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Homepage



We are **HDCTM** ✨

>About us

Welcome to **HDCTM** team!

We are a dynamic team comprised of five Computer Science students hailing from Swinburne University, proudly representing Group 1.3 in the COS20031 class during the vibrant Semester 3 of 2023.

Our mission centers on mastering IT project management and crafting digital solutions, including websites and web apps. As we advance, we aim to attain significant achievements and accolades while continually expanding our knowledge and capabilities.

Meet the team

	Mr. Lo Tuan Hung Profile <i>Leader</i>
	Mr. Luong Chi Duc Profile <i>IT professional</i>
	Mr. Nguyen Vu Duy Minh Profile <i>IT professional</i>
	Ms. Hau Linh Chi Profile <i>UI/UX Designer</i>
	Ms. Dao Khanh Nga Thi Profile <i>Business Analyst</i>

Resources



Search

Meeting Notes

- 2023-11-24 Weekly meeting
- 2023-11-17 Weekly meeting
- 2023-11-10 Weekly meeting
- 2023-11-03 Weekly meeting
- 2023-10-27 Weekly meeting

Important resources

- [Appendix 1: Team Profile](#)
- [Appendix 2: Meeting notes](#)
- [Working Agreement](#)

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Database

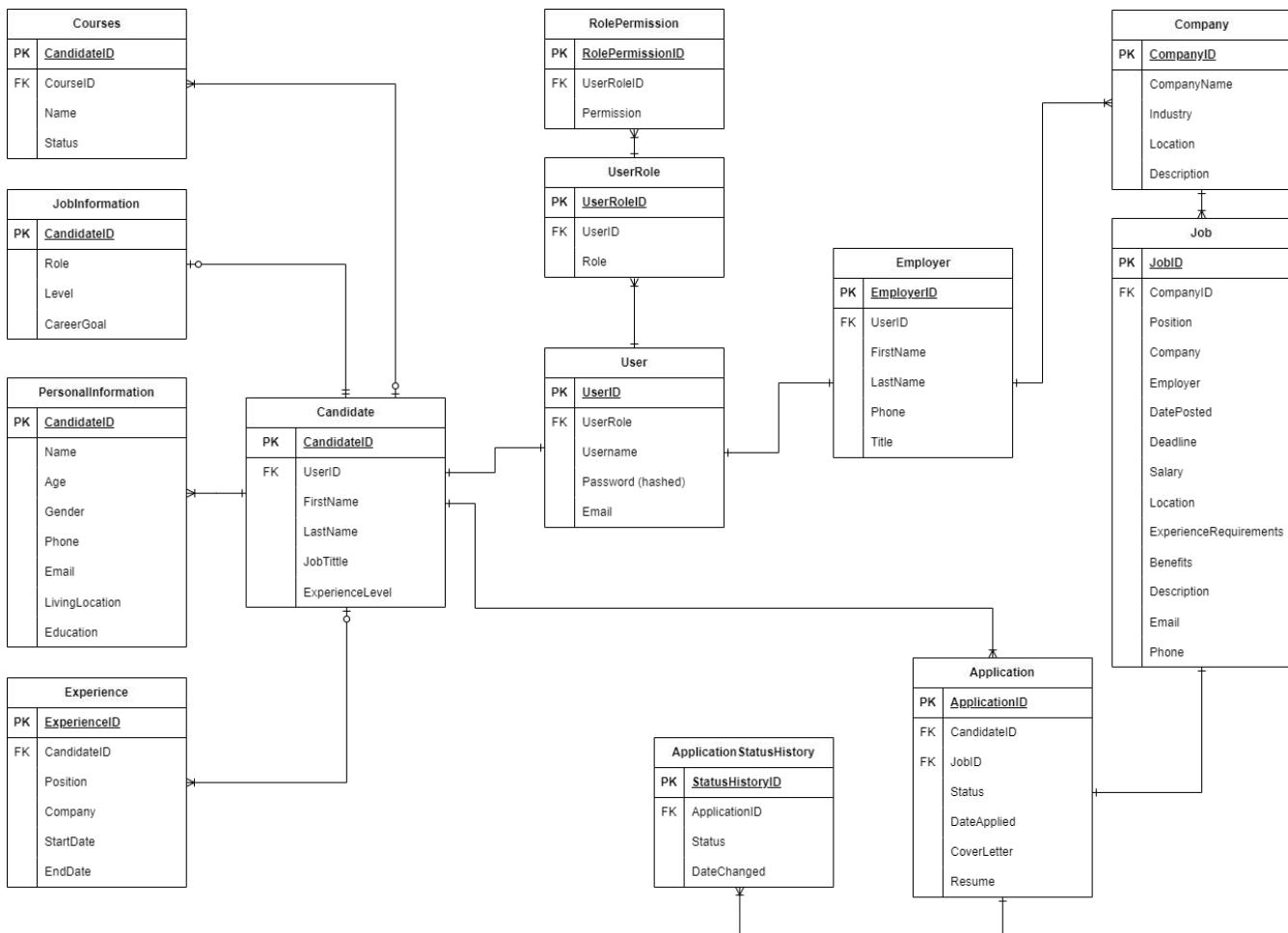
Review of ER diagram to normalise/denormalise, revise relationships (Week 5)

1. Introduction:

The ER diagram under review is designed to manage data related to job seekers, recruiters, jobs, and interviews. The primary objectives are to ensure data accuracy, optimize data retrieval efficiency, and align the database schema with specific business goals.

2. ER Diagram Overview:

Initial ER Diagram (From Project Proposal):



Entities:**• JobInformation:****◦ Attributes:**

- CandidateID (Primary Key), Role, Level, Career, Goal

◦ Relationships:

- One-to-One relationship with Candidate using CandidateID.

• Candidate:**◦ Attributes:**

- CandidateID (Primary Key), UserID (Foreign Key), FirstName, LastName, JobTitle, ExperienceLevel

◦ Relationships:

- One-to-One relationship with JobInformation using CandidateID.
- One-to-Many relationship with PersonalInformation using CandidateID.
- One-to-Many relationship with Education using CandidateID.
- One-to-Many relationship with Experience using CandidateID.
- One-to-Many relationship with User using UserID.
- One-to-Many relationship with Application using CandidateID.

• PersonalInformation:**◦ Attributes:**

- CandidateID (Primary Key), Name, Age, Gender, Phone, Email, LivingLocation

◦ Relationships:

- One-to-One relationship with Candidate using CandidateID.

• Education:**◦ Attributes:**

- EducationID (Primary Key)CandidateID (Foreign Key)DegreeInstitutionGraduationYearGPA

◦ Relationships:

- Many-to-One relationship with Candidate using CandidateID.

• Experience:**◦ Attributes:**

- ExperienceID (Primary Key), CandidateID (Foreign Key), Position, Company, StartDate, EndDate

◦ Relationships:

- Many-to-One relationship with Candidate using CandidateID.

• User:**◦ Attributes:**

- UserID (Primary Key), UserRoleID (Foreign Key) ,Username, Password (hashed), Email

◦ Relationships:

- One-to-Many relationship with Candidate using UserID.
- One-to-Many relationship with Employer using UserID.

• Company:**◦ Attributes:**

- CompanyID (Primary Key), CompanyName, Industry, Location, Description

◦ Relationships:

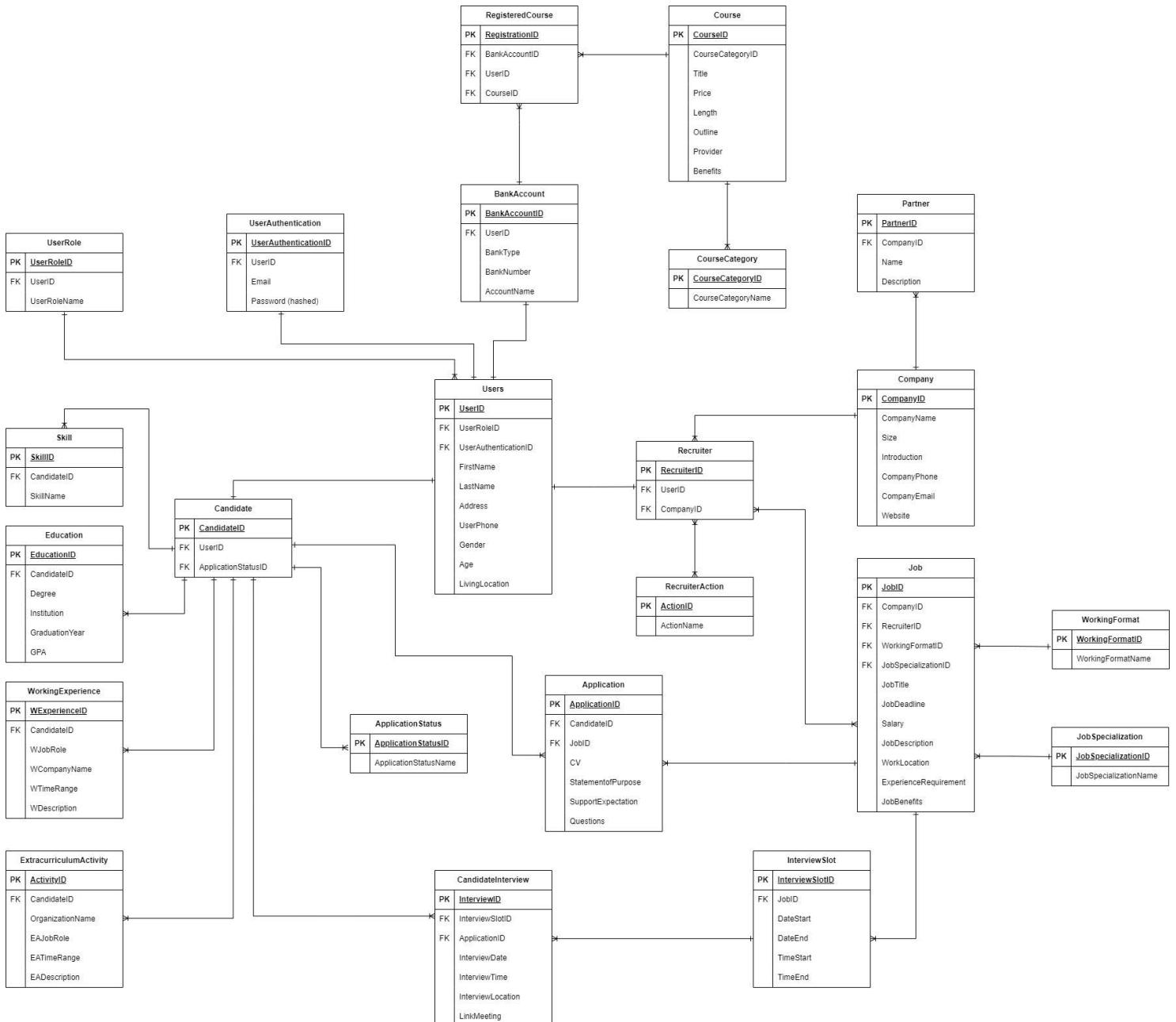
- One-to-Many relationship with Job using CompanyID.

• Job:**◦ Attributes:**

- JobID (Primary Key), CompanyID (Foreign Key) Position, Company, Employer, DatePosted, Deadline, Salary, Location, ExperienceRequirements, Benefits, Description, Email, Phone
- Relationships:
 - Many-to-One relationship with Company using CompanyID.
 - One-to-Many relationship with Application using JobID.
 - One-to-Many relationship with RecruiterInterview using JobID.
- Application:
 - Attributes:
 - ApplicationID (Primary Key), CandidateID (Foreign Key), JobID (Foreign Key), Status, DateApplied, CoverLetter, Resume
 - Relationships:
 - Many-to-One relationship with Candidate using CandidateID.
 - Many-to-One relationship with Job using JobID.
 - One-to-Many relationship with ApplicationStatusHistory using ApplicationID.
- ApplicationStatusHistory:
 - Attributes:
 - StatusHistoryID (Primary Key), ApplicationID (Foreign Key), Status, DateChanged
 - Relationships:
 - Many-to-One relationship with Application using ApplicationID.
- UserRole:
 - Attributes:
 - UserRoleID (Primary Key), UserID (Foreign Key), Role
 - Relationships:
 - One-to-Many relationship with User using UserRoleID.
 - One-to-Many relationship with RolePermission using UserRoleID.
- RolePermission:
 - Attributes:
 - RolePermissionID (Primary Key), UserRoleID (Foreign Key), Permission
 - Relationships:
 - Many-to-One relationship with UserRole using UserRoleID.
- Employer:
 - Attributes:
 - EmployerID (Primary Key), UserID (Foreign Key), FirstName, LastName, Phone, Title
 - Relationships:
 - One-to-Many relationship with User using UserID.
- Courses:
 - Attributes:
 - CandidateID (Primary Key), CourseID (Foreign Key), Name, Status
 - Relationships:
 - Many-to-One relationship with Candidate using CandidateID.

3. Normalization Assessment:

a. Modifications To The Entities And Attributes (From Progress Report (Technical view)):



In order to align the database schema with the specific structure of the website as part of the normalization process, several key adjustments were made to the ER diagram.

- **Users and UserAuthentication:**

- The Users table now contains all basic user information.
- The UserAuthentication entity was added for login and signup processes.

- **BankAccount:**

- BankAccount entity integrated for course registration, allowing users to store bank account details for registration.

- **Courses and CoursesCategory:**

- CoursesCategory is separated from Courses for improved course categorization.
- Multiple courses can now fall under the same category.

- **Candidate Profile Enhancement:**

- Skills, education, working experience, and extracurricular activities were added to provide a comprehensive overview of each candidate's qualifications and experiences,
- The foreign key to ApplicationStatus enables tracking of saved and applied jobs with application statuses.

- **Interview Management:**

- InterviewSlot was introduced to store available time slots set by recruiters.
- CandidateInterview records selected time slots when candidates schedule interviews.

- **Recruiter Actions:**

- The RecruiterAction entity serves as a repository for various actions performed by recruiters.
- These actions can influence candidate application statuses.

- **Working Format and Job Specialization:**

- WorkingFormat and JobSpecialization tables were added and linked to the "Jobs" table, enabling the jobs filtering function of the website.

- **Company Partners:**

- "Partner" entity incorporated to reflect partnerships associated with companies.

- **Excluded Entities:**

- Entities such as ApplicationStatusHistory and RolePermission were excluded from the diagram as they were deemed unnecessary.

b. Normalization Assessment:

- **First Normal Form (1NF):**

- All entities are in 1NF.
- Each attribute within an entity contains only atomic (indivisible) values.
- There are no repeating groups or arrays of values within any attribute.

- **Second Normal Form (2NF):**

- All non-key attributes are fully functionally dependent on the entire primary key. => The entities in the provided ER diagram are in 2NF. For example:

- In the Education entity, attributes (Degree, Institution, GraduationYear, GPA) are dependent on the CandidateID.
- In the WorkingExperience entity, attributes (Position, Company, StartDate, EndDate) are dependent on the CandidateID.

- **Third Normal Form (3NF):**

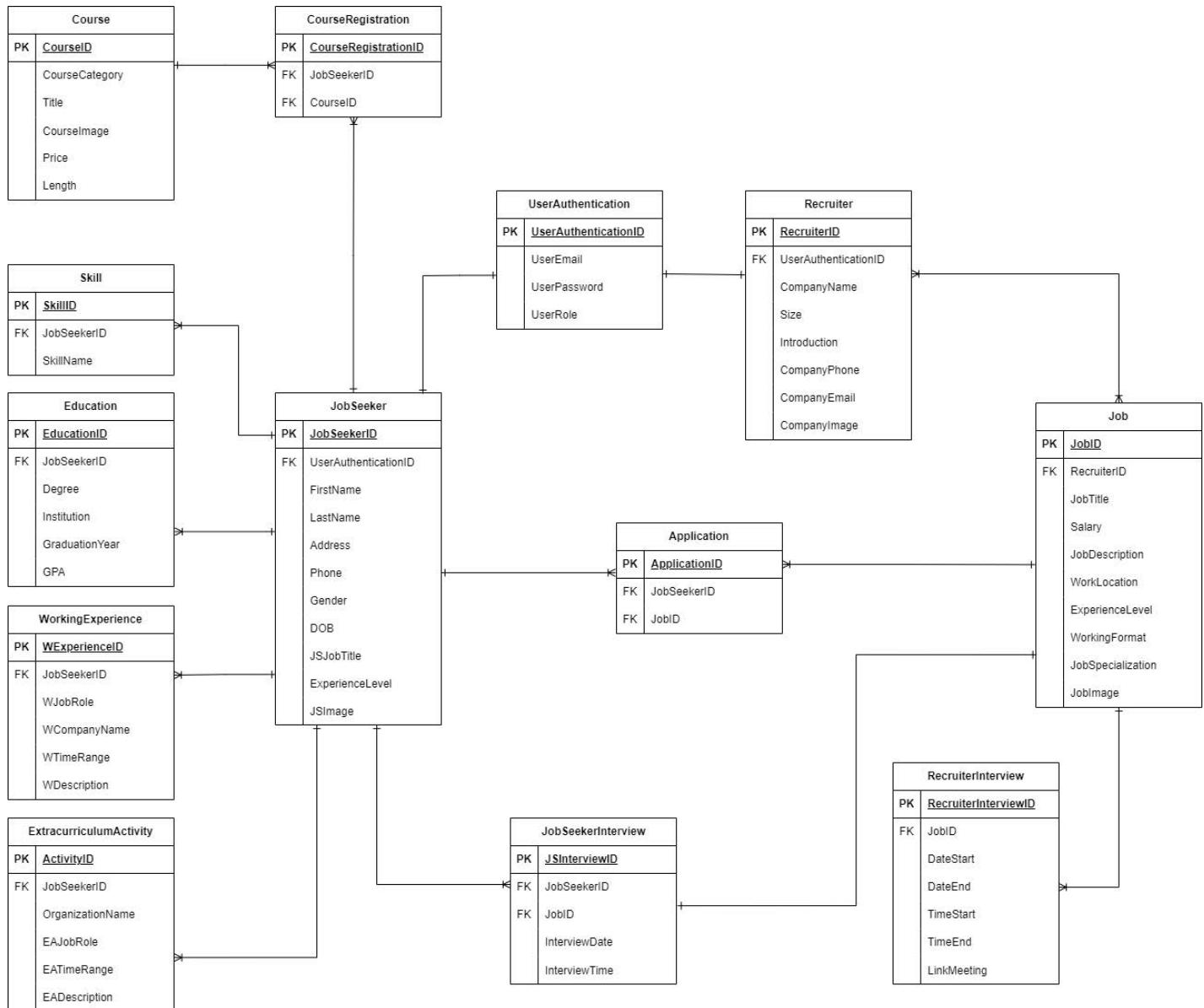
- There are no transitive dependencies => The entities in the provided ER diagram is in 3NF. For example:

- In the Job entity, attributes (Position, DatePosted, Deadline, Salary, Location, ExperienceRequirements, Benefits, Description, Email, Phone) are dependent only on the primary key (JobID), and there are no transitive dependencies.

In conclusion, the ER diagram exhibits a commendable level of normalization up to **Third Normal Form (3NF)**, ensuring data integrity, efficient storage, and well-defined relationships, with any further normalization decisions depending on specific use cases and performance considerations.

4. Denormalization Assessment:

a. Modifications To The Entities And Attributes:



In streamlining our database for improved query performance, we've implemented strategic changes through denormalization. Here's a quick overview:

- **Tables and Attributes Excluded:**
 - BankAccount, UserRole, ApplicationStatus, RecruiterAction, and Partner tables were removed from the schema.
- **Attribute Incorporation:**
 - WorkingFormat and JobSpecialization attributes were added directly to the Job table.
 - CourseCategory attribute was introduced as part of the Course table.
- **Consolidation of Tables:**
 - The Recruiter table now serves the function of a Company table, potentially reducing the need for additional queries.
- **Entity-Specific Attributes:**
 - Attributes in the Users table are now specific to the Candidate entity (JobSeeker).
 - The Users table was excluded, and its attributes (which were previously specific to the JobSeeker table) were merged into the JobSeeker table.
- **Change in Data Retrieval Flow:**
 - The starting point for data retrieval is now userauthentication, followed by navigation to the respective JobSeeker or Recruiter tables.

b. Trade-offs Evaluation Between Normalization and Denormalization:

In this specific context, the implementation of denormalization is justified due to the identified need to streamline query performance and reduce redundancy in the database. By sacrificing some aspects of normalization, such as avoiding redundant data, we prioritize quicker data retrieval and simplified query structures, aligning with the system's goals. Denormalization becomes a strategic choice to optimize performance in scenarios where read operations are frequent and the trade-offs in terms of redundancy are deemed acceptable.

5. Relationship Revisions:

a. Cardinality and Optionality:

- UserAuthentication - JobSeeker:
 - Cardinality: One-to-One (1:1)
 - Optionality: Mandatory on the JobSeeker side (1), as each JobSeeker must have a corresponding UserAuthentication.
- JobSeeker - CourseRegistration:
 - Cardinality: One-to-Many (1:N)
 - Optionality: Mandatory on the JobSeeker side (1), as a JobSeeker may register for multiple courses.
- JobSeeker - Skill:
 - Cardinality: One-to-Many (1:N)
 - Optionality: Optional on the Skill side (0..N), as a JobSeeker may have zero or multiple skills.
- JobSeeker - Education:
 - Cardinality: One-to-Many (1:N)
 - Optionality: Optional on the Education side (0..N), as a JobSeeker may have zero or multiple educational qualifications.
- JobSeeker - WorkingExperience:
 - Cardinality: One-to-Many (1:N)
 - Optionality: Optional on the WorkingExperience side (0..N), as a JobSeeker may have zero or multiple work experiences.
- JobSeeker - ExtracurriculumActivity:
 - Cardinality: One-to-Many (1:N)
 - Optionality: Optional on the ExtracurriculumActivity side (0..N), as a JobSeeker may have zero or multiple extracurricular activities.
- UserAuthentication - Recruiter:
 - Cardinality: One-to-One (1:1)
 - Optionality: Mandatory on the Recruiter side (1), as each Recruiter must have a corresponding UserAuthentication.

