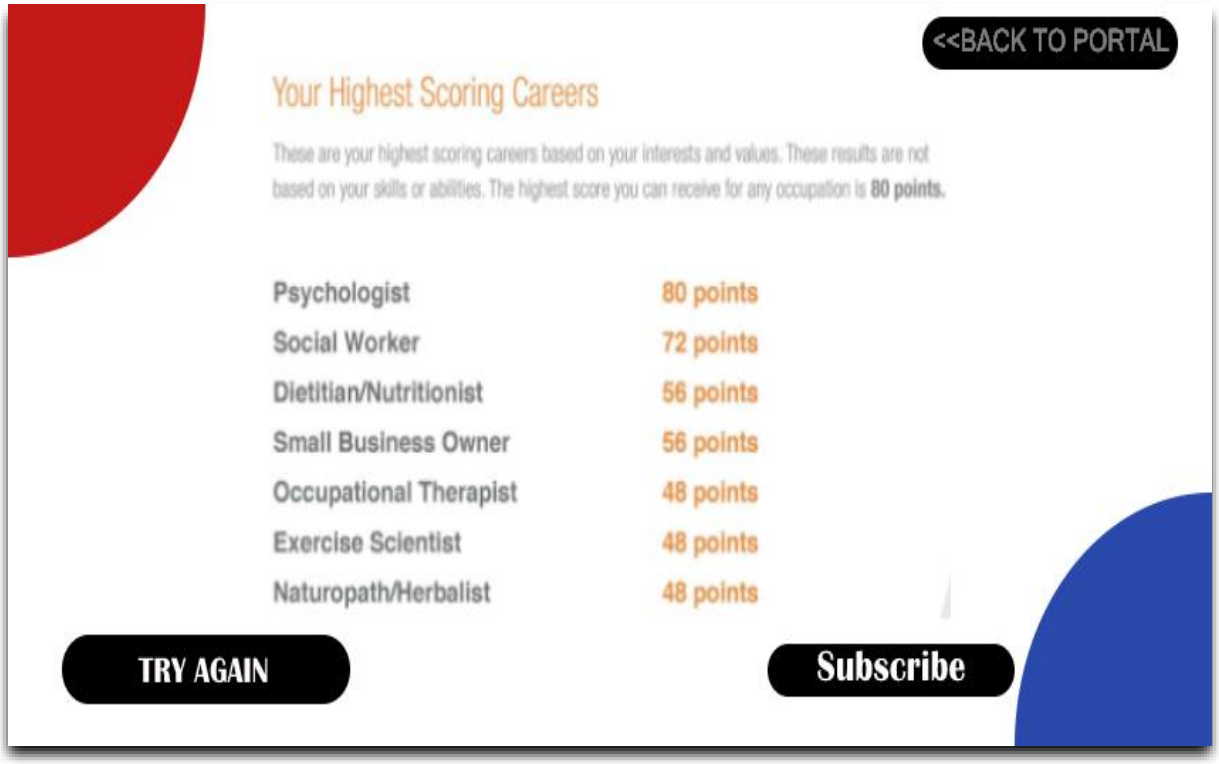
CV assessment tool:



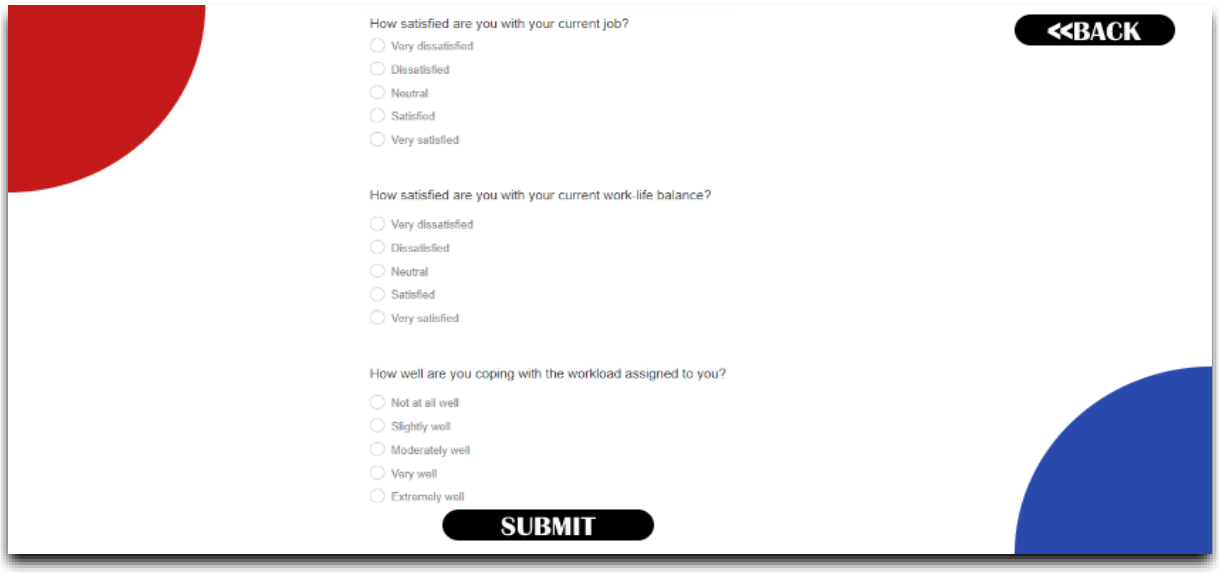


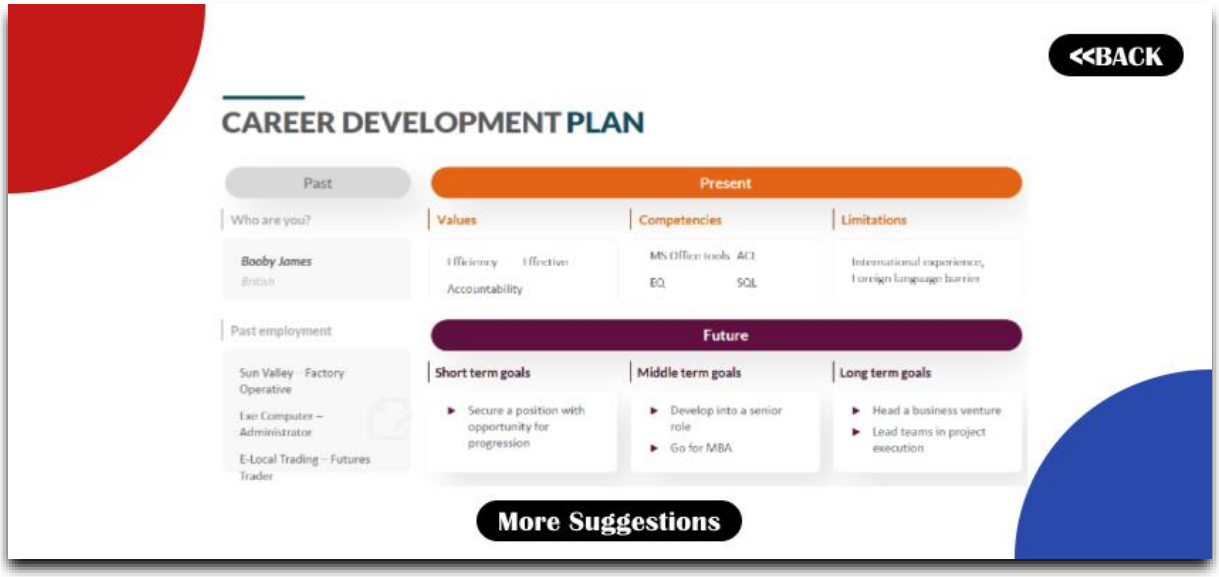
Career assessment tool:



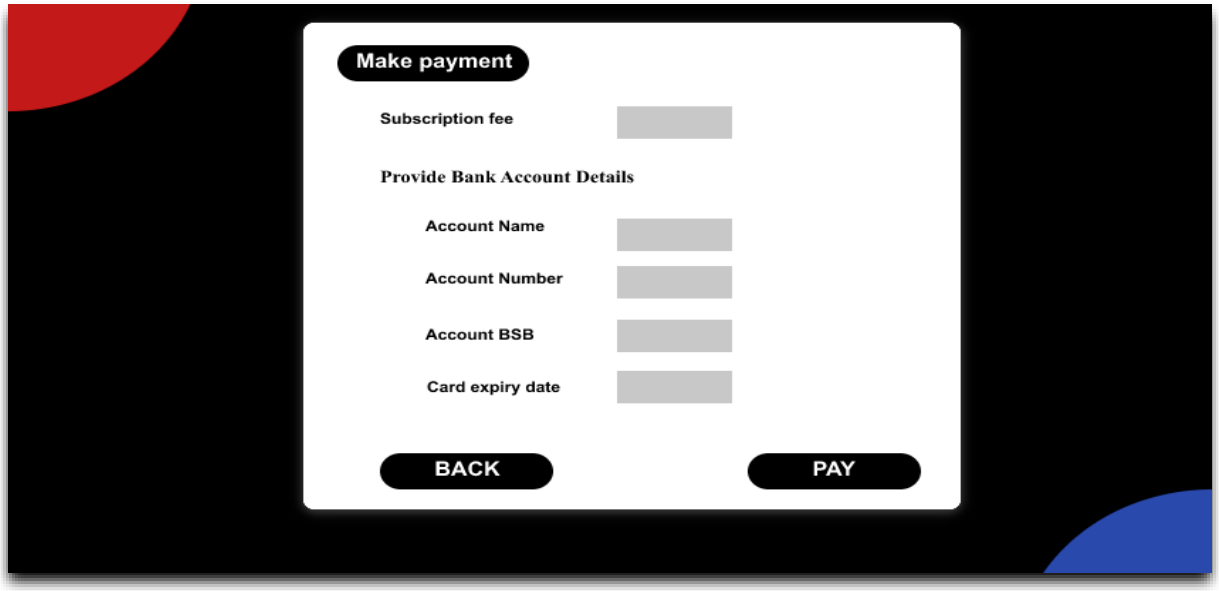


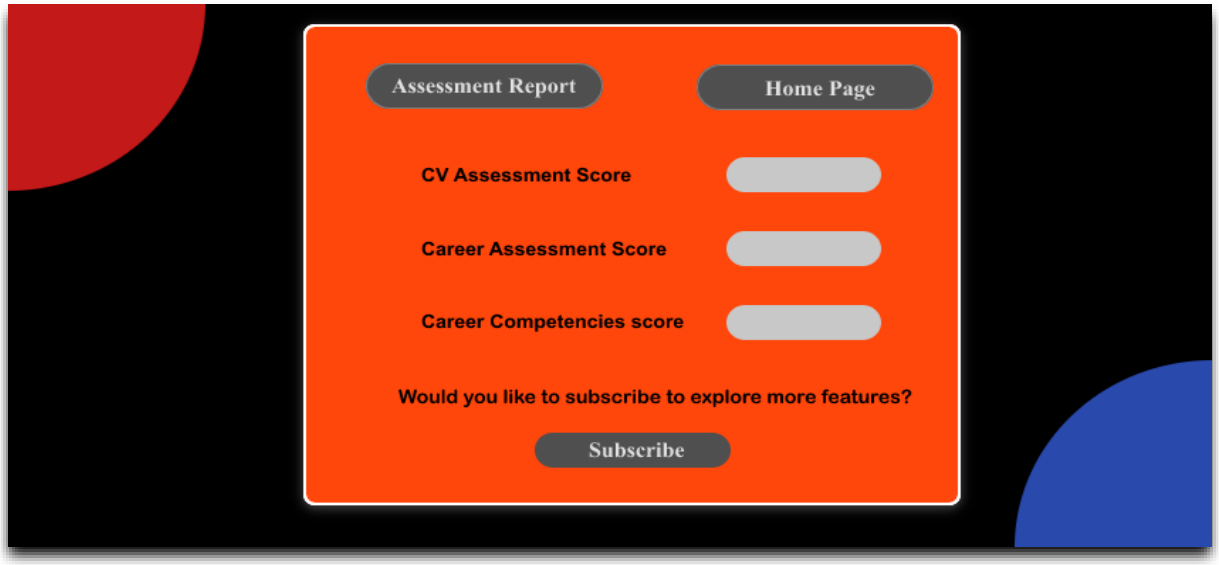
Career development planning tool:

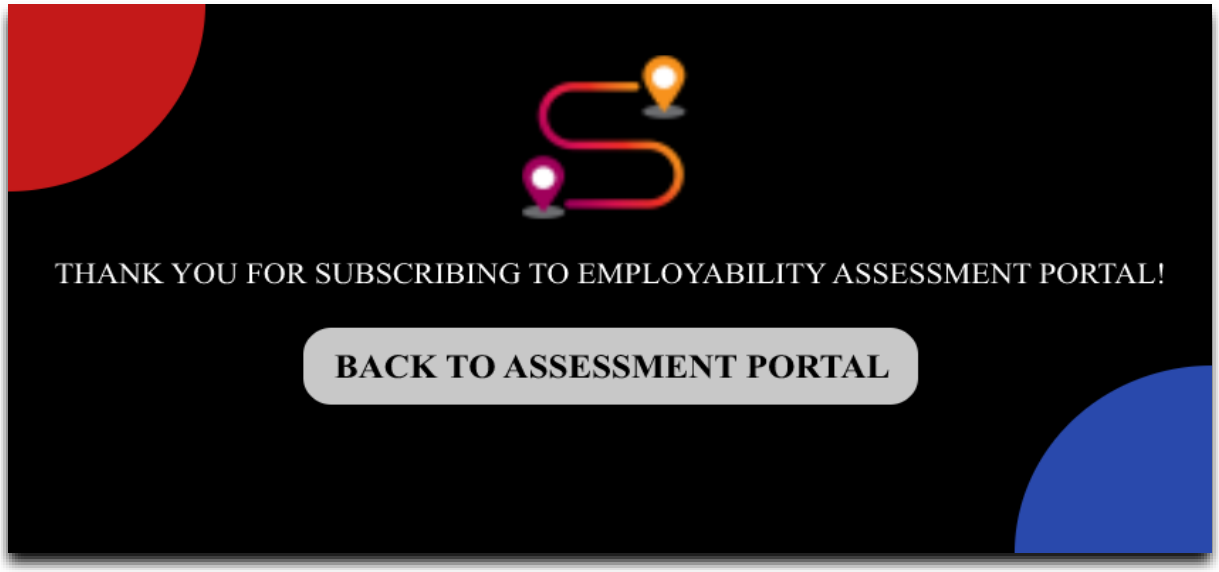




Subscription:







7.4 Assumptions

Following are certain assumptions about our target platform/system:

Expected number of users = over 1000/ month

Software libraries: H5P, Moodle LMS, PHP mailer, PHP Excel, jQuery UI, H5P Editor PHP Library, LinkedIn API, Google API, Facebook API, Instagram API, database abstraction library for MYSQL and PostgreSQL.

Database size: Over 30 database tables i.e., configuration, user profiles and information, logging system, available tools, questionnaire, module activities, and feedback etc.

Encoding mode = Quality

Key frame = 5

Frame rate = 60 fps

Audio bit rate = 32 kbps

Field order = Progressive and NTSC

Profile = Baseline

Level = 4.3

Render at Maximum Depth=On

Bitrate Encoding VBR 2 pass

Target Bitrate = 2

Maximum Bitrate = 2

Key Frame Distance = 75

Audio Format = ACC

Channels = Mono

Audio Quality = High

Audio Sample Rate = 32000 Hz

Audio Precedence = Bitrate

Audio Bitrate (kbps) = 32

7.5 External Dependencies

External dependency of our project is to work on upcoming sprint after the completion of previous sprint because we have divided the project in sprints to complete all development of the portal. We need to finish all sprints on the allocated time to achieve our main goal of the project. Dependencies frequently take the form of an approval. Project owner will be responsible for keeping track of external dependencies closely to ensure that the project is completed on schedule.

8.0 Statement of contributions

Student Name	Contributions
Muhammad Daniyal	Research about similar solutions, vision statement, organizational process model, structure, boundaries, and interfaces with project responsibilities, non-functional requirements, prototyping, user interface / interaction / software design
Sukhtindervir Kaur	Defining requirements, Introduction, High level project plan, software documentation, architecture objectives, wireframing of CV assessment tool and findings
Suraj Mahat	Preface, management objectives and priorities, assumptions, wireframing of career assessment tool with feedback pages and subscription pages
Pratik Lamichhane	Assumptions, dependencies, and constraints, wireframing of welcome / login / sign-up pages
Roshan Shrestha	Methods, tools, and techniques, external dependencies, wireframing of career development planning tool