- Recruiter - Job:
 - Cardinality: One-to-Many (1:N)
 - Optionality: Mandatory on the Job side (1), as a Recruiter may post multiple job listings.
- JobSeeker - JobSeekerInterview:
 - Cardinality: One-to-Many (1:N)
 - Optionality: Optional on the JobSeekerInterview side (0..N), as a JobSeeker may undergo zero or multiple interviews.
- Recruiter - RecruiterInterview:
 - Cardinality: One-to-Many (1:N)
 - Optionality: Optional on the RecruiterInterview side (0..N), as a Recruiter may set zero or multiple interviews.
- Job - Application:
 - Cardinality: One-to-Many (1:N)
 - Optionality: Optional on the Application side (0..N), as a Job may receive zero or multiple applications.

b. Participation Constraints:

- UserAuthentication - JobSeeker:
 - Mandatory participation on the JobSeeker side, as each JobSeeker must be associated with a UserAuthentication.
- JobSeeker - CourseRegistration:
 - Mandatory participation on the JobSeeker side, as each JobSeeker must register for at least one course.
- JobSeeker - Skill:
 - Participation is optional on the Skill side, as a JobSeeker may or may not possess skills.
- JobSeeker - Education:
 - Participation is optional on the Education side, as a JobSeeker may or may not have educational qualifications.
- JobSeeker - WorkingExperience:
 - Participation is optional on the WorkingExperience side, as a JobSeeker may or may not have work experience.
- JobSeeker - ExtracurriculumActivity:
 - Participation is optional on the ExtracurriculumActivity side, as a JobSeeker may or may not be involved in extracurricular activities.
- UserAuthentication - Recruiter:
 - Mandatory participation on the Recruiter side, as each Recruiter must be associated with a UserAuthentication.
- Recruiter - Job:
 - Mandatory participation on the Job side, as each Recruiter must post at least one job listing.
- JobSeeker - JobSeekerInterview:
 - Participation is optional on the JobSeekerInterview side, as a JobSeeker may or may not undergo interviews.
- Recruiter - RecruiterInterview:
 - Participation is optional on the RecruiterInterview side, as a Recruiter may or may not set interviews.
- Job - Application:
 - Participation is optional on the Application side, as a Job may or may not receive applications.

6. Conclusion:

Summarize the key changes made to the ER diagram, including normalization/denormalization decisions and relationship revisions. Discuss the overall impact on the design and any trade-offs considered.

Major changes to the Final ER Diagram:

The primary modification made to the ER diagram involved opting for denormalization, which led to a reduction in the number of entities overall.

Here are some notable changes:

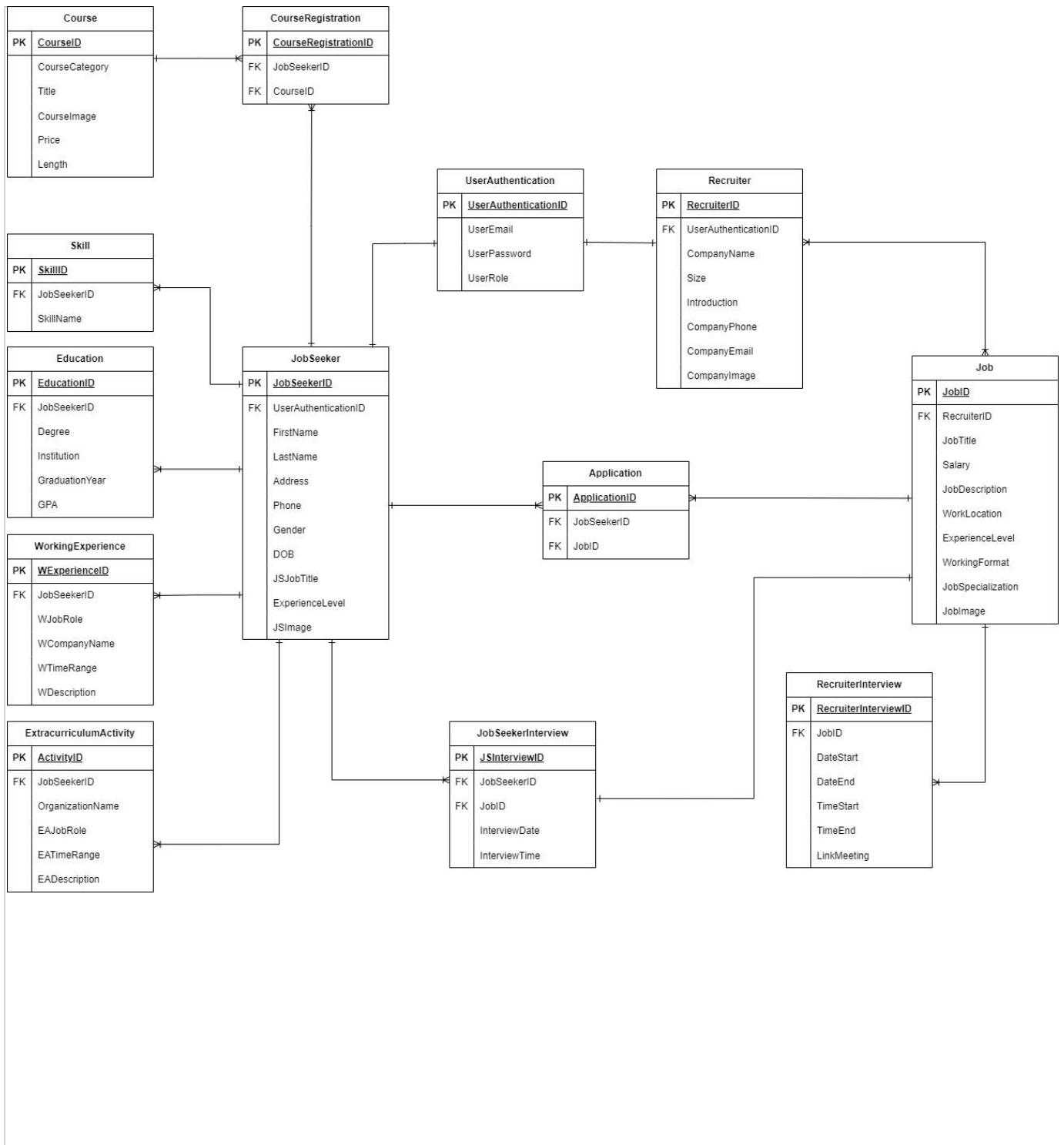
- Eliminated several tables from the schema.
- The UserAuthentication entity now includes a UserRole attribute to facilitate Role-based access control.
- Excluded the Users table, merging its relevant attributes into the JobSeeker table.
- Repurposed the Recruiter table to function as a Company table, potentially reducing additional queries.
- Most tables that were splitted during the normalization process are now added back to the original tables as attributes during the denormalization process to improve the query performance.
- Altered the starting point for data retrieval to UserAuthentication, followed by navigation to the respective JobSeeker or Recruiter tables.

Final Normalization Level Of The ER Diagram:

- **First Normal Form (1NF):**
 - All entities are in 1NF.
 - All attributes contain atomic values, and there are no repeating groups. For example:
 - In the JobSeeker table, the ExtracurriculumActivity attribute contains individual and non-repeating values such as OrganizationName, EAJobRole, EATimeRange, and EADescription.
- **Second Normal Form (2NF):**
 - All non-prime attributes are fully functionally dependent on the entire primary key => The entities in the provided ER diagram are in 2NF. For example:
 - In the Course table, where CourseID is the primary key, attributes like Title, Price, and Length depend solely on the CourseID.
- **Third Normal Form (3NF):**
 - There are no transitive dependencies => The entities in the provided ER diagram is in 3NF. For example:
 - In the Recruiter table, attributes like CompanyName, Size, Introduction, CompanyPhone, CompanyEmail, and CompanyImage appear to depend directly on the primary key RecruiterID without transitive dependencies.

In conclusion, the ER diagram exhibits a commendable level of normalization up to **Third Normal Form (3NF)**, ensuring data integrity, efficient storage, and well-defined relationships, with any further normalization decisions depending on specific use cases and performance considerations.

Final Version Of The ER Diagram:



Overview Of The Final ER Diagram:

Entities:

- **UserAuthentication:**
 - *Attributes:*
 - UserAuthenticationID (Primary Key), UserEmail, UserPassword, UserRole
 - *Relationships:*
 - One-to-One relationship with JobSeeker using UserAuthenticationID.
 - One-to-One relationship with Recruiter using UserAuthenticationID.

- **JobSeeker:**
 - *Attributes:*
 - JobSeekerID (Primary Key), UserAuthenticationID (Foreign Key), FirstName, LastName, Address, Phone, Gender, DOB, JSJobTitle, ExperienceLevel, JSImage
 - *Relationships:*
 - One-to-One relationship with UserAuthentication using UserAuthenticationID.
 - One-to-Many relationship with CourseRegistration using JobSeekerID.
 - One-to-Many relationship with Skill using JobSeekerID.
 - One-to-Many relationship with Education using JobSeekerID.
 - One-to-Many relationship with WorkingExperience using JobSeekerID.
 - One-to-Many relationship with ExtracurriculumActivity using JobSeekerID.
 - One-to-Many relationship with JobSeekerInterview using JobSeekerID.
 - One-to-Many relationship with Application using JobSeekerID.
- **Course:**
 - *Attributes:*
 - CourseID (Primary Key), CourseCategory, Title, Price, Length
 - *Relationships:*
 - Many-to-Many relationship with JobSeeker through CourseRegistration.
- **Skill:**
 - *Attributes:*
 - SkillID (Primary Key), JobSeekerID (Foreign Key), SkillName
 - *Relationships:*
 - Many-to-One relationship with JobSeeker using JobSeekerID.
- **Education:**
 - *Attributes:*
 - EducationID (Primary Key), JobSeekerID (Foreign Key), Degree, Institution, GraduationYear, GPA
 - *Relationships:*
 - Many-to-One relationship with JobSeeker using JobSeekerID.
- **WorkingExperience:**
 - *Attributes:*
 - WExperienceID (Primary Key), JobSeekerID (Foreign Key), WJobRole, WCompanyName, WTimeRange, WDescription
 - *Relationships:*
 - Many-to-One relationship with JobSeeker using JobSeekerID.
- **ExtracurriculumActivity:**
 - *Attributes:*
 - ActivityID (Primary Key), JobSeekerID (Foreign Key), OrganizationName, EAJobRole, EATimeRange, EADescription
 - *Relationships:*
 - Many-to-One relationship with JobSeeker using JobSeekerID.
- **JobSeekerInterview:**
 - *Attributes:*
 - JSInterviewID (Primary Key), JobSeekerID (Foreign Key), JobID (Foreign Key), InterviewDate, InterviewTime, LinkMeeting
 - *Relationships:*
 - Many-to-One relationship with JobSeeker using JobSeekerID.
 - Many-to-One relationship with Job using JobID.
- **Recruiter:**

- *Attributes:*
 - RecruiterID (Primary Key), UserAuthenticationID (Foreign Key), CompanyName, Size, Introduction, CompanyPhone, CompanyEmail, CompanyImage
- *Relationships:*
 - One-to-One relationship with UserAuthentication using UserAuthenticationID.
 - One-to-Many relationship with Job using RecruiterID.
 - One-to-Many relationship with RecruiterInterview using RecruiterID.
- **Job:**
 - *Attributes:*
 - JobID (Primary Key), CompanyID (Foreign Key), JobTitle, Salary, JobDescription, WorkLocation, ExperienceLevel, WorkingFormat, JobSpecialization, JobImage
 - *Relationships:*
 - Many-to-One relationship with Company using CompanyID.
 - One-to-Many relationship with Application using JobID.
 - One-to-Many relationship with RecruiterInterview using JobID.
- **RecruiterInterview:**
 - *Attributes:*
 - RecruiterInterviewID (Primary Key), JobID (Foreign Key), DateStart, DateEnd, TimeStart, TimeEnd
 - *Relationships:*
 - Many-to-One relationship with Job using JobID.
- **Application:**
 - *Attributes:*
 - ApplicationID (Primary Key), JobID (Foreign Key), JobSeekerID (Foreign Key)
 - *Relationships:*
 - Many-to-One relationship with JobSeeker using JobSeekerID.
 - Many-to-One relationship with Job using JobID.

Physical Database Creation (Week 6)

-- Drop tables if they exist

```
DROP TABLE IF EXISTS RecruiterInterview;
DROP TABLE IF EXISTS JobSeekerInterview;
DROP TABLE IF EXISTS ExtracurriculumActivity;
DROP TABLE IF EXISTS WorkingExperience;
DROP TABLE IF EXISTS Education;
DROP TABLE IF EXISTS Skill;
DROP TABLE IF EXISTS CourseRegistration;
DROP TABLE IF EXISTS Course;
DROP TABLE IF EXISTS Application;
DROP TABLE IF EXISTS Job;
DROP TABLE IF EXISTS Recruiter;
DROP TABLE IF EXISTS JobSeeker;
DROP TABLE IF EXISTS UserAuthentication;
```

-- Create tables

-- Create UserAuthentication table

```
CREATE TABLE UserAuthentication (
    UserAuthenticationID INT PRIMARY KEY AUTO_INCREMENT,
    UserEmail VARCHAR(255) NOT NULL,
    UserPassword VARCHAR(255) NOT NULL,
    UserRole VARCHAR(50) NOT NULL
);
```

-- Create JobSeeker table

```
CREATE TABLE JobSeeker (
    JobSeekerID int(11) PRIMARY KEY AUTO_INCREMENT,
    UserAuthenticationID int(11) NOT NULL,
    FirstName varchar(50) NOT NULL,
    LastName varchar(50) NOT NULL,
    Address varchar(255) NOT NULL,
    Phone varchar(20) NOT NULL,
    Gender varchar(100) NOT NULL,
    DOB date NOT NULL,
    JSJobTitle varchar(100) NOT NULL,
    ExperienceLevel varchar(50) NOT NULL,
    JSImage varchar(255) NOT NULL,
    FOREIGN KEY (UserAuthenticationID) REFERENCES UserAuthentication(UserAuthenticationID)
);
```

-- Create Course table

```
CREATE TABLE Course (
    CourseID INT PRIMARY KEY AUTO_INCREMENT,
    CourseCategory VARCHAR(255) NOT NULL CHECK (
        CourseCategory IN ('F&B', 'Beauty & Spa', 'Tourism & Hospitality')
    ),
    Title VARCHAR(100) NOT NULL,
    Price DECIMAL(10, 2) NOT NULL CHECK (Price >= 0),
    Length INT NOT NULL,
```

```

CourseImage VARCHAR(255) NOT NULL
);

-- Create CourseRegistration table
CREATE TABLE CourseRegistration (
    CourseRegistrationID INT PRIMARY KEY AUTO_INCREMENT,
    JobSeekerID INT NOT NULL,
    CourseID INT NOT NULL,
    FOREIGN KEY (CourseID) REFERENCES Course(CourseID),
    FOREIGN KEY (JobSeekerID) REFERENCES JobSeeker(JobSeekerID)
);

-- Create Skill table
CREATE TABLE Skill (
    SkillID INT PRIMARY KEY AUTO_INCREMENT,
    JobSeekerID INT NOT NULL,
    SkillName VARCHAR(255) NOT NULL,
    FOREIGN KEY (JobSeekerID) REFERENCES JobSeeker(JobSeekerID)
);

-- Create Education table
CREATE TABLE Education (
    EducationID INT PRIMARY KEY AUTO_INCREMENT,
    JobSeekerID INT NOT NULL,
    Degree VARCHAR(100) NOT NULL,
    Institution VARCHAR(255) NOT NULL,
    GraduationYear INT NOT NULL CHECK (GraduationYear >= 1900),
    GPA DECIMAL(3, 2) NOT NULL CHECK (GPA >= 0 AND GPA <= 4),
    FOREIGN KEY (JobSeekerID) REFERENCES JobSeeker(JobSeekerID)
);

-- Create WorkingExperience table
CREATE TABLE WorkingExperience (
    WExperienceID INT PRIMARY KEY AUTO_INCREMENT,
    JobSeekerID INT NOT NULL,
    WJobRole VARCHAR(100) NOT NULL,
    WCompanyName VARCHAR(255) NOT NULL,
    WTimeRange VARCHAR(50) NOT NULL,
    WDescription TEXT NOT NULL,
    FOREIGN KEY (JobSeekerID) REFERENCES JobSeeker(JobSeekerID)
);

-- Create ExtracurriculumActivity table
CREATE TABLE ExtracurriculumActivity (
    ActivityID INT PRIMARY KEY AUTO_INCREMENT,
    JobSeekerID INT NOT NULL,
    OrganizationName VARCHAR(255) NOT NULL,
    EAJobRole VARCHAR(100) NOT NULL,
    EATimeRange VARCHAR(50) NOT NULL,
    EADescription TEXT NOT NULL,
    FOREIGN KEY (JobSeekerID) REFERENCES JobSeeker(JobSeekerID)
);

```

```

-- Create Recruiter table
CREATE TABLE Recruiter (
    RecruiterID INT PRIMARY KEY AUTO_INCREMENT,
    UserAuthenticationID INT NOT NULL,
    CompanyName VARCHAR(255) NOT NULL,
    Size INT NOT NULL,
    Introduction TEXT NOT NULL,
    CompanyPhone VARCHAR(20) NOT NULL,
    CompanyEmail VARCHAR(255) NOT NULL,
    CompanyImage VARCHAR(255) NOT NULL,
    FOREIGN KEY (UserAuthenticationID) REFERENCES UserAuthentication(UserAuthenticationID)
);

-- Create Job table
CREATE TABLE Job (
    JobID INT PRIMARY KEY AUTO_INCREMENT,
    RecruiterID INT NOT NULL,
    JobTitle VARCHAR(100) NOT NULL,
    Salary DECIMAL(10, 2) NOT NULL CHECK (Salary >= 0),
    JobDescription TEXT NOT NULL,
    WorkLocation VARCHAR(255) NOT NULL,
    ExperienceLevel VARCHAR(255) NOT NULL CHECK (
        ExperienceLevel IN ('Internship', 'Entry', 'Junior', 'Senior')
    ),
    WorkingFormat VARCHAR(255) NOT NULL CHECK (
        WorkingFormat IN ('Remote', 'Hybrid', 'Online', 'Offline')
    ),
    JobSpecialization VARCHAR(255) NOT NULL CHECK (
        JobSpecialization IN ('Beauty & Spa', 'F&B', 'Tourism & Hospitality', 'Event')
    ),
    JobImage VARCHAR(255) NOT NULL,
    FOREIGN KEY (RecruiterID) REFERENCES Recruiter(RecruiterID)
);

-- Create JobSeekerInterview table
CREATE TABLE JobSeekerInterview (
    JSInterviewID INT PRIMARY KEY AUTO_INCREMENT,
    JobSeekerID INT NOT NULL,
    JobID INT NOT NULL,
    InterviewDate DATE,
    InterviewTime TIME,
    FOREIGN KEY (JobSeekerID) REFERENCES JobSeeker(JobSeekerID),
    FOREIGN KEY (JobID) REFERENCES Job(JobID)
);

-- Create RecruiterInterview table
CREATE TABLE RecruiterInterview (
    RecruiterInterviewID INT PRIMARY KEY AUTO_INCREMENT,
    JobID INT NOT NULL,
    DateStart DATE,
    DateEnd DATE,
    TimeStart TIME,
    TimeEnd TIME,

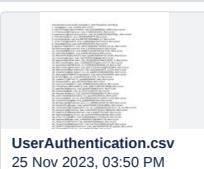
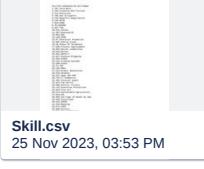
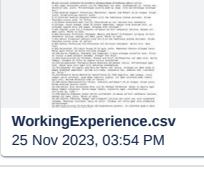
```

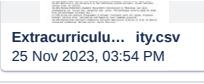
```
LinkMeeting VARCHAR(255),
FOREIGN KEY (JobID) REFERENCES Job(JobID)
);

-- Create Application table
CREATE TABLE Application (
    ApplicationID INT PRIMARY KEY AUTO_INCREMENT,
    JobSeekerID INT NOT NULL,
    JobID INT NOT NULL,
    FOREIGN KEY (JobID) REFERENCES Job(JobID),
    FOREIGN KEY (JobSeekerID) REFERENCES JobSeeker(JobSeekerID)
);
```

Document On Data Creation And Null Values (Week 7)

- Consequently, data testing is currently limited to approximately 1000-2000 records per table due to the limitations of the phpMyAdmin platform. In addition, we have created simulated datasets containing 1 million records per table, and you can access both sets of data here: [s104181721_db - Google Drive](https://drive.google.com/drive/folders/104181721_db).
- The type and format of data generated follow the rules of the phpMyAdmin platform and it allows the project to run smoothly with reasonably tested data.
- We used [Data Generator | CSV, SQL, JSON, XML, Excel](#) to generate data, following the data type in the ER diagram.
- The table below shows the data generated for the quick test via phpMyAdmin and Xampp:

Mock data	Table Name	Records	Implementation Progress
 UserAuthentication.csv 25 Nov 2023, 03:50 PM	UserAuthentication	2000	DONE
 JobSeeker.csv 25 Nov 2023, 03:51 PM	JobSeeker	1000	DONE
 CourseRegistration.csv 25 Nov 2023, 03:51 PM	CourseRegistration	1000	DONE
 Course.csv 25 Nov 2023, 03:53 PM	Course	1000	DONE
 Skill.csv 25 Nov 2023, 03:53 PM	Skill	1000	DONE
 Education.csv 25 Nov 2023, 03:53 PM	Education	1000	DONE
 WorkingExperience.csv 25 Nov 2023, 03:54 PM	WorkingExperience	1000	DONE
	ExtracurriculumActivity	1000	DONE

 Extracurriculu... ity.csv 25 Nov 2023, 03:54 PM			
 JobSeekerInterview.csv 25 Nov 2023, 03:54 PM	JobSeekerInterview	1000	DONE
 Recruiter.csv 25 Nov 2023, 03:55 PM	Recruiter	1000	DONE
 Job.csv 25 Nov 2023, 03:55 PM	Job	1000	DONE
 RecruiterInterview.csv 25 Nov 2023, 03:55 PM	RecruiterInterview	1000	DONE
 Application.csv 25 Nov 2023, 03:55 PM	Application	1000	DONE

Use cases and SQL statements, transactions & Performance (indexes) (Week 8+9)

Review use cases from the point of view of speed. (2023-10-30 On-class Discussion)

Use Cases

1. Implement role-based access control and Develop a secure user authentication system

a. User Story:

- As an administrator, I want to assign roles and permissions to users easily to ensure data security.
- As a user, I want a reliable and secure login process to protect my personal data and account information.

b. Page Implemented in Design

- 15. Sign up - Role selection
- 16. Sign up - Gmail & Password
- 17. Sign up - Information - Normal User
- 18. Log in

c. Tables Used in Database

- UserAuthentication

d. Index Usage Considerations

In recognition of the frequent usage of the *UserEmail* attributes within the *UserAuthentication* entity, it would be beneficial to implement indexing on these attributes to enhance query performance and optimize database operations.

Example query before adding index:

```
SELECT * FROM UserAuthentication WHERE UserEmail = 'gmarcombe5y@indiegogo.com';
```

The screenshot shows the phpMyAdmin interface with the following details:

- Server:** Feenix MariaDB (MySQL) > Database: s104181721_db
- Structure, SQL, Search, Query, Export, Import, Operations, Routines, Tracking, Designer, Central columns:** These tabs are visible at the top.
- Show query box:** A message indicates "Your SQL query has been executed successfully."
- EXPLAIN output:**

```
EXPLAIN SELECT * FROM UserAuthentication WHERE UserEmail = 'gmarcombe5y@indiegogo.com';
```

The EXPLAIN output table shows the execution plan:

ID	select_type	table	type	possible_keys	key	key_len	ref	rows	Extra
1	SIMPLE	UserAuthentication	const	UserEmail	UserEmail	257	const	1	
- Query results operations:** Buttons for Print, Copy to clipboard, Create view.
- Bookmark this SQL query:** Fields for Label and a checkbox for "Let every user access this bookmark".
- Help:** A link to the MySQL manual.
- Console:** Shows the session ID 104181721.

Using EXPLAIN to review the efficiency of the query

Adding indexes to the columns:

```
CREATE INDEX idx_UserAuthentication_UserEmail ON UserAuthentication(UserEmail);
```

After running the query again:

id	select_type	table	type	possible_keys	key	key_len	ref	rows	Extra
1	SIMPLE	UserAuthentication	const	UserEmail_idx	UserEmail	257	const	1	

Using EXPLAIN to review the efficiency of the query

e. Conclusion

In conclusion, based on the analysis, the decision is to **NOT USE** indexes for the complex query involving *UserEmail* column in the *UserAuthentication* table, as the query optimizer is not effectively utilizing the indexes according to the absence of "Using index" in the EXPLAIN output.

2. Enable personalized courses/jobs recommendations

a. User Story:

As a user, I want to receive jobs/courses recommendations tailored to my skills and career goals for a better experience.

b. Page Implemented in Design

- 3. Courses
- 5. Job Opportunities

c. Tables Used in Database

- Course
- Job

d. Index Usage Considerations

To provide tailored job and course recommendations based on a user's preferences, a sequence of SELECT queries is executed to retrieve pertinent information aligned with the user's job title or specified filters. This ensures a personalized experience by delivering job and course suggestions that match the user's criteria.

The decision to add indexes to the *JobSeekerID* column for the *Skill*, *Education*, *WorkingExperience*, and *ExtracurriculumActivity* tables was considered. However, since *JobSeekerID* serves as a foreign key in these tables, an index on this column is automatically generated. Consequently, there is no need to manually add an index to this column in this particular scenario.

Example queries:

Retrieving F&B courses when job seeker's job title contains 'Bar':

```
SELECT * FROM s104181721_db.Course WHERE CourseCategory = 'F&B' LIMIT 5;
```

<code>id</code>	<code>select_type</code>	<code>table</code>	<code>type</code>	<code>possible_keys</code>	<code>key</code>	<code>key_len</code>	<code>ref</code>	<code>rows</code>	<code>Extra</code>
1	SIMPLE	Course	ALL	NULL	NULL	NULL	NULL	1022	Using where

Using EXPLAIN to review the efficiency of the query

Retrieving F&B courses when job seeker's job title contains 'ist':

```
SELECT * FROM s104181721_db.Course WHERE CourseCategory = 'Beauty & Spa' LIMIT 5;
```

<code>id</code>	<code>select_type</code>	<code>table</code>	<code>type</code>	<code>possible_keys</code>	<code>key</code>	<code>key_len</code>	<code>ref</code>	<code>rows</code>	<code>Extra</code>
1	SIMPLE	Course	ALL	NULL	NULL	NULL	NULL	1022	Using where

Using EXPLAIN to review the efficiency of the query

Retrieving F&B courses when job seeker's job title contains 'Tour':

```
SELECT * FROM s104181721_db.Course WHERE CourseCategory = 'Tourism & Hospitality' LIMIT 5;
```

EXPLAIN SELECT * FROM s104181721_db.Course WHERE CourseCategory = 'Tourism & Hospitality' LIMIT 5;

Id	select_type	table	type	possible_keys	key	key_len	ref	rows	Extra
1	SIMPLE	Course	ALL	NULL	NULL	NULL	NULL	1022	Using where

Using EXPLAIN to review the efficiency of the query

Retrieving F&B courses when job seeker's job title does not contain 'Bar,' 'ist,' or 'Tour':

```
SELECT * FROM s104181721_db.Course LIMIT 5;
```

EXPLAIN SELECT * FROM s104181721_db.Course LIMIT 5;

Id	select_type	table	type	possible_keys	key	key_len	ref	rows	Extra
1	SIMPLE	Course	ALL	NULL	NULL	NULL	NULL	826	NULL

Using EXPLAIN to review the efficiency of the query

To optimize queries for the Course table in the context of personalized recommendations specific indexes were considered to be added:

```
CREATE INDEX idx_CourseCategory ON Course(CourseCategory);
```

After running the example queries again:

The screenshot shows the phpMyAdmin interface for a database named 's104181721_db'. In the left sidebar, there's a tree view of tables including 'New', 'information_schema', and 's104181721_db' which contains tables like 'Application', 'Course', 'CourseRegistration', 'Education', 'ExtracurriculumActivity', 'Job', 'JobSeeker', 'JobSeekerInterview', 'Recruiter', 'RecruiterInterview', 'Skill', 'UserAuthentication', and 'WorkingExperience'. The main query window displays the result of the EXPLAIN command for a SELECT query:

```
EXPLAIN SELECT * FROM Course WHERE CourseCategory = 'F&B';
```

The EXPLAIN output table shows the following details:

ID	select_type	table	type	possible_keys	key	key_len	ref	rows	Extra
1	SIMPLE	Course	ref	idx_CourseCategory	idx_CourseCategory	257	const	346	Using index condition

Below the table are several buttons: 'Query results operations' (Print, Copy to clipboard, Create view), 'Bookmark this SQL query' (Label input field, 'Let every user access this bookmark' checkbox), and 'Help' and 'Console' buttons.

Using EXPLAIN to review the efficiency of the query

Retrieving courses based on filters:

```
SELECT * FROM Course WHERE CourseCategory = 'Tourism & Hospitality';
SELECT * FROM Course WHERE CourseCategory = 'F&B';
SELECT * FROM Course WHERE CourseCategory = 'Beauty & Spa';
```

The screenshot shows the phpMyAdmin interface for a database named 's104181721_db'. The left sidebar shows the same table structure as the previous screenshot. The main query window displays the result of the EXPLAIN command for a SELECT query:

```
EXPLAIN SELECT * FROM Course WHERE CourseCategory = 'Beauty & Spa';
```

The EXPLAIN output table shows the following details:

ID	select_type	table	type	possible_keys	key	key_len	ref	rows	Extra
1	SIMPLE	Course	ALL	NULL	NULL	NULL	NULL	959	Using where

Below the table are several buttons: 'Query results operations' (Print, Copy to clipboard, Create view), 'Bookmark this SQL query' (Label input field, 'Let every user access this bookmark' checkbox), and 'Help' and 'Console' buttons.

Using EXPLAIN to review the efficiency of the query

Retrieving jobs based on filters (example):

```
SELECT *
FROM Job
WHERE ExperienceLevel = 'Internship' AND WorkingFormat = 'Offline' AND JobSpecialization = 'F&B';
```

The screenshot shows the phpMyAdmin interface with the database 's104181721_db' selected. A warning message at the top states: 'Current selection does not contain a unique column. Grid edit, checkbox, Edit, Copy and Delete features are not available.' Below this, a green bar indicates: 'Your SQL query has been executed successfully.' The query shown is: `EXPLAIN SELECT * FROM Job WHERE ExperienceLevel = 'Internship' AND WorkingFormat = 'Offline' AND JobSpecialization = 'F&B';`. The results table shows the execution plan:

Id	select_type	table	type	possible_keys	key	key_len	ref	rows	Extra
1	SIMPLE	Job	ALL	NULL	NULL	NULL	NULL	1096	Using where

Below the table are 'Query results operations' buttons: Print, Copy to clipboard, Create view. There are also 'Bookmark this SQL query' buttons and a 'Label:' input field.

Using EXPLAIN to review the efficiency of the query

To optimize queries for the Job and Course tables in the context of personalized recommendations and filters, specific indexes were considered to be added:

```
CREATE INDEX idx_CourseCategory ON Course(CourseCategory);
CREATE INDEX idx_ExperienceLevel ON Job(ExperienceLevel);
CREATE INDEX idx_WorkingFormat ON Job(WorkingFormat);
CREATE INDEX idx_JobSpecialization ON Job(JobSpecialization);
```

After running the example queries again:

The screenshot shows the phpMyAdmin interface with the database 's104181721_db' selected. A warning message at the top states: 'Current selection does not contain a unique column. Grid edit, checkbox, Edit, Copy and Delete features are not available.' Below this, a green bar indicates: 'Your SQL query has been executed successfully.' The query shown is: `EXPLAIN SELECT * FROM Course WHERE CourseCategory = 'F&B';`. The results table shows the execution plan:

Id	select_type	table	type	possible_keys	key	key_len	ref	rows	Extra
1	SIMPLE	Course	ref	idx_CourseCategory	idx_CourseCategory	257	const	346	Using index condition

Below the table are 'Query results operations' buttons: Print, Copy to clipboard, Create view. There are also 'Bookmark this SQL query' buttons and a 'Label:' input field. A 'Help' button is visible in the bottom left corner.

Using EXPLAIN to review the efficiency of the query (Retrieve F&B Courses)

The screenshot shows the FeenIX MySQL Workbench interface. The main window displays the EXPLAIN output for the query: `EXPLAIN SELECT * FROM Course WHERE CourseCategory = 'Tourism & Hospitality';`. The output shows a single SIMPLE query with a type of 'Course ref' and a key of 'idx_CourseCategory'. The rows are 350 and the extra information includes 'Using index condition'. Below the EXPLAIN output, there are sections for 'Query results operations' (Print, Copy to clipboard, Create view), 'Bookmark this SQL query' (Label input field, checkbox for 'Let every user access this bookmark'), and a 'Help' section with a message: 'Hello s104181721. For help with MariaDB, please read the FeenIX Help pages.' A watermark for 'feenix.com' is visible in the bottom right corner.

Using EXPLAIN to review the efficiency of the query (Retrieve Tourism & Hospitality Courses)

The screenshot shows the FeenIX MySQL Workbench interface. The main window displays the EXPLAIN output for the query: `EXPLAIN SELECT * FROM Course WHERE CourseCategory = 'Beauty & Spa';`. The output shows a single SIMPLE query with a type of 'Course ref' and a key of 'idx_CourseCategory'. The rows are 303 and the extra information includes 'Using index condition'. Below the EXPLAIN output, there are sections for 'Query results operations' (Print, Copy to clipboard, Create view), 'Bookmark this SQL query' (Label input field, checkbox for 'Let every user access this bookmark'), and a 'Help' section with a message: 'Hello s104181721. For help with MariaDB, please read the FeenIX Help pages.' A watermark for 'feenix.com' is visible in the bottom right corner.

Using EXPLAIN to review the efficiency of the query (Retrieve Beauty & Spa Courses)

The screenshot shows the FeenIX MySQL Workbench interface. The main window displays the EXPLAIN output for the query: `EXPLAIN SELECT * FROM Job WHERE ExperienceLevel = 'Internship' AND WorkingFormat = 'Offline' AND JobSpecialization = 'F&B';`. The output shows a single SIMPLE query with a type of 'index_merge' and three keys: 'idx_ExperienceLevel', 'idx_WorkingFormat', and 'idx_JobSpecialization'. The rows are 257,257 and the extra information includes 'Using intersect(idx_ExperienceLevel, idx_WorkingFormat, idx_JobSpecialization)' and 'Using where'. Below the EXPLAIN output, there are sections for 'Query results operations' (Print, Copy to clipboard, Create view), 'Bookmark this SQL query' (Label input field, checkbox for 'Let every user access this bookmark'), and a 'Help' section with a message: 'Hello s104181721. For help with MariaDB, please read the FeenIX Help pages.' A watermark for 'feenix.com' is visible in the bottom right corner.

Using EXPLAIN to review the efficiency of the query (After filtering)

e. Conclusion

After a thorough analysis of the EXPLAIN output for queries involving the *Job* and *Course* tables, the presence of "Using index condition" indicates that the indexes on the specified columns are effectively utilized by the database optimizer. Therefore, the conclusive decision is to

USE the indexes created on the *CourseCategory*, *ExperienceLevel*, *WorkingFormat*, and *JobSpecialization* columns. This strategic use of indexes enhances the overall performance of queries, ensuring an optimized and responsive system for personalized job and course recommendations.

3. Course/job tracking

a. User Story:

As a course participant, I need the ability to track and manage my registered courses/jobs easily.

b. Page Implemented in Design

- 8. Job Seeker Profile

c. Tables Used in Database

- CourseRegistration
- Application

d. Index Usage Considerations

To facilitate personalized course and job tracking functionalities for a course participant, a set of SELECT queries must be executed to gather pertinent details about the user's registered courses and job applications. This ensures the seamless tracking and management of enrolled courses and job activities.

The decision to add indexes to the *JobSeekerID* column for the *Course* and *Job* tables was considered. However, since *JobSeekerID* serves as a foreign key in these tables, an index on this column is automatically generated. Consequently, there is no need to manually add an index to this column in this particular scenario.

Example queries:

Retrieving all registered courses for a specific Job Seeker:

```
SELECT Course.*  
FROM Course  
JOIN CourseRegistration ON Course.CourseID = CourseRegistration.CourseID  
JOIN JobSeeker ON CourseRegistration.JobSeekerID = JobSeeker.JobSeekerID  
WHERE JobSeeker.UserAuthenticationID = 1300;
```

Using EXPLAIN to review the efficiency of the query

Retrieving all job applications for a specific Job Seeker:

```
SELECT Job.*  
FROM Job  
JOIN Application ON Job.JobID = Application.JobID  
JOIN JobSeeker ON Application.JobSeekerID = JobSeeker.JobSeekerID  
WHERE JobSeeker.UserAuthenticationID = 1300;
```

The screenshot shows the phpMyAdmin interface with the following details:

- Server:** Phoenix MariaDB (MySQL) > Database: s104181721_db
- Structure, SQL, Search, Query, Export, Import, Operations, Routines, Tracking, Designer, Central columns:** These tabs are visible at the top.
- Current selection does not contain a unique column. Grid edit, checkbox, Edit, Copy and Delete features are not available.**: A message in a blue box at the top.
- Your SQL query has been executed successfully.**: A message in a green box below the message box.
- EXPLAIN SELECT Job.* FROM Job JOIN Application ON Job.JobID = Application.JobID JOIN JobSeeker ON Application.JobSeekerID = JobSeeker.JobSeekerID WHERE JobSeeker.UserAuthenticationID = 1300;**: The SQL query entered.
- Edit inline | Edit | Skip Explain SQL | Create PHP code**: Buttons for editing the query.
- Extra options**: A dropdown menu.
- Results table:**

ID	select_type	table	type	possible_keys	key	key_len	ref	rows	Extra
1	SIMPLE	JobSeeker	ref	PRIMARY,UserAuthenticationID	UserAuthenticationID	4	const	1	Using index
1	SIMPLE	Application	ref	JobID,JobSeekerID	JobSeekerID	4	s104181721_db.JobSeeker.JobSeekerID	1	
1	SIMPLE	Job	eq_ref	PRIMARY	PRIMARY	4	s104181721_db.Application.JobID	1	
- Query results operations**: Buttons for Print, Copy to clipboard, and Create view.
- Bookmark this SQL query**: A section for bookmarking the query.

Using EXPLAIN to review the efficiency of the query

e. Conclusion

Upon examining the EXPLAIN output, the decision is to **USE** indexes for the query involving the *JobSeekerID* column in the *CourseRegistration* and *Application* tables. The presence of "Using index" in the output suggests that employing indexes would enhance the performance of existing queries, making it a beneficial optimization for course and job tracking functionalities within the Job Seeker Profile page.

4. Enable easy profile editing

a. User Story:

As a user, I want the ability to easily edit my profile information so that I can keep my details up-to-date without encountering any unnecessary complexity.

b. Page Implemented in Design

- 8. Job Seeker Profile
- 8'. Job Seeker Profile - Edit

c. Tables Used in Database

- JobSeeker
- Skills
- WorkingExperience
- ExtracurriculumActivity

d. Index Usage Considerations

To streamline the process of easy profile editing for users, a series of UPDATE queries need to be executed to modify relevant details within the database. This ensures a straightforward mechanism for users to effortlessly edit and update their profile information, eliminating unnecessary complexity and providing a seamless experience in managing their personal details.

To optimize profile editing functionalities within the "Job Seeker Profile - Edit" page (8'), considerations were made regarding the addition of indexes. However, since the *JobSeekerID* serves as a foreign key in the *Skills*, *WorkingExperience*, and *ExtracurriculumActivity* tables, an index on this column is automatically generated. Consequently, there is no need to manually add an index to the *JobSeekerID* column in this particular scenario.

Example queries:

Retrieving JobSeekerID:

```
SELECT * FROM s104181721_db.JobSeeker WHERE UserAuthenticationID = '1300';
```

The screenshot shows the phpMyAdmin interface with the database 's104181721_db' selected. In the left sidebar, the 'JobSeeker' table is expanded. The main area displays the results of the EXPLAIN query for the SELECT statement above. The output shows one row with the following details:

ID	select_type	table	type	possible_keys	key	key_len	ref	rows	Extra
1	SIMPLE	JobSeeker	ref	UserAuthenticationID	UserAuthenticationID	4	const	1	

Using EXPLAIN to review the efficiency of the query

Retrieving education for a specific Job Seeker:

```
SELECT * FROM s104181721_db.Education WHERE JobSeekerID = 1300;
```

The screenshot shows the phpMyAdmin interface with the database 's104181721_db' selected. In the left sidebar, the 'Education' table is expanded. The main area displays the results of the EXPLAIN query for the SELECT statement above. The output shows one row with the following details:

ID	select_type	table	type	possible_keys	key	key_len	ref	rows	Extra
1	SIMPLE	Education	ref	idx_JobSeekerID_Education	idx_JobSeekerID_Education	4	const	1	

Retrieving skills for a specific Job Seeker:

```
SELECT * FROM s104181721_db.Skill WHERE JobSeekerID = 1300;
```

The screenshot shows the phpMyAdmin interface for the database s104181721_db. The left sidebar lists various tables: New, information_schema, s104181721_db (which contains Application, Course, CourseRegistration, Education, ExtracurriculumActivity, Job, JobSeeker, JobSeekerInterview, Recruiter, RecruiterInterview, Skill, UserAuthentication, and WorkingExperience). The main area displays the results of an EXPLAIN SELECT query:

```
EXPLAIN SELECT * FROM s104181721_db.Skill WHERE JobSeekerID = 1300;
```

The results table shows one row:

id	select_type	table	type	possible_keys	key	key_len	ref	rows	Extra
1	SIMPLE	Skill	ref	idx_JobSeekerID_Skill	idx_JobSeekerID_Skill	4	const	1	

Retrieving working experiences for a specific Job Seeker:

```
SELECT * FROM s104181721_db.WorkingExperience WHERE JobSeekerID = 1300;
```

The screenshot shows the phpMyAdmin interface for the database s104181721_db. The left sidebar lists various tables. The main area displays the results of an EXPLAIN SELECT query:

```
EXPLAIN SELECT * FROM s104181721_db.workingExperience WHERE JobSeekerID = 1300;
```

The results table shows one row:

id	select_type	table	type	possible_keys	key	key_len	ref	rows	Extra
1	SIMPLE	WorkingExperience	ref	idx_JobSeekerID_WorkingExperience	idx_JobSeekerID_WorkingExperience	4	const	1	

Retrieving extracurricular activities for a specific Job Seeker:

```
SELECT * FROM s104181721_db.ExtracurriculumActivity WHERE JobSeekerID = 1300;
```

The screenshot shows the phpMyAdmin interface for the database s104181721_db. The left sidebar lists various tables. The main area displays the results of an EXPLAIN SELECT query:

```
EXPLAIN SELECT * FROM s104181721_db.ExtracurriculumActivity WHERE JobSeekerID = 1300;
```

The results table shows one row:

id	select_type	table	type	possible_keys	key	key_len	ref	rows	Extra
1	SIMPLE	ExtracurriculumActivity	ref	idx_JobSeekerID_ExtracurriculumActivity	idx_JobSeekerID_ExtracurriculumActivity	4	const	1	

Edit job seeker profile:

```

UPDATE JobSeeker
SET
    JSImage = 'https://hips.hearstapps.com/hmg-prod/images/beautiful-smooth-haired-red-cat-lies-on-the-sofa-royalty-free-image-1678488026.jpg?crop=1xw:0.84415xh;center,top&resize=1200:*',
    FirstName = 'John',
    LastName = 'Doe',
    ExperienceLevel = 'Intermediate',
    JSJobTitle = 'Software Developer',
    Gender = 'Male',
    DOB = '1990-05-15',
    Phone = '123-456-7890',
    Address = '123 Main St'
WHERE
    UserAuthenticationID = '1300';

```

The screenshot shows the phpMyAdmin interface with the following details:

- Server:** FeeNIX MariaDB (MySQL)
- Database:** s104181721_db
- Structure:** Shows the schema of the database, including tables like information_schema, s104181721_db, Application, Course, CourseRegistration, Education, ExtracurriculumActivity, Job, JobSeeker, JobSeekerInterview, Recruiter, RecruiterInterview, Skill, UserAuthentication, and WorkingExperience.
- SQL Tab:** Contains the executed SQL query:


```
UPDATE JobSeeker SET JSImage = 'https://hips.hearstapps.com/hmg-prod/images/beautiful-smooth-haired-red-cat-lies-on-the-sofa-royalty-free-image-1678488026.jpg?crop=1xw:0.84415xh;center,top&resize=1200:*', FirstName = 'John', LastName = 'Doe', ExperienceLevel = 'Intermediate', JSJobTitle = 'Software Developer', Gender = 'Male', DOB = '1990-05-15', Phone = '123-456-7890', Address = '123 Main St' WHERE UserAuthenticationID = '1300';
```
- Result Panel:** Shows a green message: "1 row affected. (Query took 0.00023 seconds.)"
- Help Panel:** Displays the message: "Hello s104181721" and "For help with MariaDB, please read the FeeNIX Help pages."
- SWINBURNE TECHNOLOGY Logo:** Located in the bottom right corner of the interface.

e. Conclusion

Upon reviewing the EXPLAIN output, it is determined that the existing foreign key indexes on the *JobSeekerID* column in the *Skills*, *WorkingExperience*, and *ExtracurriculumActivity* tables are sufficient. The presence of "Using index" in the output signifies that the database optimizer effectively leverages these existing foreign key indexes. The decision to **USE** index to these columns is aligned with the observed optimization provided by the existing foreign key indexes, ensuring efficient profile editing within the Job Seeker Profile - Edit page.

5. Improve interview schedule process

a. User Story:

- As a job seeker, I want to actively choose my interview time that fit to my own schedule.
- As a recruiter, I want to schedule time available for job applicators and let them choose appropriate time.

b. Page Implemented in Design

- 9. Job Seeker - Book Interview Schedule
- 10. Job Seeker - View Interview Schedule
- 13. Recruiter - Set Interview Schedule
- 14. Recruiter - View Interview Schedule

c. Tables Used in Database

- JobSeekerInterview
- RecruiterInterview

d. Index Usage Considerations

Considering the nature of the interview scheduling process, the decision to add indexes to specific columns, such as *JobSeekerID* and *RecruiterID* in *JobSeekerInterview* and *RecruiterInterview* table and *JobSeekerID* in the *JobSeekerInterview* table, should be explored. Indexing on these columns may optimize the speed and efficiency of queries related to booking and viewing interview schedules. However, since *JobSeekerID* and *RecruiterID* serves as a foreign key in these tables, an index on these columns is automatically generated. Consequently, there is no need to manually add an index to these columns in this particular scenario.

Example queries:

Retrieve job seeker's interview schedule with job details:

```
SELECT JSI.JSInterviewID, JSI.InterviewDate, JSI.InterviewTime, J.JobTitle, J.Salary  
FROM JobSeekerInterview JSI  
JOIN Job J ON JSI.JobID = J.JobID  
WHERE JSI.JobSeekerID = 123 AND JSI.InterviewDate >= CURDATE();
```

ID	select_type	table	type	possible_keys	key	key_len	ref	rows	Extra
1	SIMPLE	JSI	ref	JobSeekerID	JobSeekerID	4	const	1	Using where

Using EXPLAIN to review the efficiency of the query

Viewing interview schedule for a job:

```
SELECT RecruiterInterview.RecruiterInterviewID, RecruiterInterview.DateStart, RecruiterInterview.TimeStart,  
RecruiterInterview.TimeEnd  
FROM RecruiterInterview  
WHERE RecruiterInterview.JobID = 123;
```

Your SQL query has been executed successfully.

```
EXPLAIN SELECT RecruiterInterview.RecruiterInterviewID, RecruiterInterview.DateStart, RecruiterInterview.TimeStart, RecruiterInterview.TimeEnd
FROM RecruiterInterview WHERE RecruiterInterview.JobID = 123;
```

Id	select_type	table	type	possible_keys	key	key_len	ref	rows	Extra
1	SIMPLE	RecruiterInterview	ref	JobID	JobID	4	const	1	

Using EXPLAIN to review the efficiency of the query

Booking an interview slot for a job seeker:

```
INSERT INTO JobSeekerInterview (JobSeekerID, JobID, InterviewDate, InterviewTime)
VALUES (
    (SELECT JobSeekerID FROM JobSeeker WHERE UserAuthenticationID = 1300),
    123,
    '2023-01-01',
    '14:30:00'
);
```

Retrieving interview schedule of a job seeker:

```
SELECT *
FROM JobSeekerInterview
WHERE JobSeekerID = (SELECT JobSeekerID FROM JobSeeker WHERE UserAuthenticationID = 123);
```

Your SQL query has been executed successfully.

```
EXPLAIN SELECT * FROM JobSeekerInterview WHERE JobSeekerID = (SELECT JobSeekerID FROM JobSeeker WHERE UserAuthenticationID = 1300);
```

Id	select_type	table	type	possible_keys	key	key_len	ref	rows	Extra
1	PRIMARY	JobSeekerInterview	ref	JobSeekerID	JobSeekerID	4	const	1	Using where
2	SUBQUERY	JobSeeker	ref	UserAuthenticationID	UserAuthenticationID	4	const	1	Using index

Using EXPLAIN to review the efficiency of the query

e. Conclusion

- In conclusion, for the complex query involving *JobSeekerID* and *RecruiterID* columns in the *RecruiterInterview* table, the decision is to **NOT USE** indexes. This choice is based on the observed inefficiency of the query optimizer in utilizing indexes, as indicated by the absence of "Using index" in the EXPLAIN output.

- Conversely, for the *JobSeekerID* column in the *JobSeekerInterview* table, the decision is to **USE** an index, given the presence of "Using index" in the EXPLAIN output.

FINAL CONCLUSION

After a comprehensive analysis of the EXPLAIN output for various queries in the database, the following indexes have been added to enhance database performance:

- Course table:
 - CourseCategory: `CREATE INDEX idx_CourseCategory ON Course(CourseCategory);`
- Job table:
 - ExperienceLevel: `CREATE INDEX idx_ExperienceLevel ON Job(ExperienceLevel);`
 - WorkingFormat: `CREATE INDEX idx_WorkingFormat ON Job(WorkingFormat);`
 - JobSpecialization: `CREATE INDEX idx_JobSpecialization ON Job(JobSpecialization);`
- CourseRegistration, Application, Skills, WorkingExperience, ExtracurriculumActivity, JobSeekerInterview table:
 - JobSeekerID (automatically created due to its foreign key relationship)

✓ UI/UX Design

Website Functional linking Structure

- 1. Functions
- 2. Detailed page structure

1. Functions

Use cases	User story	Design page	Database table
Implement role-based access control and develop a secure user authentication system	<ul style="list-style-type: none"> As an administrator, I want to assign roles and permissions to users easily to ensure data security. As a user, I want a reliable and secure login process to protect my personal data and account information. 	<ul style="list-style-type: none"> 15. Sign up - Role selection 16. Sign up - Gmail & Password 17. Sign up - Information - Normal User 18. Log in 	UserAuthentication
Enable personalized course/job recommendations	As a user, I want to receive jobs/courses recommendations tailored to my skills and career goals for a better experience.	<ul style="list-style-type: none"> 3. Courses 5. Job Opportunities 	<ul style="list-style-type: none"> Course Job
Implement course/job tracking	As a course participant, I need the ability to track and manage my registered courses/jobs easily.	8. Job Seeker Profile	<ul style="list-style-type: none"> CourseRegistration Application
Enable easy profile editing	As a user, I want the ability to easily edit my profile information so that I can keep my details up-to-date without encountering any unnecessary complexity.	8. Job Seeker Profile 8'. Job Seeker Profile - Edit	<ul style="list-style-type: none"> JobSeeker Skills WorkingExperience ExtracurriculumActivity
Improve interview schedule process	<ul style="list-style-type: none"> As a job seeker, I want to actively choose my interview time that fit to my own schedule. As a recruiter, I want to schedule time available for job applicators and let 	<ul style="list-style-type: none"> 9. Job Seeker - Book Interview Schedule 10. Job Seeker - View Interview Schedule 13. Recruiter - Set Interview Schedule 14. Recruiter - View Interview Schedule 	<ul style="list-style-type: none"> JobSeekerInterview RecruiterInterview

them choose
appropriate time.

2. Detailed page structure

Total pages: 18

▼ 1. Homepage

Introduce "Vision", "Mission", and all other functions

▼ 2. About page

- What we do: "What we do?", "Vision", "Mission", "Core value"
- Leading team
- Our partners

▼ 3*. Courses

=> Divide into 2 sections:

a. For you (Suggest courses for the user)

b. Our courses (**filter** function here ↓)

*The following courses are presented:

- F&B
- Beauty & Spa
- Tourism & Hospitality
 - Detailed course description:
 - Course introduction
 - Course length
 - Course outline
 - Course provider
 - Benefits of the course
 - Price
 - CTA: Register this course!

▼ 3 => 4*. Detailed page of registration

- Personal information: (AUTOFILLED)
 - Name
 - Age
 - Gender
 - Living location
 - Phone Number
- Bank account information (VISA/MASTERCARD):
 - Bank (Branch)
 - Bank/Card number
 - Account name
 - CTA: Buy the course now!

▼ 5*. Job opportunities

- Job search engine

- => Divide into 2 sections:
 - a. For you (Suggest jobs for the user)
 - b. Filter jobs by:
 - Expected salary (**slide bar**: ... - \$)
 - Experience level (**drop-down list**: Internship, Entry level, Junior, Mid-level, Senior)
 - Company size (**drop-down list**: 1-20 employees, 21-50 employees, 51-100 employees, 100+ employees)
 - Working format: (**drop-down list**: Remote, Hybrid, On-site)
 - Specialization: Beauty & Spa, F&B, Tourism & Hospitality, Engineering, Event, Mechanics, Nursing & Medical

▼ 5 => 6*. Job details page

- Detailed job description (Example):
 - Job title: Hairdresser
 - Employer: The Sandy Chair
 - Application deadline: 10/10/2022
 - Salary: AUD\$40/h
 - Working location: Sandringham, Melbourne VIC
 - Working Format
 - Scope of work: ...
 - Experience requirement: ...
 - Benefits:
 - Company's introduction:
 - Short description
 - Email
 - Phone
- CTA: Apply this job!
- CTA: Save this job

▼ 6 => 7*. Application page(*)

- Personal information: (AUTOFILLED)
 - Name
 - Age
 - Gender
- Job application
 - CV/resume upload (pdf >>)
 - Statement of purpose (Why do you want to apply for this job?) (text box) (responsive)
 - What support do you expect to gain from the company? (text box) (responsive)
 - Do you have any questions for us? (text box)
- CTA: Submit now!

▼ 8*. Candidate Profile(*)

- Headline:

- Name
- Job title/role
- Experience level
- Career goal introduction
- Personal information:
 - Name
 - Age
 - Gender
 - Phone number
 - Email
 - Living location
 - Educational background
- Experience statement:
 - Skills tags
 - Working experience:
 - Company name
 - Job role
 - Time range
 - Description
 - Extracurricular activities:
 - Organization name
 - Job role
 - Time range
 - Description
- Registered course: **lists** the courses a user has applied in the system, showing the **status tracking** of each job
- Applied jobs: **lists** the jobs a user has saved or applied in the system, showing the **application status** of each job (*reviewing, failed, succeeded, interviewing*)
- Interviewing schedule: lists the jobs for which a user has successfully passed the CV round and is proceeding to the interviewing round
 - Interviewing waitlist: Interview schedules need to be set with the employers
 - **8 => 9. Detailed page(*)**: a calendar with available time of employers set, candidates can book based on those schedule → CTA: Book!
 - Interviewing on the go:
 - **8 => 10. Detailed page(*)**:
 - Time
 - Job title
 - Job description
 - Link to meeting

▼ 11. (In footer) Contact

A form through which users can send their requests for information:

- Email
- Phone

- Name
- Message
- (Phone number)?

▼ 6 => 12*. Profile (Company)(*)

- Headline: Company name
- Company information:
 - Name
 - Size
 - Company introduction
 - Phone number
 - Email
- Job posting:
 - Specialization:
 - Detailed job description (Example):
 - Job title: Hairdresser
 - Employer: The Sandy Chair
 - Application deadline: 10/10/2022
 - Salary: AUD\$40/h
 - Working location: Sandringham, Melbourne VIC
 - Scope of work: ...
 - Experience requirement: ...
 - Benefits:
 - Company's introduction:
 - Short description
 - Email
 - Phone

▪ Candidates list (who applied for this job)

• => **Candidates applied:**

- Specialization: lists the applied candidates based on specialization
- Action buttons: Yes, No, Considering
- Interviewing schedules:
 - Interviewing waitlist: Interview schedules need to be set with the approved (Yes) candidates
 - **12 => 13.Detailed page(*)**: a calendar with available time slots for employers → CTA: Set!
 - Interviewing on the go:
 - **12 => 14. Detailed page(*)**:
 - Time
 - Job title
 - Job description
 - Link to candidate's profile
 - Link to meeting

▼ 15*. Sign up => Home (Sucessfully Signed up Notification)

(15. Pick Role => 16. Gmail/Password => (17. Veri) => Home)

- Normal user
 - Gmail (account)
 - Password
 - ----- (Verification page)
 - First name
 - Last name
 - Address
 - Phone
- Business
 - Gmail (account)
 - Password
 - ----- (Verification page)
 - Company Name
 - Address
 - Contact number
 - Industry
 - Company's website link (optional)

▼ 18*. Sign in

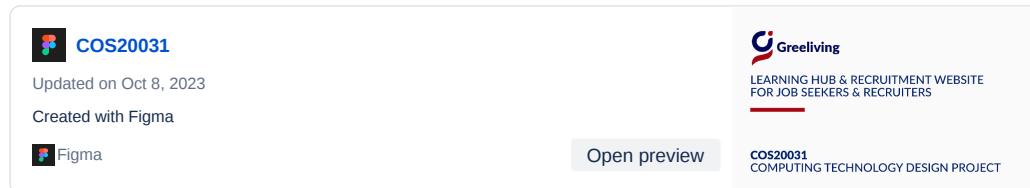
- Gmail
- Password

C Coding Formats

Table of Contents

Github link:

1. Figma design



The screenshot shows the Figma interface with two projects open. On the left, the 'COS20031' project is displayed, featuring a logo icon, the project name, the date 'Updated on Oct 8, 2023', and the note 'Created with Figma'. On the right, the 'Greeliving' project is shown, which is described as a 'LEARNING HUB & RECRUITMENT WEBSITE FOR JOB SEEKERS & RECRUITERS'. Below each project is a 'Figma' logo and a 'Open preview' button.

2. HTML Standard Structure

```
1  <!DOCTYPE html>
2  <html lang="en">
3
4  <head>
5      <meta charset="utf-8">
6      <meta name="description" content="COS20031 Computing Technology Design Project">
7      <meta name="author" content="Lo Tuan Hung, Luong Chi Duc, Nguyen Vu Duy Minh, Hau Linh Chi, Dao Khanh Nga Thi"
8      <link href="styles/style.css" rel="stylesheet">
9      <link href="styles/hehe.css" rel="stylesheet">
10     <link rel="icon" href="images/Favicon-02.png" type="image/x-icon">
11     <link rel="stylesheet" href="https://unicons.iconscout.com/release/v4.0.8/css/line.css">
12     <script src="https://kit.fontawesome.com/f73039f1ad.js" crossorigin="anonymous"></script>
13     <title>Website title appeared on the tab</title>
14 </head>
15
16 <body>
17
18     <!-- NAVIGATION BAR -->
19     <header>
20
21         <a href="#"></a>
22
23         <nav class="navbar">
24             <a href="#">Home</a>
25             <a href="#">About</a>
26             <a href="#">Courses</a>
27             <a href="#">Job Opportunities</a>
28         </nav>
29
30         <div class="icons">
31             <ul>
32                 <li><i class="uil uil-bars" id="bars"></i></li>
33                 <li><i class="uil uil-search" id="search_box"></i></li>
34                 <li><a href="profile_page" class="uil uil-user"></a></li>
35             </ul>
36         </div>
```

```

38 </header>
39
40 <!-- MAIN CONTENT -->
41 <main>
42
43 </main>
44
45 <!-- BACK TO TOP BUTTON -->
46 <div>
47   <a href="#" title="Back to top">
48     <i class="uil uil-arrow-up" id="gotopbtn"></i>
49   </a>
50 </div>
51
52 <!-- FOOTER -->
53 <footer>
54   <div class="container">
55     <div class="row">
56
57       <!-- First column -->
58
59       <div class="footer_col">
60         <a href="#"></a>
61         <br><br>
62         <h4>Thông tin liên hệ</h4>
63         <ul>
64           <li>Cơ sở chính</li>
65           <li><i class="fa-solid fa-location-dot"></i> P2 - 12A Eastern Park 2 Thạch Bàn, <br>Long Biên District, Hanoi, Vietnam</li>
66           <li><i class="fa-solid fa-phone"></i> (+84)98.499.65.98</li>
67         </ul>
68       </div>
69
70       <!-- Second column -->
71
72       <div class="footer_col">
73         <h4>Navigation</h4>
74         <ul>
75           <li><a href="#">Home</a></li>
76           <li><a href="#">About</a></li>
77           <li><a href="#">Courses</a></li>
78           <li><a href="#">Job Opportunities</a></li>
79         </ul>
80       </div>
81
82       <!-- Third column -->
83
84       <div class="footer_col">
85         <h4>Contact us</h4>
86         <form action="">
87           <input type="text" placeholder="Your name" class="inputName">
88           <input type="text" placeholder="Your phone number" class="inputNumber">
89           <input type="email" placeholder="Your email" class="inputEmail">
90           <textarea placeholder="Message" class="textareaMessage"></textarea>
91           <input type="submit" value="Submit" class="inputSubmit">
92         </form>
93       </div>
94     </div>
95   </div>

```

```
96  </footer>
97  </body>
98  </html>
```

3. HTML rules

Always use comments to separate sections

3.1. Tags

- Smaller tags need to step forward “1 tab” compared to the bigger tags
- The basic structure needs to remain among pages
- Necessary changes in the given structure between pages:
 - Line 9 - link CSS file
 - Line 11 - the title appeared on the tab

3.2. Naming class/id

a. Acronyms for pages

Full words	Short term
(1) home page	hp
(2) about page	ap
(3) courses page	cp
(4) course registrations page	crp
(5) job opportunities page	jop
(6) job details page	jdp
(7) job application page	jap
(8) candidate profile page	cpp
(9) employee interview waiting details page	ewp
(10) employee interview on the go details page	egp
(12) business profile page	bpp
(13) business interview waiting details page	bpw
(14) business interview on the go details page	bgp
(15) sign up page	su
(16) gmail-password page	pp
(17) verification page	vp
(18) sign in page	si

b. Structures

Example code on the homepage:

```
1 <body>
2   <header>
3     <!--Navigation bar-->
4     <nav>
5       <ul class="hp-nb-hehe">
6         <li class="hp-nb-haha"></li>
7       </ul>
8     </nav>
9   </header>
```

=> Structure: “pageName-sectionName-anynameYouWant”

4. CSS Rules

- For each CSS file, please use the following structure:

```
1 /*Name of the page (Ex: Home Page, About page, ...)*/
2 /*Name of the section (Ex: Filter, Product, Footer, ...*/
3 style...
```

- Preferred units: **em, rem, %**
- File **style.css**:
 - Assignee: @Chi Hau
 - Responsibilities:
 - **@media** for desktop (and for mobile)
 - Overall format (* **section**)
 - Summarize code from all single files and fix bugs

100 Test cases

Test ID	Steps	Test Input	Expected Output	Actual Output	Issue	Status
Log in-1	Enter correct Email and Password	Email: James@gmail.com Password: 123456	Login Success Job Seeker profile page	As Expected	<input checked="" type="checkbox"/> HDCTM-109: Testing user access DONE	PASS
Log in-1	Enter correct Email and Password	Email: Jame@gmail.com Password: 123456	Login Success Recruiter profile page	As Expected	<input checked="" type="checkbox"/> HDCTM-109: Testing user access DONE	PASS
Log in-2	Enter Incorrect Email and Password	Email: jaane@gmail.com Password: 0123456	Login fails Login page	As Expected	<input checked="" type="checkbox"/> HDCTM-109: Testing user access DONE	PASS
Logout-1	Hit "Log Out" button	Clear Email & Password	Redirect Login page Email & Password fills are blank	As Expected	<input checked="" type="checkbox"/> HDCTM-109: Testing user access DONE	PASS
Pnf-1	Hit "Go Back" button	Direct to the most recently page	Direct to the most recently page	As Expected	<input checked="" type="checkbox"/> HDCTM-109: Testing user access DONE	PASS
Nav -1	Navigation bar must work correctly	Direct to corresponding page	Direct to corresponding page	As Expected	<input checked="" type="checkbox"/> HDCTM-109: Testing user access DONE	PASS
Slider-1	Hit "Slider button"	"Slider button" must be workable	"Slider button" must be workable	As Expected	<input checked="" type="checkbox"/> HDCTM-109: Testing user access DONE	PASS
Jsp-1.0	Hit the "Save changes" button	Keep all the original informations	All the original informations are unchanged	As Expected	<input checked="" type="checkbox"/> HDCTM-120: Testing profile DONE	PASS
Jsp-1.1	Editing Job Seeker Profile Information	Phone number (new): 1239799999	Phone number: 1239799999	As Expected	<input checked="" type="checkbox"/> HDCTM-120: Testing profile DONE	PASS
Jsp-1.2	Add information for user profile	Hit "+Add More" button Skill (new): ICT Education Background (new): <ul style="list-style-type: none">• Bachelor of ICT• Swinburne• 2022• 3	Additional Input Fill for User Skill: ICT Education Background: <ul style="list-style-type: none">• Bachelor of ICT• Swinburne• 2022• 3 Redirect Job Seeker profile page	As Expected	<input checked="" type="checkbox"/> HDCTM-120: Testing profile DONE	PASS
Jsp-1.3	Delete existing Information	Clear a Education Background field	The selected Education Background field is deleted	As Expected	<input checked="" type="checkbox"/> HDCTM-120: Testing profile DONE	PASS

Jsp-2	Hit "See course details" button	Direct to page not found	Direct to page not found	As Expected	<input checked="" type="checkbox"/> HDCTM-109: Testing user access DONE	PASS
Jsp-3.1	Hit "Book interview time" button with Job has set Interview schedule	Displaying Selected Job card with full information Displaying Interview Schedule	Direct to Job seeker Interview Set page Displaying Selected Job card with full information Displaying Interview Schedule	As Expected	<input checked="" type="checkbox"/> HDCTM-119: Test process interview schedule DONE	PASS
Jsp-3.2	Hit "Book interview time" button with Job has NOT set Interview schedule	Displaying Selected Job card with full information Card: Bar-Tracker • Time: 09:09 • Date: 2023-11-24	Direct to Job Seeker Interview Book page Successful Book and Display interview schedule	As Expected	<input checked="" type="checkbox"/> HDCTM-119: Test process interview schedule DONE	PASS
Jsp-3.3	Hit "View interview details" button	Displaying Selected Job card with full information Displaying Interview Schedule	Direct to Job seeker Interview Set page Displaying Selected Job card with full information Displaying Interview Schedule	As Expected	<input checked="" type="checkbox"/> HDCTM-119: Test process interview schedule DONE	PASS
Rp-1.1	Editing Recruiter Profile Information	• Name (new): HDCTM • Company size (new): 500000 • Phone number (new): 130 0782 2836 • Introduction (new): asljcbclsjbcipqknlkemnlw	• Name: HDCTM • Company size: 500000 • Phone number: 130 0782 2836 • Introduction: asljcbclsjbcipqknlkemnlw	As Expected	<input checked="" type="checkbox"/> HDCTM-120: Test editing profile DONE	PASS
Rp-2	Hit "View job seeker profile"	Only be able to see Personal Information	Direct to Page Job Seeker Profile - Recruiter POV Only be able to see Personal Information	As Expected	<input checked="" type="checkbox"/> HDCTM-109: Testing user access DONE	PASS
Rp-3.1	Hit "Set interview time" button with Job has set Interview schedule	Displaying Selected Job card with full information Displaying Interview Schedule	Direct to Recruiter Interview Set page Displaying Selected Job card with full information Displaying Interview Schedule	As Expected	<input checked="" type="checkbox"/> HDCTM-119: Test process interview schedule DONE	PASS
Rp-3.2	Hit "Set interview time" button with Job has NOT set Interview schedule	Displaying Selected Job card with full information Card: Bar-Waiter • Time Start: 09:09	Direct to Job Seeker Interview Book page Successful Book and Display interview	As Expected	<input checked="" type="checkbox"/> HDCTM-119: Test process interview schedule DONE	PASS

		<ul style="list-style-type: none"> • Time End: 10:09 • Date Start: 2023-11-24 • Date: 2023-11-26 	schedule			
Rp-3.3	Hit “View interview details” button	<p>Displaying Selected Job card with full information</p> <p>Displaying Interview Schedule</p>	<p>Direct to Recruiter Interview Set page</p> <p>Displaying Selected Job card with full information</p> <p>Displaying Interview Schedule</p>	As Expected	<input checked="" type="checkbox"/> HDCTM-119: Test process interview schedule DONE	PASS
Jop-1	Hit “Collapse”&“Expand” button	“Collapse”&“Expand” button must be workable	“Collapse”&“Expand” button must be workable	As Expected	<input checked="" type="checkbox"/> HDCTM-117: Test filtering and sorting DONE	PASS
Jop-2.1	Checking Filters	Filters must be able to select	Filters must be able to select	As Expected	<input checked="" type="checkbox"/> HDCTM-117: Test filtering and sorting DONE	PASS
Jop-2.2	Hit “Clear” button	All filters must be deleted	All filters must be deleted	As Expected	<input checked="" type="checkbox"/> HDCTM-117: Test filtering and sorting DONE	PASS
Jop-2.3	Hit “Apply Filter” button	Jobs that match the requirements will be sort, the other will disappear	Jobs that match the requirements will be sort, the other will disappear	As Expected	<input checked="" type="checkbox"/> HDCTM-117: Test filtering and sorting DONE	PASS
Jop-3	Hit “Apply for this job” button	Direct to page not found	Direct to page not found	As Expected	<input checked="" type="checkbox"/> HDCTM-109: Testing user access DONE	PASS
Cp-1.1	Checking Filters	Filters must be able to select	Filters must be able to select	As Expected	<input checked="" type="checkbox"/> HDCTM-117: Test filtering and sorting DONE	PASS
Cp-1.2	Hit “Clear” button	All filters must be deleted	All filters must be deleted	As Expected	<input checked="" type="checkbox"/> HDCTM-117: Test filtering and sorting DONE	PASS
Cp-1.3	Hit “Apply Filter” button	Courses that match the requirements will be sort, the other will disappear	Courses that match the requirements will be sort, the other will disappear	As Expected	<input checked="" type="checkbox"/> HDCTM-117: Test filtering and sorting DONE	PASS
Cp-2	Hit “Register for this course”	Direct to page not found	Direct to page not found	As Expected	<input checked="" type="checkbox"/> HDCTM-109: Testing user access DONE	PASS

 Project Proposal

@Lo Tuan Hung submit on Canvas due Oct 1, 2023 by 23:59

Working Agreement

📅 Weekly meeting

Date	Wednesday, Friday
Time	10:30 PM
Common goals	<ul style="list-style-type: none"> • Review the whole week • Solve outstanding problems • Discuss about work for the next week

For any meeting, if a member arrives late without providing the leader with valid reasons at least 1 hour before the meeting, that member will be considered as absent from the meeting.

💬 Communication Channels

Channel	Purpose	Audience	Standards
Email	Major announcements	All team members	Daily check
Confluence	Documentation	All team members	Only edit pages assigned by the Team Leader
Jira	<ul style="list-style-type: none"> • Manage tasks, project process • Assign tasks for team members • Update timeline 	Leader	Update at least twice a week
Messenger	<ul style="list-style-type: none"> • Chatting • Quick announcements 	All team members	Expectations on responses
Google Meet	Online meetings	All team members	Pre-scheduled
Google Calendar	Control/ Schedule important events	All team members	Weekly check
Github	<ul style="list-style-type: none"> • Update source code • Control project's source code 	Coding members	Daily push and pull source code

⬆ Escalation Process

Decider	How	Transparency	Feedback Loop
@Lo Tuan Hung	We will submit a DACI via Confluence	The decision process will be shared with the team	We will share decisions with stakeholders using Atlas

☒ On/Off-track behaviors

Behavior	On ✓	Off ✗
Reliability	Consistently meets or exceeds deadlines and attends a minimum of 90% of all	Rarely meets deadlines or attends meetings regularly (attends less than

	scheduled meetings.	50% of all meetings).
Intellectual Contribution	Demonstrates strong leadership qualities, and significantly influences the final output and narrative.	Rarely provides valuable or innovative input.
Overall Contribution	An exemplary team member who actively creates content, while also assisting in editing and enhancing the work of others.	Minimal involvement, only contributing to individual sections with low quality.
Work Quality and Effort	Consistently delivers work of substantially higher quality or quantity than expected.	Fails to contribute a fair share of the work and consistently delivers sloppy or incomplete output.
Teammate Interaction	Actively seeks feedback and utilizes it to improve, offers encouragement and enthusiasm, facilitates effective communication among team members, and demonstrates interest in the ideas of others.	Displays defensive behavior and refuses assistance, frequently complains and makes excuses, interrupts, ignores, bosses, or mocks teammates.
Relevant Knowledge, Skills, and Abilities	Exhibits the necessary expertise and skills to produce outstanding work, and proactively acquires new knowledge and skills to enhance the team's performance.	Lacks fundamental knowledge and skills necessary to be an effective team member and demonstrates an unwillingness or inability to develop them.
Perseverance	Remains focused throughout the project, and actively collaborates with the team to solve problems (attends a minimum of 70% of meetings).	Frequently deviates from the project timeline, loses focus easily, and quickly gives up when faced with challenges (attends fewer than 50% of meetings or arrives late).

⚠ Underperformance

Team members who underperform may face penalty marking adjustments as described in the “Marking Adjustments For Team Deliverables Due To Low Contribution” policy (via Canvas).

Reference: <https://swinburne.instructure.com/courses/55060/pages/marketing-adjustments-for-team-deliverables-due-to-low-contribution>

Stage	Identifiers	Outcome
1	<ul style="list-style-type: none"> • Communication breakdown • Contributing insufficiently • Not finishing Jira tasks • Work of poor quality • Failure to attend lectures • Failure to attend workshop/tutorial sessions 	Group meeting to address
2	<ul style="list-style-type: none"> • Has not addressed concerns raised by group within week 	Contact facilitator

✍ Confirmed

Team members	Date	Digital Signature
--------------	------	-------------------

Lo Tuan Hung @Lo Tuan Hung	Sep 22, 2023	Lo Tuan Hung
Luong Chi Duc @Luong Chi Duc	Sep 22, 2023	Luong Chi Duc
Nguyen Vu Duy Minh @Vu Duy Minh Nguyen	Sep 22, 2023	Nguyen Vu Duy Minh
Hau Linh Chi @Chi Hau	Sep 22, 2023	Hau Linh Chi
Dao Khanh Nga Thi @Nga Thi	Sep 22, 2023	Dao Khanh Nga Thi

Project Plan

Driver	@Lo Tuan Hung
Approver	Dr. Le Minh Duc, Mr. Duong Trung Tin
Contributors	@Lo Tuan Hung @Luong Chi Duc @Vu Duy Minh Nguyen @Chi Hau @Nga Thi
Internal Stakeholders	<ul style="list-style-type: none"> • Greeliving Administrative Council • Greeliving IT Department
External Stakeholders (Target audiences)	<ul style="list-style-type: none"> • Recruiters • Job Seekers
Objective	<ul style="list-style-type: none"> • Enable job seekers to more effectively identify job opportunities that match their skills and preferences by designing an appropriate database for data analytics. • Enhance the security and user experience by implementing role-based access control and user profile management, ultimately ensuring job seekers and recruiters have a safe and efficient platform. • Safeguard user data and build trust by developing a secure authentication system, reinforcing the confidentiality of personal information on the platform. • Create a streamlined recruiting platform that empowers job seekers and recruiters to significantly reduce the time required for the job application process, improving efficiency and job placement.
Due date	Nov 26, 2023
Key outcomes	<ol style="list-style-type: none"> 1. Job seekers will access in-depth job and company details 2. Job seekers can customize their profiles for personalized job recommendations 3. Job seekers will be able to track their registered courses, applied jobs 4. CVs will be viewable only by recruiters from applied companies, preserving privacy and transparency 5. The system will recommend jobs and courses aligned with individual career goals 6. Account creation and registration will be mandatory for platform access and utilization
Status	NOT STARTED / IN PROGRESS / COMPLETE

🤔 Problem Statement

The current web platform faces critical challenges in UI/UX optimization, database efficiency, and security. These challenges impact job-seekers, who lack clarity on needed skills and struggle to find suitable job opportunities. The absence of a secure authentication system, role-based access control, and user profile management poses significant risks. Additionally, the platform lacks crucial features for personalized user experiences, job transparency, and privacy in recruitment. These shortcomings compromise project objectives, affecting both the user experience and security standards.

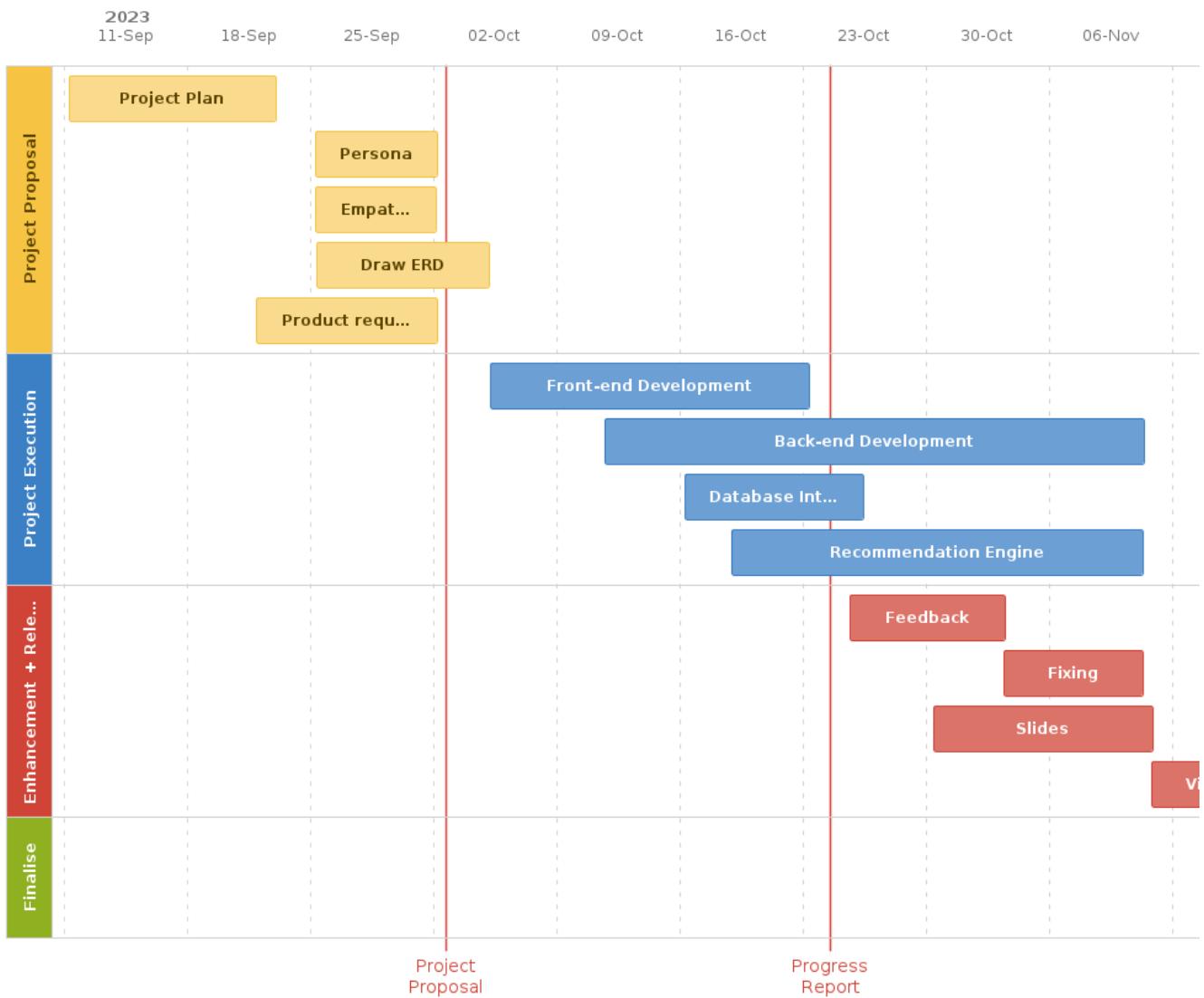
🎯 Scope

Must have:	1. Learners can sort and filter courses
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	<ol style="list-style-type: none"> 2. Job seekers can filter jobs by salary, experience level, company size, working format, specialization 3. Job seekers can see job details clearly from recruiters' posts and apply easily 4. Job seekers can track their registered courses, applied jobs 5. CVs should be viewable exclusively by recruiters from applied companies 6. It shows recommended jobs and courses for users base on individual career goals 7. Users must register personal accounts for platform access and utilization
Nice to have:	<ol style="list-style-type: none"> 1. Attractive and friendly design for the website to enhance the user experience 2. Recruiters can seamlessly set up and manage interview schedules for approved candidates through the website 3. A user feedback mechanism to continually improve the platform's features and usability.
Not in scope:	<ol style="list-style-type: none"> 1. Chat directly with the recruiter via the website

📅 Timeline

For more specifically, please check our timeline on Jira, which would have sprints. [🔗 HDCTM](#)



► Milestones and Deadlines

Milestone	Owner	Deadline	Status
Project Proposal	@Lo Tuan Hung	Oct 1, 2023	Complete
User Registration and Account Setup	@Luong Chi Duc @Nga Thi @Chi Hau	Oct 24, 2023	In progress
Job/Course filtering and sorting	@Luong Chi Duc @Vu Duy Minh Nguyen	Nov 3, 2023	In progress
Candidate Profile	@Luong Chi Duc @Lo Tuan Hung	Nov 12, 2023	Pending
Company Profile	@Luong Chi Duc @Vu Duy Minh Nguyen	Nov 21, 2023	Pending
Final Report	@Lo Tuan Hung @Luong Chi Duc @Vu Duy Minh Nguyen @Chi Hau @Nga Thi	Nov 26, 2023	Pending

Roles and responsibilities

📋 Overview

Team	HDCTM
Team members	@Lo Tuan Hung @Luong Chi Duc @Vu Duy Minh Nguyen @Chi Hau @Nga Thi
Date	Sep 9, 2023
Team mission	Our mission is to create a user-friendly database system for a global learning platform. This system will connect learning needs with job opportunities, ensuring a safe and easy experience for learners and job seekers to access course information and company listings.

📘 Roles and responsibilities

Roles	Responsibilities	Assigned
Leader	<ul style="list-style-type: none">Monitor progressResolve issues and roadblocksAssigning tasksInteracting with teammatesEstablish goals & objectivesControl workflow, timelineEnsure deliverables are completed on timeNurture collaboration among team membersCreate testing for program outcomesFinal check and improve all tasks' outcomes of every members	@Lo Tuan Hung
Programmer	<ul style="list-style-type: none">Oversee data flow within the website, leveraging the provided database.Foster collaboration with the database designer for smooth integration.Create robust unit tests for PHP code to guarantee reliability and accuracy.Uphold web security and optimize performance.Maintain comprehensive documentation and adhere to code standards.Offer technical support and resolve issues promptly.	@Luong Chi Duc
Database Designer	<ul style="list-style-type: none">Control databaseEnsure that the database fit requirements of stakeholdersMake the database become logicalWorks to achieve project requirements following the project brief	@Vu Duy Minh Nguyen

	<ul style="list-style-type: none"> • Assist application developers to easily connect to the databases • Conduct data research and query large and complex datasets to provide the best data modelling 	
UI/UX Designer	<ul style="list-style-type: none"> • Partner with developer • Ideate and create graphics • Improve the appearance of documents and websites • Optimize existing user interface designs • Communicate with clients to understand their business goals and objectives • Test products to ensure it appropriate for users and reach client's demands • Work with HTML5 and CSS3 	@Chi Hau
Business Analyst	<ul style="list-style-type: none"> • Research related projects and analysis • Combine data for visualization • Risk management • Scope the project to meet business needs • Translate technical and architectural issues so that project/program stakeholders can understand and make effective decisions • Assist in writing user acceptance tests/cases, and liaise between testing resources and stakeholders 	@Nga Thi

Risk Assessment Matrix

📋 Background

- Proceed with creating a database for a recruitment website
- A system that connects recruiters and job seekers
- Record employee CVs and create access permissions to control these CVs based on their individual roles
- Identify and mitigate risks related to data security, system performance, and regulatory compliance
- Analyze the problem and develop a strategy to address and minimize the impact on the project

⚠ Risk Identification

No	Risks	Causes
1	Information fraud and job scam	<ul style="list-style-type: none">• Inadequate job applicant verification processes• Data publicity
2	Overloaded system	<ul style="list-style-type: none">• An influx of users or requests beyond what the system can handle• Insufficient hardware and/or database resources• Inadequate scalability of network bandwidth
3	Non-compliance with laws and regulations	<ul style="list-style-type: none">• Inadequate training and education about the laws and regulations• Laws and regulations can be complex and subject to frequent changes
4	Uncontrolled expansion of project scope	<ul style="list-style-type: none">• Poorly defined initial scope• Inadequate change control procedures
5	Delay in development	<ul style="list-style-type: none">• Technical issues• Resource constraints
6	Inadequate Backup and Recovery	<ul style="list-style-type: none">• Insufficient backup systems or procedures• Abruptly substantial data volume
7	Team member turnover or absences	<ul style="list-style-type: none">• The departure or absence of team members may disrupt the workflow and delay project progress, as others may need to compensate or adjust to the change• When team members with valuable expertise and knowledge leave or are absent, the project may suffer from a loss of specialized skills and insights, potentially impacting the quality and effectiveness of the project

🎯 Risk Mitigation

No.	Risk	Mitigation Strategy	Rating	
			Severity (1-5)	Likelihood (1-5)
1	Information fraud and job scam	<ul style="list-style-type: none">• Ensure that job-posting recruiters maintain transparent profiles• Safeguard sensitive data by limiting its exposure and implementing strict access controls	Critical (15) 5S x 3L	
2	Overloaded system	<ul style="list-style-type: none">• Apply load balancing systems• Invest in additional hardware and database resources to support the increased demand	Medium (8) 4S x 2L	

3	Non-compliance with laws and regulations	<ul style="list-style-type: none"> Provide ongoing training and education for your team to ensure they understand and stay updated on relevant laws and regulations. Engage legal experts or consultants to interpret complex laws and regulations and provide guidance for compliance. 	Significant (12) 4S x 3L
4	Uncontrolled expansion of project scope	<ul style="list-style-type: none"> Define the initial scope clearly and comprehensively to avoid misunderstandings. Implement and enforce robust change control procedures, requiring thorough evaluation and approval for scope changes. 	Significant (9) 3S x 3L
5	Delay in development	<ul style="list-style-type: none"> Create a realistic project timeline Allocate adequate resources basing on members' characteristics and abilities 	Medium (6) 3S x 2L
6	Inadequate Backup and Recovery	<ul style="list-style-type: none"> Regularly back up data, test recovery procedures, and store backups off-site Limit/Breakdown uploaded data's size 	Medium (6) 3S x 2L
7	Team member turnover or absences	<ul style="list-style-type: none"> Maintain clear and up-to-date project documentation Facilitate knowledge transfer Foster a positive work environment Provide support to team members Minimize the likelihood of turnover 	Sustainable (3) 3S x 1L

Risk Rating

Sustainable (1 - 3)	Medium (4 - 8)	Significant (9 - 15)	Critical (16 - 25)
Acceptable and OK to proceed	As low as reasonably practicable	Develop and include mitigation into project plan	Refer total project to top management

Severity	5 - Extreme <i>Customers endangered due to the adverse impact</i>			1		
	4 - Major <i>Serious impact to the course of action and outcome</i>		2	3		
	3 - Moderate <i>Failures can create enough of a performance loss</i>	7	5, 6	4		
	2 - Minor					

	<i>Effects are felt, but not critical to the outcome or easy to overcome</i>				
	1 - Acceptable				
	<i>Would not be noticeable, little to no effect to outcome</i>				
	1 - Improbable 0 - 5% chance of occurrence	2 - Unlikely 5 - 25% chance of occurrence	3 - Possible 25 - 50% chance of occurrence	4 - Probable 50 - 75% chance of occurrence	5 - Almost Certain 75% or greater chance of occurrence
	<i>Likelihood</i>				

Persona

 James The Job Seeker's Persona

 Jane The Recruiter's Persona

Jane The Recruiter's Persona



Persona name	Jane The Recruiter
Persona role	Head Hunter
Description	Identifying, sourcing and recruiting high-caliber professionals to meet company's talent needs. Leveraging industry expertise, network and recruitment skills to build relationships with candidates and match them with exciting career opportunities. Desire to enhance company branding but ensuring diversity and inclusion

Company

Company name	Centelon Pty Ltd
Company size	3,000+ employees
Industry	Information and Communication Technology

Demographic information

Age	35
Gender	Female
Income	AUD\$80,000/year
Education level	Master
Residential environment	CBD, Melbourne, Australia

Personal quote

"The most difficult thing is the decision to act, the rest is merely tenacity." - **Amelia Earhart**

Biography

Professional goals	Motivators
<ul style="list-style-type: none"> • Building a strong talent pipeline • Developing expertise in recruitment marketing • Streamlining onboarding processes • Enhancing employer branding 	<ul style="list-style-type: none"> • Helping others find fulfilling careers • Interest in data-driven recruitment • Desire for career growth
Challenges	Sources of information
<ul style="list-style-type: none"> • Managing high volumes of applications • Ensuring diversity and inclusion in hiring 	<ul style="list-style-type: none"> • Industry publications • Online forums • LinkedIn
Skills	
<ol style="list-style-type: none"> 1. Communication and Networking 2. Ability to adapt to the evolving IoT industry landscape and changing talent requirements 3. Critical thinking 4. The ability to stay updated with the latest advancements, technologies 5. Cross-functional Collaboration and aligning the recruitment strategies accordingly 	

James The Job Seeker's Persona



Persona name	James The Job Seeker
Persona role	Undergraduate student
Description	Engaging in lectures, studying, participating in hands-on projects and collaborating with professors in IoT, software, and AI fields to contribute to research papers. The present demand is to become a project manager and design relevant and innovative projects for the future. However, solving numerous problems at once is challenging.

University

University name	University of Technology and Communication Hogwarts
Major	Computer Science (Software Development)

Demographic information

Age	19
Gender	Male
Education level	Undergraduation
Residential environment	Parkville, Melbourne, Australia

Personal quote

"Believe you can and you're halfway there." - Theodore Roosevelt

Biography

Professional goals	Motivators
---------------------------	-------------------

<ul style="list-style-type: none"> • Accumulating knowledge and experience to become a skilled security engineer • Achieve a stable, well-paying position within the industry 	<ul style="list-style-type: none"> • To reach desired personal salary • Foster connections with individuals who share similar interests and goals • Seeks opportunities for career growth and advancement. • The desire for continuous learning and emerging technologies
Challenges <ul style="list-style-type: none"> • Balancing technical skills with soft skills • Lack of leadership skills and relative job experience in real life • Finds challenges when dealing with complex security problems 	Sources of information <ul style="list-style-type: none"> • LinkedIn • Reputable news outlets • Professional associations
Skills	
<ol style="list-style-type: none"> 1. Proficiency in programming languages such as Python, C#, C++ and JavaScript 2. Data Structures and Algorithms 3. Ability to design systems, and create effective software architectures 4. Understand and utilize query languages like SQL for storage and retrieval of information 5. Self-learning and Innovation Skills 6. Basic knowledge of software project management 7. Strong work ethic and excellent problem-solving abilities. 8. Quick learner and adaptable to new technologies and tools. 	

Empathy Maps

 Jane The Recruiter's Empathy Map

 James The Job Seeker's Empathy Map

Jane The Recruiter's Empathy Map

What Jane Says:	What Jane Does:
"I strive to ensure diversity and inclusion in hiring"	<ul style="list-style-type: none"> Builds relationships with candidates Utilizes industry expertise to source high-caliber professionals Head Hunter of <i>Centelon Pty Ltd</i> in Australia
What Jane Thinks and Feels:	What Jane Sees:
<ul style="list-style-type: none"> Motivated to help others find fulfilling careers Overwhelmed by the high volume of applications Excited about the opportunity to enhance <i>Centelon Pty Ltd</i>'s employer branding 	<ul style="list-style-type: none"> A highly competitive job market where companies are vying for top talent A variety of career opportunities are available in the Information and Communication Technology industry The growing use of data-driven recruitment strategies
What Jane Hears:	
<ul style="list-style-type: none"> Advice on recruitment marketing, onboarding processes, and employer branding The emerging technology and insights from the recruitment industry The common challenges recruiters face while using online platforms 	
Pain Points:	Gain Points:
<ul style="list-style-type: none"> Overwhelmed by the high volume of job applications and the time required to review and access candidates Struggling to attract and secure high-caliber professional Struggling to reach a diverse candidate pool and mitigate biases 	<ul style="list-style-type: none"> Personal and professional growth through continuous learning and staying updated on trends Enhancing <i>Centelon Pty Ltd</i>'s employer branding, attracting top talent Career advancement within the recruitment field

James The Job Seeker's Empathy Map

What James Says:	What James Does:
"I want to find a job in the tech industry that aligns with my interests and values"	<ul style="list-style-type: none"> Look for the recruitment agent's website (on social media and Google) Finished online course and self-learning in coding and IT Attends local job fairs and networking events to explore opportunities in the tech industry Seeks advice from mentors or peers in the tech field
What James Thinks and Feels:	What James Sees:
<ul style="list-style-type: none"> Motivated to contribute to a positive work atmosphere and create a sense of camaraderie Open-minded and receptive to different viewpoints and ideas Confident and self-assured in my abilities and skills Excited about taking part in real IT projects Eager to learn and grow Frustrated when facing complex security problems 	<ul style="list-style-type: none"> Multiple of job postings, each representing a potential career path within the tech industry A variety of companies with different values and work atmospheres Diverse viewpoints and ideas are being shared, reinforcing the importance of an open-minded approach during network events
What James Hears:	<ul style="list-style-type: none"> Uncertainty of choosing a specific career path within the expansive field of computer science Advice from industry experts about navigating the job search process The value of building a strong professional network for career growth Emerging technologies and industry trends, emphasize the importance of staying informed
Pain Points:	Gain Points:
<ul style="list-style-type: none"> Uncertainty about which career path to pursue within the broad field of computer science Feeling overwhelmed by the rapidly evolving technology landscape Concerned about the lack of job experience and how it may affect his employment prospects Concerned about how to stand out in a competitive tech job market Anxiety about the skill gap between different candidates' level 	<ul style="list-style-type: none"> Building a strong professional network of mentors, peers, and industry connections Acquiring practical experience and skills through the provided online courses, internships, part-time jobs, or project collaborations Staying up-to-date and knowledgeable about emerging technologies and industry trends Finding a fulfilling job that aligns with my interests and provides opportunities for growth and advancement

Product requirements

Target release	Version 1.0 Nov 26, 2023
Epic	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> HDCTM-30: User authentication DONE <input checked="" type="checkbox"/> HDCTM-31: Job/Course filtering DONE <input checked="" type="checkbox"/> HDCTM-32: User Profile Editing DONE <input checked="" type="checkbox"/> HDCTM-93: Interview schedule process IN PROGRESS
Document status	DRAFT
Document owner	@Lo Tuan Hung
Designer	@Chi Hau @Nga Thi
Tech lead	@Luong Chi Duc
Technical writers	@Vu Duy Minh Nguyen
QA	@Chi Hau @Nga Thi

⌚ Objective

- Design an appropriate database structure to support advanced data analytics, enabling comprehensive insights for both job seekers and course learners.
- Implement robust role-based access control and user profile management to enhance platform security. Develop a secure authentication system to safeguard user data.
- Develop a streamlined recruiting platform that significantly reduces the time required for the job application process, benefiting both employees and recruiters.

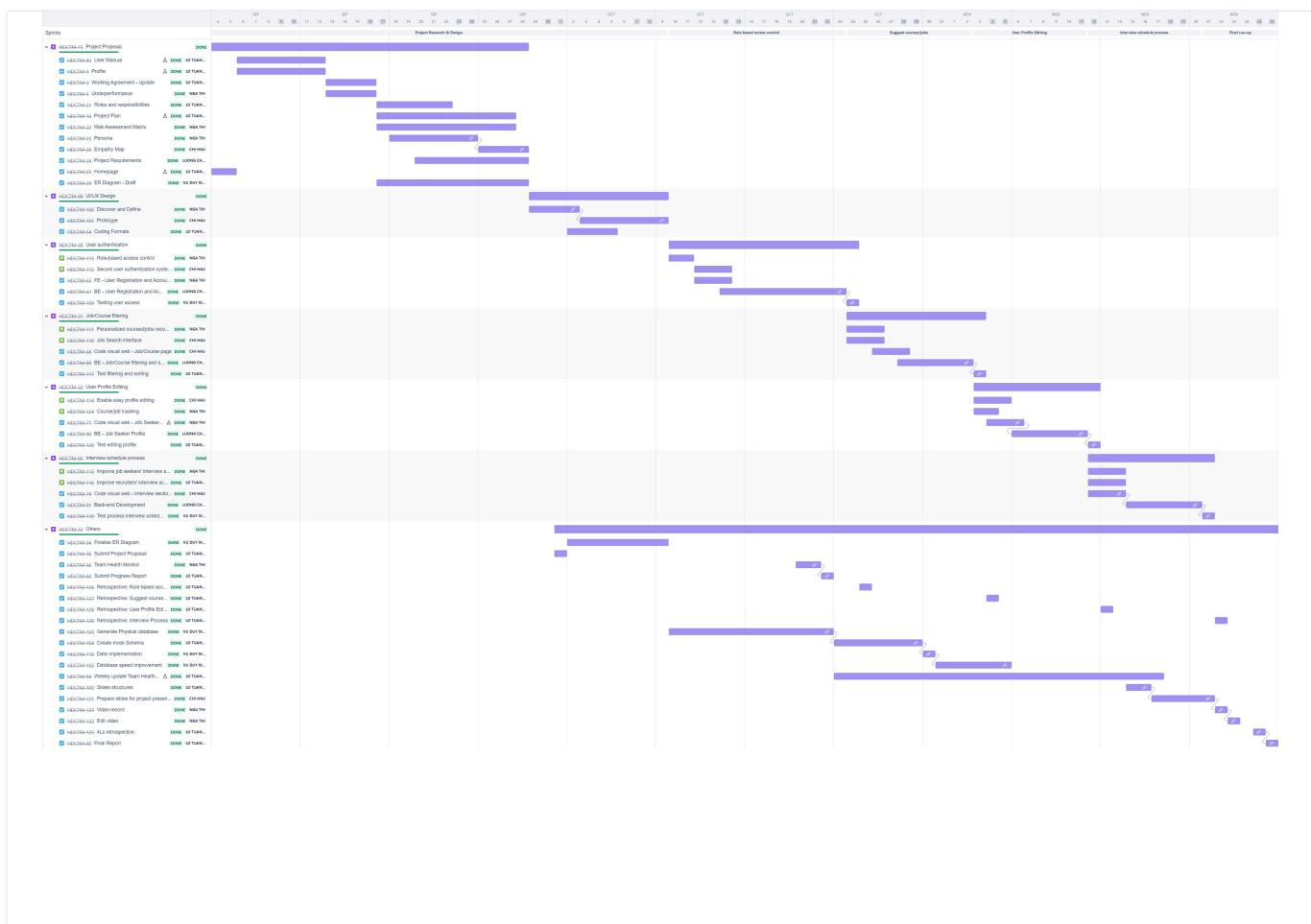
📊 Success metrics

Goal	Metric
User engagement	Achieve 50,000 monthly active user (MAU) within the first year.
Job Placements	Facilitate at least 1000 job placements within the first year.
Data Security	Zero security breaches over the lifetime of the platform.
Platform Performance	Maintain an average response time under 500 milliseconds.
User Retention	Ensure a monthly churn rate remains under 10%.
Personalize User Recommendations	Achieve 20,000 monthly click-through times on recommended content.

🤔 Assumptions

- Users will access the platform with a stable internet connection to interact with the website seamlessly.
- The availability of job listings and recruiting posts from companies and courses will be consistent.
- The database will be stored on a secure server equipped with sufficient storage and processing capabilities.

★ Milestones



Requirements

Requirement	User Story	Importance	Persona	Jira Issue	Notes
Implement role-based access control	As an administrator, I want to assign roles and permissions to users easily to ensure data security.	HIGH	<ul style="list-style-type: none"> • Job Seekers • Recruiters 	[] HDCTM-113: Role-based access control [] DONE	
Develop a secure user authentication system	As a user, I want a reliable and secure login process to protect my personal data and account information.	HIGH	<ul style="list-style-type: none"> • Job Seekers • Recruiters 	[] HDCTM-112: Secure user authentication system [] DONE	
Create a user-friendly job search interface	As a job seeker, I want an intuitive search feature to easily find relevant job listings based on my preferences.	LOW	Job Seekers	[] HDCTM-110: Job Search interface [] DONE	
Enable personalized courses/jobs recommendations	As a user, I want to receive jobs/courses recommendations tailored to my skills and career goals for a better experience.	HIGH	Job Seekers	[] HDCTM-111: Personalized courses/jobs recommendations [] DONE	
Implement course/job tracking	As a course participant, I need the ability to track and manage my registered courses/jobs easily.	MEDIUM	Job Seekers	[] HDCTM-124: Course/job tracking [] DONE	
Enable easy profile editing	As a user, I want the ability to easily edit my profile information so that I can keep my details up-to-date without encountering any unnecessary complexity.	HIGH	<ul style="list-style-type: none"> • Job Seekers • Recruiters 	[] HDCTM-114: Enable easy profile editing [] DONE	
Improve interview schedule process	As a job seeker, I want to actively choose my interview time that fit to my own schedule.	HIGH	Job Seekers	[] HDCTM-115: Improve job seekers' interview schedule process [] DONE	
	As a recruiter, I want to schedule time available for job applicants and let them choose appropriate time.	HIGH	Recruiters	[] HDCTM-116: Improve recruiters' interview schedule process [] DONE	

User interaction and design

- Authentication:** Users must have unique login credentials to access and manage information and data being accessed.
- Search Engine Functionality:** Advanced filters and complex machine learning algorithms are incorporated to ensure that users receive highly relevant recommendations and content.
- Clean Company Pages and User Profile:** The layout of information on company pages and user profiles is presented in a clear, clean format that facilitates easy comparison and highlights crucial details.
- Progress Tracking:**
 - Recruiters are able to track their candidates' application progress.
 - Users are able to track their registered courses and applied jobs.
- Customization Options:**
 - Recruiters have the flexibility to choose and customize integrations based on their specific needs.
 - Candidates have the flexibility to choose their considered field so that the system can suggest their specific jobs.
- Simplified Application Process:** Employees can easily submit their job applications directly through the website.

Open Questions

Question	Answer	Date answer
Are there specific features or tools that should be prioritized for development or improvement in the near future?	We will enhance search engine functionality with more advanced filters and more complex machine learning algorithms to provide relevant recommendations and content.	2023-09-29
How is the company planning to address feedback and suggestions from users to improve the overall user experience on the platform?	We'll establish various feedback channels, such as email, dedicated feedback forms, and user forums, where can provide their suggestions, report issues, and share their experiences. Beside, we plan to maintain open lines of communication with users by providing updates on new features, bug fixes, and improvements	2023-09-20

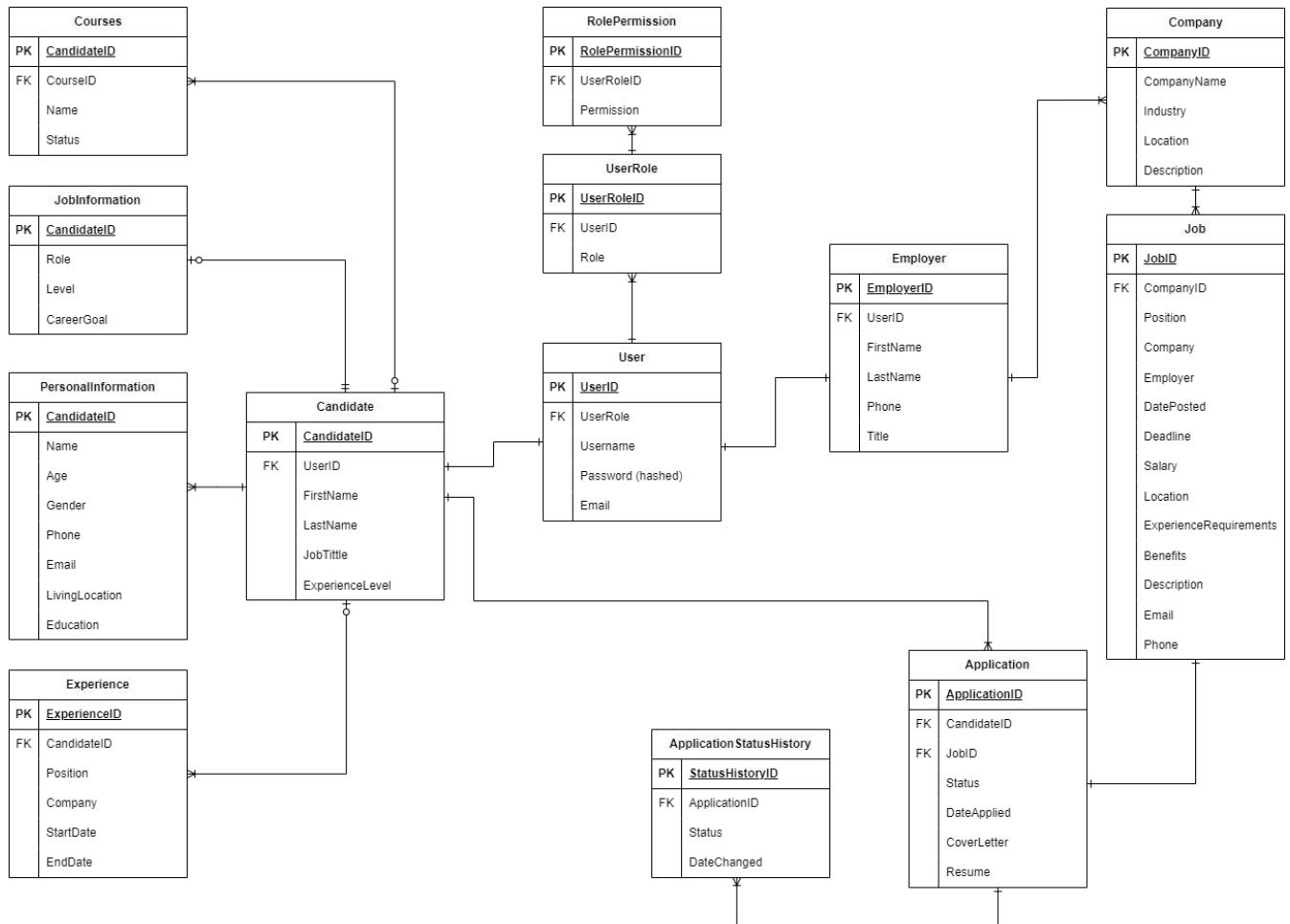
Are there initiatives or features in development to support diversity and inclusion in the hiring process, and how can recruiters participate in these efforts?		
Are there plans to enhance integrations with third-party tools or services to make the user experience more seamless?		
What measures should we take to further enhance data security and privacy on our platform?		

⚠ Out of Scope

- Instant Messaging Between Users and Recruiters Within the Website
- Integration with Third-Party Social Media Platforms
- Offline Access and Native Mobile Apps

Entity Relationship (ER) Diagram (Week 4)

For final version of this ERD, please go to page 14!



Appendix 1: Team Profile



⌄ Members' Manual

- [!\[\]\(aa9b36e8b875671c3bd80877dcf5daf3_img.jpg\) User Manual - Lo Tuan Hung](#)
- [!\[\]\(631918ad89523d302a579fdd4fcc90d4_img.jpg\) User Manual - Luong Chi Duc](#)
- [!\[\]\(11b77df6c36492f86b71343b8709773a_img.jpg\) User Manual - Nguyen Vu Duy Minh](#)
- [!\[\]\(4b950a46a9eb2fff2ca3cc94f4525968_img.jpg\) User Manual - Hau Linh Chi](#)
- [!\[\]\(9c8e836ecaaf1ab7837daca7c7914691_img.jpg\) User Manual - Dao Khanh Nga Thi](#)

Profiles

 @Lo Tuan Hung  Profile - LTH	
 @Luong Chi Duc  Profile - LCD	 @Vu Duy Minh Nguyen  Profile - NVDM
 @Chi Hau  Profile - HLC	 @Nga Thi  Profile - DKNT

Profile

@Lo Tuan Hung  Profile - LTH	
@Luong Chi Duc  Profile - LCD	@Vu Duy Minh Nguyen  Profile - NVDM
@Chi Hau  Profile - HLC	@Nga Thi  Profile - DKNT

Profile - LTH



Name	Mr. Lo Tuan Hung
Role	Project Leader
Job description	I play a crucial role in spearheading the creation of educational websites. Leading a skilled team of developers and designers, I oversee project planning, resource allocation, and the entire development cycle. My focus is on maintaining quality, efficiency, and fostering a collaborative, innovative environment. I'm dedicated to delivering exceptional solutions for our education seller clients.

Demographic information

Age	19
Gender	Male
Residential address	Gia Lam, Hanoi

University

University name	Swinburne University of Technology
Location	Hanoi
Degree	Computer Science
Major	Artificial Intelligence

Personal quote

“Everything is hard before it is easy” - Goethe

Biography

Professional goals	Motivators
<ul style="list-style-type: none">To lead and inspire my team to consistently deliver cutting-edge solutions.	<ul style="list-style-type: none">a strong desire to see technology transform society in all spheres.

<ul style="list-style-type: none"> To make sure the project is successfully finished and meets or exceeds client expectations. To maintain a strong project management foundation and stay current with best practices in the field. 	<ul style="list-style-type: none"> The fulfillment of overcoming obstacles and seeing the endeavor through to completion. Chances to work for large corporations.
Challenges	Sources of information
<ul style="list-style-type: none"> Balancing leadership and project management in a dynamic environment. Satisfying client expectations while adjusting to changing technological trends. Leading a diverse, collaborative team with varied skill sets. 	<ul style="list-style-type: none"> Staying updated through industry sources, networks, and continuous learning. Fostering team knowledge sharing and skill development. Utilizing online courses and certifications to enhance both leadership and project management skills.

🔔 Contact

Work phone	094 2864426
Gmail	lotuanhung.work@gmail.com
LinkedIn	Tuấn Hùng Lõ

👤 User Manual

 [User Manual - Lo Tuan Hung](#)

Profile - LCD



Name	Mr. Luong Chi Duc
Role	IT Professional
Job description	As an accomplished coder with a penchant for problem-solving, critical thinking, and logical reasoning, this role offers me an exciting opportunity to make a significant impact in the coding industry. My mission is to turn challenges into opportunities for growth, push the boundaries of what's possible in coding, and set new standards in the field.

Demographic information

Age	19
Gender	Male
Residential address	Ba Dinh, Ha Noi

University

University name	Swinburne University of Technology
Location	Hanoi
Degree	Computer Science
Major	Artificial Intelligence

Personal quote

"If there is no enemy within, the enemy outside can do us no harm" - African proverb

Biography

Professional goals	Motivators
<ul style="list-style-type: none">To become a notable figure, known for creating memorable innovations that leave a lasting impact.	<ul style="list-style-type: none">To achieve the level of success that considered 'crazy rich'.

Challenges	Sources of information
<ul style="list-style-type: none"> • Challenges are nothing but opportunities for growth. 	<ul style="list-style-type: none"> • From a multitude of sources, including insights shared by people from all walks of life.

🔔 Contact

Work phone	076 6032004
Gmail	luongchiduc6@gmail.com
LinkedIn	Chi Duc Luong

👤 User Manual

[!\[\]\(11b8a6fcceb832986de0c749ec79ed59_img.jpg\) User Manual - Luong Chi Duc](#)

Profile - NVDM



Name	Mr. Nguyen Vu Duy Minh
Role	IT professional (Front-end web developer)
Job description	<p>I specialize in creating user interfaces for websites and web applications, harmonizing visual elements with server-side logic. I collaborate closely with UX/UI designers and back-end developers to ensure seamless integration. My expertise lies in translating design concepts into functional, engaging interfaces, resulting in exceptional user experiences.</p>

Demographic information

Age	19
Gender	Male
Residential address	Cau Giay, Hanoi

University

University name	Swinburne University of Technology
Location	Hanoi
Degree	Computer Science
Major	Software Development

Personal quote

"Less is More" - Ludwig Mies van der Rohe

Biography

Professional goals	Motivators
<ul style="list-style-type: none">• My primary objective is to excel as a front-end programmer while actively contributing as a	I am driven by the aspiration to achieve financial success so that I could:

valuable team member.	<ul style="list-style-type: none"> I also aim to expand my expertise in back-end development with the ultimate goal of becoming a proficient full-stack web developer in the foreseeable future. 	<ul style="list-style-type: none"> Retire my parents and provide them with a comfortable life. Travel around the world and do the things I love.
Challenges		Sources of information
One of the prominent challenges I face is maintaining consistent focus, as I tend to have difficulty concentrating on a single task or objective at a time.		<ul style="list-style-type: none"> Google ChatGPT Google Scholar

🔔 Contact

Work phone	093 6098867
Gmail	nguyenvuduyminh04@gmail.com
LinkedIn	Nguyen Vu Duy Minh

👤 User Manual

[User Manual - Nguyen Vu Duy Minh](#)

Profile - HLC



Name	Ms. Hau Linh Chi
Role	UI/UX Designer
Job description	<p>As a passionate UI/UX designer, I dedicated to enhancing user experiences in product development. My creative problem-solving skills and my journey in design enable me to craft intuitive interfaces. I translate complex concepts into user-friendly designs that resonate with audiences. My ability to embrace feedback and iterate rapidly ensures our products evolve to meet user needs and industry trends, driving success and satisfaction.</p>

👤 Demographic information

Age	19
Gender	Female
Residential address	Hoan Kiem, Hanoi

🎓 University

University name	Swinburne University of Technology
Location	Hanoi
Degree	Computer Science
Major	Software Development

✍ Personal quote

“Everything is hard before it is easy” - Goethe

📜 Biography

Professional goals	Motivators
<ul style="list-style-type: none">To firstly take part in a product development process as a UX Researcher and UI/UX Designer.	<ul style="list-style-type: none">To experience as many things as possibleTo be successfulTo be able to refuse to do what I do not like

<ul style="list-style-type: none"> To become a Project Manager/ Product Manager/ Project Owner 	<ul style="list-style-type: none"> To reach financial freedom
Challenges	Sources of information
Lack of real-life working experience in the product development process	<ul style="list-style-type: none"> Self-learning online resources Opportunities to talk and work with other people

🔔 Contact

Work phone	096 9251881
Gmail	haulinhchi1881@gmail.com
LinkedIn	Chi Hầu

👤 User Manual

 [User Manual - Hau Linh Chi](#)

Profile - DKNT



Name	Ms. Dao Khanh Nga Thi
Role	Business Analyst
Job description	<i>As a Business Analyst, my role is closely tied to the project development process. I am responsible for conducting market survey, analyzing collected data to develop appropriate financial plans, and detecting and preventing market risks. Additionally, as a computer science student, I aspire to research, learn and apply scientific and technological knowledge to develop advanced, modern, and user-friendly products</i>

👤 Demographic information

Age	19
Gender	Female
Residential address	Cau Giay, Hanoi

🏫 University

University name	Swinburne University of Technology
Location	Hanoi
Degree	Computer Science
Major	Software Development

✍ Personal quote

“We always make mistakes, but everyone makes different mistakes” - Ludwig van Beethoven.

📜 Biography

Professional goals	Motivators
<ul style="list-style-type: none"> • Be able to use different programming languages. • To be expert at business and data analysis • Become a project manager 	<ul style="list-style-type: none"> • The high expectation of the occupation and the company • To meet and collaborate with professionals.
Challenges	Sources of information

<ul style="list-style-type: none"> • Lacks of expert marketing/designing/debating skills • Lacks of the accounting experiments (actual salary, cost for equipments, machines, etc.) 	<ul style="list-style-type: none"> • Take part in data/business analysis group • Search for business, market news through the Website: Investopedia.
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🔔 Contact

Work phone	091 6611659
Gmail	ngathidknt@gmail.com
LinkedIn	nga thi dao khanh

👤 User Manual

[📄 User Manual - Dao Khanh Nga Thi](#)

😊 Users Manual

@Lo Tuan Hung User Manual - Lo Tuan Hung	
@Luong Chi Duc User Manual - Luong Chi Duc	@Vu Duy Minh Nguyen User Manual - Nguyen Vu Duy Minh
@Chi Hau User Manual - Hau Linh Chi	@Nga Thi User Manual - Dao Khanh Nga Thi

User Manual - Lo Tuan Hung

My Strength	<ul style="list-style-type: none"> • Leadership • Time Management • Adaptability • Problem-Solving • Organization
My Weakness	<ul style="list-style-type: none"> • Stubborn • Sometimes overworking and not delegating • Debate • Lack of knowledge about application development
Environments I like to work in	<ul style="list-style-type: none"> • Workplace: cafe, library, home • Human aspect: <ul style="list-style-type: none"> ◦ High responsibility ◦ Well-listenning ◦ Ready to cooperate ◦ Clear goals, expectations
Preferred working hours	<ul style="list-style-type: none"> • Morning: 8:00 AM - 12:00 AM (except Monday and Thursday) • Afternoon: 1:00 PM - 5:00 PM (except Wednesday) • Night: 9:00 PM - 12:00PM
Communication preferences	<ul style="list-style-type: none"> • Gmail: lotuanhung.work@gmail.com or hungltwh01378@fpt.edu.vn
Preferred ways to receive feedback	<ul style="list-style-type: none"> • Gmail • Direct conversation
Things I need	<ul style="list-style-type: none"> • Time to reflect • Idea sessions before any big tasks with full team member
Things I struggle with	<ul style="list-style-type: none"> • I am an introvert so I need to work hard at "working in the open" • Unnecessary process - I want to optimize every work that I need to handle

User Manual - Luong Chi Duc

My Strength	<ul style="list-style-type: none">Proficiency in problem-solving, critical thinking, and logical reasoning.Strong ability to articulate ideas and engage in effective debates makes me a valuable communicator when it comes to presentation.
My Weakness	<ul style="list-style-type: none">Procrastination (currently working on improvement).Limited enthusiasm for paper and report writing.
Environments I like to work in	<ul style="list-style-type: none">Prefer working independently but can collaborate in a team with intellectually adept colleagues.Thrive in an environment where I can work with autonomy, making decisions and managing tasks in my own way.
Preferred working hours	Peak productivity hours are typically from around 9:00 PM to 12:00 AM. This preference for night-time work allows me to have better focus, resulting in efficient and effective work outcomes.
Communication preferences	<ul style="list-style-type: none">Highly value face-to-face interactions.Gmail: luongchiduc6@gmail.com or duclcswh01069@fpt.edu.vn.
Preferred ways to receive feedback	<ul style="list-style-type: none">Honest and straight-forward feedbacks.Via Gmail.
Things I need	A team of responsible and efficient coworkers who can complement my skills and share the workload effectively.
Things I struggle with	Struggles with maintaining focus (I have ADHD).

User Manual - Nguyen Vu Duy Minh

My Strength	<p>Proficient in:</p> <ul style="list-style-type: none"> • Web development • App development • Create and deliver presentations • Database management
My Weakness	<ul style="list-style-type: none"> • Writing • Debate
Environments I like to work in	<ul style="list-style-type: none"> • Workplaces: Cafes, Libraries • Team member: <ul style="list-style-type: none"> ◦ Professional ◦ Direct ◦ Embrace collaboration
Preferred working hours	<ul style="list-style-type: none"> • 1pm–5pm (Monday, Tuesday, Thursday) • 8pm-11pm (Wednesday, Friday)
Communication preferences	<ul style="list-style-type: none"> • Face-to-face • Online contact information: <ul style="list-style-type: none"> ◦ Email: nguyenvuduyminh04@gmail.com ◦ Tel: +84 936098867
Preferred ways to receive feedback	<p>I appreciate receiving feedback in a timely manner, and I prefer feedback that is specific and provides clear examples.</p> <p>I would like to receive feedback through texts or emails.</p>
Things I need	<ul style="list-style-type: none"> • Online resources • Flexibility in work arrangements
Things I struggle with	<ul style="list-style-type: none"> • Assertiveness • Time management

User Manual - Hau Linh Chi

My Strength	<ul style="list-style-type: none"> • UI/UX Design • UX Research • Web Development • Presentation
My Weakness	Back-end Development
Environments I like to work in	<ul style="list-style-type: none"> • Workplaces: <ul style="list-style-type: none"> ◦ Quiet ◦ Motivational • Teammates characteristics & abilities: <ul style="list-style-type: none"> ◦ Responsibility ◦ Respect ◦ Goal orientation ◦ Collaboration ◦ Communication
Preferred working hours	<ul style="list-style-type: none"> • Weekly changeable schedules based on other work • Prefer working hours: <ul style="list-style-type: none"> ◦ Morning: 08:00 AM - 10:30 AM (Wed, Fri) ◦ Afternoon: 02:00 PM - 04:30 PM (Mon, Tue, Wed) ◦ Evening: 08:00 PM - 09:30 PM (Mon, Tue, Wed, Fri)
Communication preferences	<ul style="list-style-type: none"> • Face-to-face • Online: <ul style="list-style-type: none"> ◦ Email: haulinhchi1881@gmail.com
Preferred ways to receive feedback	<ul style="list-style-type: none"> • Instructive and straight-forward feedbacks • Face-to-face, via Facebook Messenger or Email
Things I need	<ul style="list-style-type: none"> • Agreement from all members before making any decision for the team • Teammates that are responsible and willing to listen to different opinions
Things I struggle with	Have difficulty in staying concentrated and easily get distracted

User Manual - Dao Khanh Nga Thi

My Strength	<ul style="list-style-type: none"> Writing documents/reports and researching Capability of presentation, designing and marketing The capability of Business analysis: Detect the market risks/potentials, market survey, data analysis.
My Weakness	<ul style="list-style-type: none"> Back-end development Debate Accounting/Auditing Data visualization
Environments I like to work in	<ul style="list-style-type: none"> A quite zone for better concentrating, ideal places such as book coffee, library, etc. I feel most comfortable working from home, where I can complete work with the best efficiency The environment with friendly co-workers will result in an effective partnership including communication or teamwork.
Preferred working hours	<ul style="list-style-type: none"> Every afternoon (2pm - 5pm, except Saturday) Evenings (8-10pm), but less active depending on work
Communication preferences	<ul style="list-style-type: none"> Facebook: Nga Thi Đào Khanh Gmail: ngathidknt@gmail.com or thidknswh01267@fpt.edu.vn Tel: +84 916611659
Preferred ways to receive feedback	<ul style="list-style-type: none"> Direct conversation (should be scheduled)
Things I need	<ul style="list-style-type: none"> Working with responsible teammates Keep contact during the teamwork to improve the productivity of a project
Things I struggle with	<p>I will feel uncomfortable when disturbed while focusing on work. Therefore, sometimes I will miss important information when I am in a state of concentration.</p>

Appendix 2: Meeting notes

[Create Meeting Notes from Meeting Calendar](#)

[Create meeting note](#)

Incomplete tasks from meetings

Task report

Looking good, no incomplete tasks.

Decisions from meetings

Page Title	Decisions
2023-09-18 Project brief discussion with client GreeLiving	 Spend more time thinking and discussing solutions before handling the project plan
2023-09-20 Solutions Discussion	 Confirm the strategy again with the approvers
2023-09-28 Project Proposal Review	 Re-consider key outcomes, scope. Edit and finalise the mentioned-above items.
2023-10-06 Weekly meeting	 Keep track of the Jira tasks
2023-10-13 Weekly meeting	 @... start coding back-end
2023-10-20 Weekly meeting	 Finalize all the above-mentioned action items for the Progress Report Keep track of the Jira tasks
2023-10-27 Weekly meeting	 Keep working on tasks assigned
2023-11-03 Weekly meeting	 Keep track of tasks on Jira
2023-11-10 Weekly meeting	 Keep track of tasks on Jira
2023-11-17 Weekly meeting	 All team member needs to focus and keep on track with the Jira issues
2023-11-24 Weekly meeting	 @... submit 'Final Report' due Nov 26, 2023

All meeting notes

Title	Creator	Modified
2023-11-24 Weekly meeting	Lo Tuan Hung	Nov 24, 2023
2023-11-10 Weekly meeting	Lo Tuan Hung	Nov 20, 2023
2023-11-17 Weekly meeting	Lo Tuan Hung	Nov 20, 2023
2023-11-03 Weekly meeting	Lo Tuan Hung	Nov 20, 2023
2023-10-27 Weekly meeting	Lo Tuan Hung	Nov 15, 2023
2023-10-20 Weekly meeting	Lo Tuan Hung	Nov 14, 2023
2023-10-13 Weekly meeting	Lo Tuan Hung	Nov 14, 2023
2023-10-06 Weekly meeting	Lo Tuan Hung	Nov 14, 2023
2023-09-28 Project Proposal Review	Lo Tuan Hung	Nov 14, 2023
2023-09-20 Solutions Discussion	Lo Tuan Hung	Nov 14, 2023
2023-09-18 Project brief discussion with client GreeLiving	Lo Tuan Hung	Nov 14, 2023

2023-09-18 Project brief discussion with client GreeLiving

Secretary

@Lo Tuan Hung

Goals

- Discuss about tasks for this week
- Ask the client for the necessary information about the project

Discussion topics

Item	Results
Tasks for this week	<ul style="list-style-type: none">• Try to finish Jira issues 16,23,24
Client discussion	<ul style="list-style-type: none">• Target customers = ones who finding part-time or labor-intensive jobs + students who come to Australia (\approx 6 years stay in Aus = 4 years learning + 2 years after for working)• Range = Australian market (Due to its clear process and they are almost the same for every company)• Current target stakeholders:<ul style="list-style-type: none">◦ Job seekers◦ Learners◦ Company recruiters• Example for marketing + sale platform: HubSpot Software, Tools, Resources for Your Business• Sources of the information used in the project: contact the client if needed (with reasonable convincement)• Expectation of the client:<ul style="list-style-type: none">◦ The website includes short courses in Hospitality field◦ It can suggest/help user to find the most suitable job/course◦ All information about job requirements would be clearly published◦ Platform's functions: Job Search and Online Interview◦ Recruitment process (process designed for review):<ul style="list-style-type: none">▪ Job Search → Submit CV▪ Pass CV review → Recruiter arrange interview manually▪ <i>The review/interview process would not be recorded, only the result would be recorded</i>▪ Suggest solution: the platform bases on the interview feedbacks to suggest the job seeker courses to learn to improve. Or, automatic chatbot with pre-set up data flow• For Project Proposal, content is not limited but should be close to the marking criteria• For Project Plan, approvers are 2 tutors and should be written in solid text format instead of tagging

	<ul style="list-style-type: none"> • Persona would be formed after the team strategy decisions • 3 phase applied for a project: Research → Build → Test
Deadlines update	HDCTM-48: DKNT DONE LATE Other tasks were finished on time!

Action items

- Everyone would spend time thinking about the strategy, and approach solutions to propose to the client due Oct 22, 2023
- @Vu Duy Minh Nguyen gets used to Microsoft Access/ Oracle SQL/ My SQL
- @Luong Chi Duc reviews PHP programming
- @Lo Tuan Hung reduce work-load for @Nga Thi

Decisions

- 👉 Spend more time thinking and discussing solutions before handling the project plan

2023-09-20 Solutions Discussion

Secretary

@Nga Thi

Goals

- The strategy for the technical and business issues of the project

Discussion topics

Members' ideas	Results
@Luong Chi Duc	<ul style="list-style-type: none">Problem: limited target, focus on only labour while the website is difficult to reachStakeholders: users, recruiters.Solution: easy approaches for users to get used to the website.
@Chi Hau	<ul style="list-style-type: none">Problem: how to standardized the data between the recruiters and labourersSolution: suggest based on the user information, information standard
@Lo Tuan Hung	<ul style="list-style-type: none">Problem: 1. design front-end, 2.Data optimization, 3. security dataSolution: 1. reduce the time for printing and transferring data; 2,3. Redesign the data construction, using only authentical user data(gmail, phone no,...), role-based access control, design a suitable database .public for recruiters, private for labourers
@Nga Thi	<ul style="list-style-type: none">Problem: 1. the issue of information fraud, 2. the problem of job scam.solution: data analysis
Deadlines update	Other tasks were finished on time!
Sum up	
<p>Problem:</p> <ol style="list-style-type: none">1. The website is difficult to reach for labour who lack of the technology knowledge.2. Data optimization3. Data security (information fraud and job scam)4. How to standardized the data between the recruiters and labourers	
<p>Solution:</p> <ol style="list-style-type: none">1. Redesign a user-friendly website2. Create a authentical data construction (using 1 phone no, gmail for an account)	

3. Using Role-based access control for data (public for recruiters, private for the labourers)

4. Suggesting method (based on the provided user's information and desire)

Action items

- @Lo Tuan Hung generate demonstration for [Roles and responsibilities](#) and [Project Plan](#) due Sep 22, 2023
- @Nga Thi generate demonstration for [Risk Assessment Matrix](#) due Sep 27, 2023

Decisions

-  Confirm the strategy again with the approvers

2023-09-28 Project Proposal Review

Secretary

@Chi Hau

Goals

- Review all parts of the project proposal
- Review ERD

Discussion topics

Item	Results
Homepage	Remove icons from body text
Working agreement	<input checked="" type="checkbox"/> Done
Project Plan - Overview table (Informed)	<ul style="list-style-type: none">• “Informed” → “Internal stakeholders”• Add “External stakeholders (Target audience)” section: Recruiter, Job Seeker
Project Plan - Overview table (Objective)	<input checked="" type="checkbox"/> Done
Project Plan - Overview table (Key outcomes)	<p>5. How to suggest courses tailored to individual career goal? → May be attach tags to each data record, allowing users to personalize their profiles by selecting specific tags. If the chosen tags align with those assigned to the data records, relevant suggestions will be provided to the users.</p> <p>6. Account security will be ensured with one-account-per-user policies and email verification</p> <ul style="list-style-type: none">• Ensure one-account-per-user policies: Check if the provided email/username corresponds to any existing recorded data. If a match is found, prohibit the creation of another account with the same email/username.• Email verification: Assess whether it is feasible or not.
Project Plan - Problem statement	<input checked="" type="checkbox"/> Done
Project Plan - Scope	Define again
Project Plan - Timeline	<input checked="" type="checkbox"/> Done
Project Plan - Milestones & Deadline	<input checked="" type="checkbox"/> Done
Project Plan - Role & Responsibility	<input checked="" type="checkbox"/> Done

Project Plan - Risk Assessment Matrix	<ul style="list-style-type: none"> • Create table • Add more risk related to human resources in the process of creating this website
Personas	<ul style="list-style-type: none"> • 100-word description • Foreign company name • No references, time in statistics • Biography: More details • Add “Skills” section: List only or add skill proficiency level. • Challenges related to Pain points in Empathy Map • Sources of information: Based on this to think how to make our website outweigh those sources • Job description: Add 1-2 sentences about what they do recently related to our project, problem
Empathy map	Create table
Product requirement - Requirements	After finishing Scope
Product requirement - User interaction and design	Assigned for @Chi Hau
ERD	Rearrange to ensure the diagram is clearly visible
Deadlines update	All deadlines were done ON TIME

Action items

@Lo Tuan Hung re-consider key outcomes, and scope due Oct 1, 2023 .

Decisions

 Re-consider key outcomes, scope.
Edit and finalise the mentioned-above items.

Weekly meeting (recurring, starting 2023-09-22)

Meetings in this series

Confluence Page	Links	Date	Attendees
2023-11-24 Weekly meeting	Open in Calendar	Friday Nov 24, 2023 22:30 - 23:30 @ https://meet.google.com/vxt-nkdy-uvz	<ul style="list-style-type: none"> duclcswh01069@fpt.edu.vn ✓ chihlsw01418@fpt.edu.vn ✓ thidknswh01267@fpt.edu.vn ✓ hungltswh01378@fpt.edu.vn ORGANIZER ✓ minhnvdsw00981@fpt.edu.vn ✓
2023-11-17 Weekly meeting	Open in Calendar	Friday Nov 17, 2023 22:30 - 23:30 @ https://meet.google.com/vxt-nkdy-uvz	<ul style="list-style-type: none"> duclcswh01069@fpt.edu.vn ✓ chihlsw01418@fpt.edu.vn ✓ thidknswh01267@fpt.edu.vn ✓ hungltswh01378@fpt.edu.vn ORGANIZER ✓ minhnvdsw00981@fpt.edu.vn ✓
2023-11-10 Weekly meeting	Open in Calendar	Friday Nov 10, 2023 22:30 - 23:30 @ https://meet.google.com/vxt-nkdy-uvz	<ul style="list-style-type: none"> duclcswh01069@fpt.edu.vn ✓ chihlsw01418@fpt.edu.vn ✓ thidknswh01267@fpt.edu.vn ✓ hungltswh01378@fpt.edu.vn ORGANIZER ✓ minhnvdsw00981@fpt.edu.vn ✓
2023-11-03 Weekly meeting	Open in Calendar	Friday Nov 03, 2023 22:30 - 23:30 @ https://meet.google.com/vxt-nkdy-uvz	<ul style="list-style-type: none"> duclcswh01069@fpt.edu.vn ✓ chihlsw01418@fpt.edu.vn ✓ thidknswh01267@fpt.edu.vn ✓ hungltswh01378@fpt.edu.vn ORGANIZER ✓ minhnvdsw00981@fpt.edu.vn ✓
2023-10-27 Weekly meeting	Open in Calendar	Friday Oct 27, 2023 22:30 - 23:30 @ https://meet.google.com/vxt-nkdy-uvz	<ul style="list-style-type: none"> duclcswh01069@fpt.edu.vn ✓ chihlsw01418@fpt.edu.vn ✓ thidknswh01267@fpt.edu.vn ✓ hungltswh01378@fpt.edu.vn ORGANIZER ✓ minhnvdsw00981@fpt.edu.vn ✓
2023-10-20 Weekly meeting	Open in Calendar	Friday Oct 20, 2023 22:30 - 23:30 @ https://meet.google.com/vxt-nkdy-uvz	<ul style="list-style-type: none"> duclcswh01069@fpt.edu.vn ✓ chihlsw01418@fpt.edu.vn ✓ thidknswh01267@fpt.edu.vn ✓

			<ul style="list-style-type: none"> • hungltsw01378@fpt.edu.vn • ORGANIZER • minhnvdsw00981@fpt.edu.vn
2023-10-13 Weekly meeting	Open in Calendar	Friday Oct 13, 2023 22:30 - 23:30 @ https://meet.google.com/vxt-nkdy-uvz	<ul style="list-style-type: none"> • duclcswh01069@fpt.edu.vn • chihlsw01418@fpt.edu.vn • thidknsw01267@fpt.edu.vn • hungltsw01378@fpt.edu.vn • ORGANIZER • minhnvdsw00981@fpt.edu.vn
2023-10-06 Weekly meeting	Open in Calendar	Friday Oct 06, 2023 22:30 - 23:30 @ https://meet.google.com/vxt-nkdy-uvz	<ul style="list-style-type: none"> • duclcswh01069@fpt.edu.vn • chihlsw01418@fpt.edu.vn • thidknsw01267@fpt.edu.vn • hungltsw01378@fpt.edu.vn • ORGANIZER • minhnvdsw00981@fpt.edu.vn

2023-10-06 Weekly meeting

Secretary

@Luong Chi Duc

Goals

- Figma design review
- Responsibility for Front-end distribution (main role and supporters)

Discussion topics

Item	Results
• Figma design review	• Status: In progress
• Database design review	• Status: In progress
• Responsibility for Front-end distribution (main role and supporters)	• Finish web structure design • Unify HTML & CSS rules

Action items

- @Chi Hau finish Figma design due Oct 13, 2023
- @Vu Duy Minh Nguyen finish database design due Oct 13, 2023
- @Nga Thi @Chi Hau review Github due Oct 13, 2023

Decisions

 Keep track of the Jira tasks

2023-10-13 Weekly meeting

Secretary

@Vu Duy Minh Nguyen

Goals

- UI/UX Design check
- Front-end check and assign
- Discuss about work for the next week

Discussion topics

Item	Results
UI/UX Design check	<ul style="list-style-type: none">• Finished designs for page 3 → 12• Filled HTML template• Finished  Coding Formats• Adjusted Website structures
Front-end check	<ul style="list-style-type: none">• On going• The progress was interrupted due to unfamiliar while using Github
Deadlines update	All tasks were done ON TIME

Action items

- @Nga Thi finish designs for page 3 → 12 due Oct 14, 2023
- @Luong Chi Duc start coding back-end

Decisions

 @Luong Chi Duc start coding back-end

2023-10-20 Weekly meeting

Secretary

@Chi Hau

Goals

- Update project plan page
- Finalise Figma Design
- Finalise ERD

Discussion topics

Item	Results
Update project plan page	The following sections have been updated: <ul style="list-style-type: none">• Objectives• Problem Statement• Scope• Milestone and Deadlines
Figma design and front-end code check	Finalise Interview Schedule Function (Candidate and Company's Profile)
ERD check	<ul style="list-style-type: none">• Use Database checklist to check the current design• Consider the function interview schedule's database design• Finalise ERD
Deadlines update	All tasks were finished ON TIME

Action items

- Redesign Interview Schedule Function (Candidate and Company's Profile) as the ERD @Chi Hau due Oct 23, 2023
- Recheck ERD, fill erd.txt file, and update what is different from the old one @Vu Duy Minh Nguyen due Oct 23, 2023

Decisions

-  Finalize all the above-mentioned action items for the Progress Report
Keep track of the Jira tasks

Database checklist for 2023-10-20 meeting

2023-10-27 Weekly meeting

Secretary

@Chi Hau

Goals

Keep tracking team progress

Discussion topics

Item	Results
Review Function names and Rearrange some properties	Done
Review Website structure	Drop page 4
Review Design and Frontend code	Set deadline for some new modifications
Review Database physical state	Done
Review Mocking data	In progress Some issues occurred during the process (wrong peaked data) => resolved
Review PHP	Start handling
Deadlines update	All tasks were finished ON TIME

Action items

- @Luong Chi Duc start handling PHP coding back-end due Nov 2, 2023

Decisions

- 👉 Keep working on tasks assigned

2023-11-03 Weekly meeting

Secretary

@Chi Hau

Goals

Weekly checking meeting

Discussion topics

Item	Results
ER diagram recheck	Done
Physical database	Done
Use cases scenario description and implementation	Done
Performance (Indexes) Identification of attributes suitable for indexing, test of indexes	Done
Major-specific contributions/ Individual students' contributions according to major	Prepare for Week 10, 11 on-class lecture
Team Retrospective/ Team's thoughts on teamwork and contributions	@Vu Duy Minh Nguyen
Final slides and edit video	@Chi Hau @Nga Thi
Deadlines update	All tasks for ☒ HDCTM-31: Job/Course filtering DONE were finished ON TIME

Action items

- @Chi Hau and @Nga Thi start doing task user story for the new sprint/function due Nov 5, 2023
- @Lo Tuan Hung write [☒ Retrospective: Suggest courses/jobs](#) due Nov 4, 2023

Decisions

- ☒ Keep track of tasks on Jira

2023-11-10 Weekly meeting

Goals

- Weekly progress tracking

Discussion topics

Item	Results
Back-end development	<ul style="list-style-type: none">• Could not link so deeply as pre-design idea => minimize the number of possible actions on the page
Deadlines update	<p><input checked="" type="checkbox"/> HDCTM-102: Database speed improvement</p> <p>DONE LATE</p> <p>Other tasks were done ON TIME</p>

Action items

- @Vu Duy Minh Nguyen needs to manage his time more carefully
- @Vu Duy Minh Nguyen prepare test cases due Nov 12, 2023

Decisions

- 👉 Keep track of tasks on Jira

2023-11-17 Weekly meeting

Goals

- Back-end tracking
- Slides progress tracking

Discussion topics

Item	Results
Back-end tracking	<ul style="list-style-type: none">• Fixing error database connect to the page• There may be some problems on matching datum between tables and pages => carefully recheck the database design• Need to add some constraint on 'UPDATE' and 'DELETE' queries
Slides progress tracking	 Process and Product Video (Content) Sections fully done on content: <ul style="list-style-type: none">• Title slide with team names• Introduction• Project background• Mission statement• Objectives• Requirements
Deadlines update	All tasks were finished ON TIME

Action items

- @Luong Chi Duc keep fixing bugs due Nov 20, 2023
- @Vu Duy Minh Nguyen prepare test cases due Nov 21, 2023

Decisions

-  All team member needs to focus and keep on track with the Jira issues

2023-11-24 Weekly meeting

Goals

- Final sum up

Discussion topics

Item	Results
Final sum up	<ul style="list-style-type: none">• All test cases were successfully passed• Presentation video was edited with high quality and uploaded• All team member are satisfied with the team working process
4Ls retrospective discussion	4 Ls retrospective (Week 12)
Deadlines update	All deadlines were finished ON TIME

Action items

@Lo Tuan Hung write 4Ls retrospective due Nov 25, 2023

Decisions

 @Lo Tuan Hung submit 'Final Report' due Nov 26, 2023

Team Health Monitor

Team name	HDCTM
Sponsor	
Health monitor cadence	This monitor will be updated during the end of each week.

TEAM health assessment

With your team, read the definition of each attribute of healthy, high-performing teams out loud. On the count of three have each person rate how they feel the team is doing compared to each definition (thumbs-up/green, thumbs-sideways/yellow, thumbs-down/red). Record the results of each attribute rating in the table. Highlight each cell using this color code: **HEALTHY** = "We're strong here", **BIT SICK** = "We're ok... but a little shaky", **SICK** = "We're not healthy".

Area	Nov 24, 2023
🚩 Full-time owner There is one lead who is accountable for the result of this project. This needs to be someone whose time is at least 80% dedicated to it, and who can champion the mission inside and outside of the team.	@Lo Tuan Hung is our leader and his leadership is significantly constructive.
⚖️ Balanced team Roles and responsibilities are clear and agreed upon. The project has people with the right blend of skill set. Acknowledge that team members can change by stage.	All deadlines are met by our team members thanks to their efficient work. We acknowledged the strengths of each team member, so that they are in charge of the proper tasks. Additionally, our leader established pre-prepared topics for each meeting, thereby ensuring most issues are resolved before they worsen. Finally, each meeting will be noted in order to monitor the project's development and team members' performance.
❤️ Shared understanding The team has a common understanding of why they're here , the problem/need, are convinced about the idea, confident they have what they need, and trust each other.	Following completion of the specified tasks, each team member will reinspect and contribute any further ideas they may have, regarding the ER diagram, database planning, and other undertakings during our weekly meeting. That way, everyone may remain aware of what they are doing and comprehend what the other team members are responsible for.
⌚ Value and metrics It's clear what success means from a business and user's perspective, and there is a unique value proposition in place for the target users and to the business. Success is defined, with a goal, and how it will be measured.	We have clarified all ambiguities and are now concentrating on each individual function based on the sprint setup in Jira. Success is defined by our ability to meet all deadlines without any lapses.

 Proof of concept	Some sort of demonstration has been created and tested, that demonstrates why this problem needs to be solved, and demonstrates its value.	Our proof of concept phase validated the existence of a pressing problem, showcased the value of our project through prototypes, received positive user feedback, observed early signs of success, and garnered vital stakeholder support. These outcomes solidify the path forward for our IT project.
 One-pager	The project is summarized in a one-pager and shared with anyone so that they understand the purpose of the project, and its value.	Our one-pager is the project page on our Confluence space.
 Managed dependencies	Clear understanding of complexity, infrastructure involved, risks, resources, effort, and timeline. Clear understanding of who we depend on, and who depends on us .	To the present, all team members are aware of the factors relevant to our project.
 Velocity	The team is making incremental progress by shipping concrete iterations to stakeholders (and, even better, to production), learning along the way, and implementing lessons learned , resulting in greater success.	We're adopting proper approaches and following solid progress.

Focus area: Value and metrics

Ask your team to collectively come up with one attribute you want to focus on. Then, call out ways to move the **SICK** or **BIT SICK** toward **HEALTHY**. Make sure they are actionable, specific, and measurable.

Date	Focus areas and action items

Retrospectives

[Add Retrospective](#)

Error while fetching page properties report data: Bad Request

Retrospective: Role based access control (RBAC)

📋 Overview

Reflect on past work and identify opportunities for improvement by following the instructions for the [Retrospective Play](#).

Date	Oct 25, 2023
Team	HDCTM
Participants	@Luong Chi Duc @Vu Duy Minh Nguyen @Chi Hau @Nga Thi

☁️ Retrospective

- ℹ️ Add your Start doing, Stop doing, and Keep doing items to the table below. We'll use these to talk about how we can improve our process going forward.

Start doing	Stop doing	Keep doing
<ul style="list-style-type: none">Initiate regular check-ins or stand-up meetings specifically focused on the RBAC implementation.	<ul style="list-style-type: none">Cease procrastination when facing challenges or issues.	<ul style="list-style-type: none">Gather insights into the specific needs and expectations of job seekers and businesses.
<ul style="list-style-type: none">Begin implementing time blocking techniques to allocate dedicated time slots for specific tasks related to RBAC.	<ul style="list-style-type: none">Stop having meetings without clear agendas or outcomes.	<ul style="list-style-type: none">Maintaining a culture of open communication and feedback within the team.
<ul style="list-style-type: none">Start encouraging parallel execution of tasks whenever possible.	<ul style="list-style-type: none">Cease incorporating unnecessary features that do not directly align with the immediate goals of the RBAC implementation.	<ul style="list-style-type: none">Continue with regular progress tracking mechanisms to keep everyone informed about the current status of the RBAC implementation.
<ul style="list-style-type: none">Begin creating comprehensive RBAC-specific manual test cases to cover different scenarios and functionalities.		
<ul style="list-style-type: none">Start regular Entity-Relationship (ER) diagram reviews		

✓ Action items

- @Luong Chi Duc ensure RBAC-specific automated tests are in place for ongoing validation.
- @Vu Duy Minh Nguyen conduct a comprehensive review of the ER diagram.

Retrospective: Suggest courses/jobs

📋 Overview

Reflect on past work and identify opportunities for improvement by following the instructions for the [Retrospective Play](#).

Date	Nov 4, 2023
Team	HDCTM
Participants	@Lo Tuan Hung @Luong Chi Duc @Chi Hau @Nga Thi

☁️ Retrospective

- ℹ️ Add your Start doing, Stop doing, and Keep doing items to the table below. We'll use these to talk about how we can improve our process going forward.

Start doing	Stop doing	Keep doing
<ul style="list-style-type: none">Optimize the filter functionality based on user engagement and preferences	<ul style="list-style-type: none">Cease overcomplicating filter options unnecessarily.	<ul style="list-style-type: none">Ensure that the filter operates efficiently, providing a seamless user experience
<ul style="list-style-type: none">Enhance communication and collaboration to ensure the filter aligns with both user needs and technical feasibility.	<ul style="list-style-type: none">Base design decisions on data rather than assumptions	<ul style="list-style-type: none">Accelerate the development process and ensure the filter aligns closely with user expectations.
<ul style="list-style-type: none">Ensure a deeper understanding of user requirements for effective filter design.	<ul style="list-style-type: none">Cease overcomplicating the user interface (UI) of the filter unnecessarily.	<ul style="list-style-type: none">Continue with agile sprint planning and review practices.

✓ Action items

- @Lo Tuan Hung schedule a meeting to review the testing results for filter options.
- @Vu Duy Minh Nguyen conduct a comprehensive review of the ER diagram.

Retrospective: User Profile Editing

📋 Overview

Reflect on past work and identify opportunities for improvement by following the instructions for the [Retrospective Play](#).

Date	Nov 13, 2023
Team	HDCTM
Participants	@Lo Tuan Hung @Luong Chi Duc @Chi Hau @Nga Thi

☁️ Retrospective

- i** Add your Start doing, Stop doing, and Keep doing items to the table below. We'll use these to talk about how we can improve our process going forward.

Start doing	Stop doing	Keep doing
<ul style="list-style-type: none">• Begin creating a thorough set of manual test cases specifically for the user profile editing function.	<ul style="list-style-type: none">• Cease assuming that the user profile editing function is flawless. Acknowledge the possibility of issues and actively seek areas for improvement.	<ul style="list-style-type: none">• Maintain a collaborative approach to testing by involving relevant team members in defining and executing manual test cases.
<ul style="list-style-type: none">• Introduce regular pair programming sessions for front-end tasks.	<ul style="list-style-type: none">• Stop the lack of recognition for team achievements.	<ul style="list-style-type: none">• Ensure uniformity in code structure, naming conventions, and formatting.
<ul style="list-style-type: none">• Facilitate knowledge transfer and skill development about coding within team members.		<ul style="list-style-type: none">• Support work-life balance and accommodate individual needs.

✓ Action items

- @Lo Tuan Hung @Chi Hau @Nga Thi conduct code reviews with a focus on front-end architecture.

4 Ls retrospective (Week 12)

📋 Overview

Reflect back on what you and your team learned and what motivates the group to succeed by following the instructions for the 4Ls Retrospective Play. This document was done in the [📅 2023-11-24 Weekly meeting](#)

Team	HDCTM
Team members	@Lo Tuan Hung @Luong Chi Duc @Chi Hau @Nga Thi @Vu Duy Minh Nguyen
Date	Nov 24, 2023

💡 4Ls retrospective

Milestones	Loved	Longed for	Loathed	Learned
Project Proposal	<ul style="list-style-type: none">Weekly meetings are organised well to follow, assessTeam members actively contributed ideas and insights, fostering a sense of teamworkRegular feedback sessions during the proposal development were valuable	<ul style="list-style-type: none">The timeline in the proposal was somewhat vague. A more explicit and detailed timeline would help in planning and resource allocationThe proposal process could have involved a more diverse range of perspectives. Including input from different departments or disciplines would enrich the proposal's content	<ul style="list-style-type: none">The time management of some team members needed to improve	<ul style="list-style-type: none">Need the connection between the project scopes/targets and the milestones/deadlines in the project planRisk assessment matrix should include a table briefly describing each risk
Role based access control (RBAC)	<ul style="list-style-type: none">Easy loginClear accountability by assigning specific roles to individuals	<ul style="list-style-type: none">Sign up function	<ul style="list-style-type: none">Procrastination when facing challenges or issuesUnnecessary features that do not directly align with the immediate goals of the RBAC implementation.	<ul style="list-style-type: none">Maintaining a culture of open communication and feedback within the team
Suggest courses/jobs and filtering	<ul style="list-style-type: none">Filter options are variousSuggest courses/jobs fit with the job title	<ul style="list-style-type: none">Sorting functionAI-Powered Recommendations	<ul style="list-style-type: none">Procrastination in updating task status	<ul style="list-style-type: none">Ensure a deeper understanding of user requirements for effective filter design
User Profile Editing	<ul style="list-style-type: none">The team exhibits a positive attitude and is diligently focused on completing their tasks	<ul style="list-style-type: none">Course progress tracking	<ul style="list-style-type: none">The lack of recognition for team achievements	<ul style="list-style-type: none">Maintain a collaborative approach to testing by involving relevant

	<ul style="list-style-type: none"> • Well-communication 		team members in defining and executing manual test cases
--	--	--	--

⚡ Action plan

Action	Owner	Due date	Action items
Re-organise tasks for team members	@Lo Tuan Hung	Sep 29, 2023	Jira Timeline
Adjust project objectives and milestones	@Luong Chi Duc @Vu Duy Minh Nguyen	Oct 13, 2023	📅 Project Plan
Adjust UI/UX design to match with the project plan	@Nga Thi @Chi Hau	Oct 13, 2023	🖼 COS20031
Mid-term project tracking progress	@Lo Tuan Hung @Nga Thi @Luong Chi Duc @Chi Hau @Vu Duy Minh Nguyen	Oct 27, 2023	📅 2023-10-27 Weekly meeting
Finalise website features/functions	@Luong Chi Duc @Lo Tuan Hung @Nga Thi @Chi Hau	Nov 22, 2023	PHP, JS
Final check over code/slides	@Lo Tuan Hung	Nov 25, 2023	Confluence and Github
Presentation	@Lo Tuan Hung @Nga Thi @Luong Chi Duc @Chi Hau @Vu Duy Minh Nguyen	Nov 26, 2023	Powerpoint Slides

Major-Specific Technology (Week 10+11) - Software Development

A - Features demonstrations

Demonstration Video

1. Role-Based Access Control (RBAC)

- Upon user login, the system verifies their role and directs them to the appropriate profile page view, distinguishing between job seekers and recruiters.

Job Seeker	Recruiter
<p>Welcome back!</p> <p>James Harrison</p> <p>Job Title: Bartender</p> <p>Experience level: Entry</p> <p>Personal information</p> <p>Education background</p>	<p>Welcome back!</p> <p>Abbott Inc</p> <p>Company size: 250-499</p> <p>Phone number: +43 722 9993</p> <p>Email: hr@abbott.com</p> <p>Introduction:</p> <p>Duis lobortis nec mi volutpat nonummy. Hacemus blandit laetus at vest. Vivamus vel nunc egid ante elementum pellentesque.</p> <p>Job posting</p>

2. Job/Course Suggestions

- When a job seeker navigates to the Course/Job Opportunity page, the initial section displays a curated list of suggested courses/jobs based on their job title.

Course	Job Opportunities
<p>Courses</p> <p>Suggested for you</p> <p>Cash Managing</p> <p>413 x 269</p> <p>and larus morbi enim mauris</p> <p>413 x 269</p> <p>est phasellus sit amet</p> <p>413 x 269</p> <p>in porro eu magna voluptatibus</p>	<p>Job opportunities</p> <p>Suggested for you</p> <p>Bartender</p> <p>413 x 269</p> <p>Cash</p> <p>413 x 269</p> <p>Barista</p> <p>413 x 269</p> <p>Coffee</p> <p>413 x 269</p> <p>Bartender</p> <p>413 x 269</p> <p>Alcohol</p> <p>413 x 269</p> <p>Bartender</p> <p>413 x 269</p> <p>Hybrid</p>

3. Job/Course Filtering

- Courses:
 - F&B

- Beauty & Spa
- Tourism & Hospitality
- Jobs:
 - Experience Level required
 - Working Formats available
 - Specialization

	Courses	Jobs
Before sorting		
After sorting		

4. Interview Schedule Process

- Recruiters can update the interview schedule for posted jobs. Upon successful update, the schedule information is presented for jobs that job seekers have applied to. Job seekers can provide their available time, and booked jobs are displayed in the interview schedule section, facilitating the tracking of interview appointments.

	Job Seeker	Recruiters
Book		
View		
Before		
After		

5. CRUD Operations (Create - Update - Delete)

- Job seekers have the ability to update their profiles, delete information, and create new records as needed. This ensures flexibility and control over their account information.

Create	Job Seeker	
Before	Skills <hr/> <div style="display: flex; justify-content: space-around;"> Cash Management Control crowd Manager Communication </div>	 Edit
Create	Skills <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="display: flex; gap: 10px;"> Cash Management Control crowd Manager </div> <div style="display: flex; gap: 10px;"> Communication + Add more CS - Remove </div> </div>	
After	Skills <hr/> <div style="display: flex; justify-content: space-around;"> Cash Management Control crowd Manager Communication </div>	 Edit

Update	Job Seeker	
Before	Personal information <hr/> <p> Gender: Female DOB: 2005-05-24 Phone number: 123456789 Email: James@gmail.com Address: 15th, La Follette </p>	 Edit
Update	Personal information <p>Gender:</p> <p> <input type="radio"/> Female <input checked="" type="radio"/> Male <input type="radio"/> Others <input type="radio"/> Prefer not to say </p> <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="flex: 1;"> 2005-05-24 </div> <div style="flex: 1;"> 1342574679 </div> <div style="flex: 1;"> 15th, La Follette </div> </div>	

Delete	Job Seeker
Before	<p>Education background  Edit</p> <hr/> <p>2019 Yantai University <i>Bachelor of Fine Arts</i></p> <p>2022 Swinburne <i>Bachelor of ICT</i></p>
Delete	<p>Education background</p> <div style="border: 1px solid #ccc; padding: 10px;">  Bachelor of Fine Arts </div> <div style="border: 1px solid #ccc; padding: 10px;">  Yantai University </div> <div style="border: 1px solid #ccc; padding: 10px;">  2019 </div> <div style="border: 1px solid #ccc; padding: 10px;">  2.79 </div> <div style="border: 1px solid #ccc; padding: 10px;">  Degree </div> <div style="border: 1px solid #ccc; padding: 10px;">  Institute </div> <div style="border: 1px solid #ccc; padding: 10px;">  Period (xxxx - xxxx) </div> <div style="border: 1px solid #ccc; padding: 10px;">  GPA (x.xx) </div>

After

B - Code-based explanation

1. Front-end Design

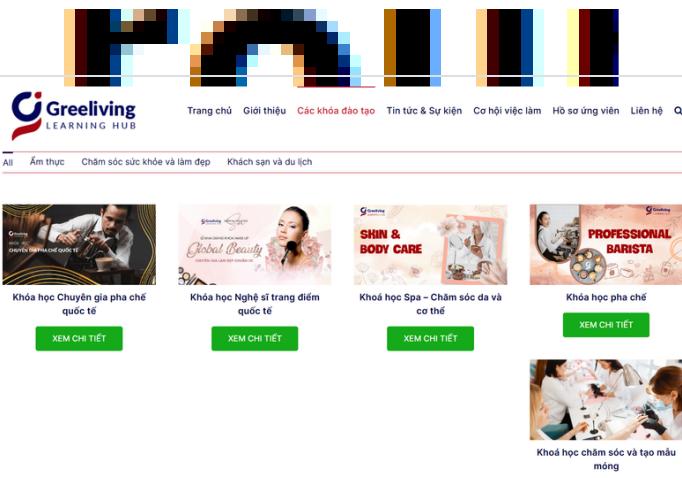


The Figma is a design tool for software development starting to implement code, Figma is utilized to en functions, hence optimizing the workflow of the d

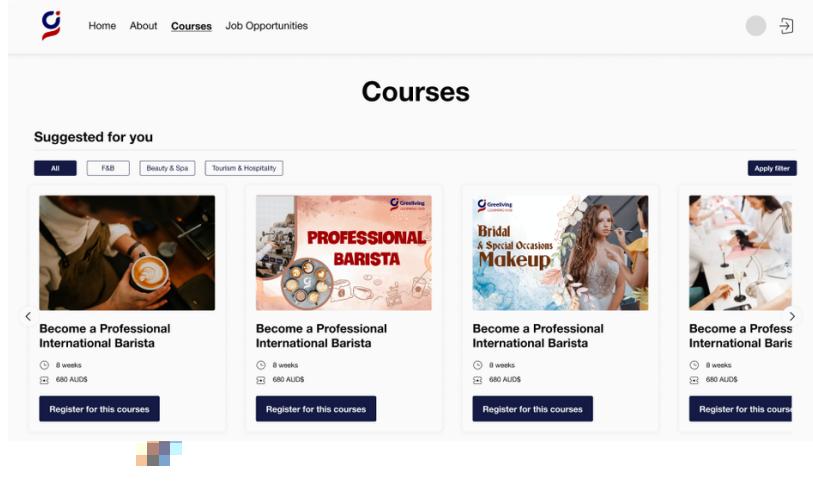
stems and libraries. Before ware of which are suitable

a. Demo Version

Original Website



Our Website



Figma allows our group to translate research findings into practical designs. This process involves meticulous redesigning to enhance the user interface, we acknowledge **fostering user centred design**.

User-friendly front end. This can be achieved by using Figma to design a wireframe before any codes.

b. Identification of Suitable Functions

Prior to coding, Figma serves as a strategic tool for identifying suitable functions. By aligning user needs, we would determine which fu

ware project. Specifically, after identifying suitable functions, we can attract users.

Simultaneously, we prioritize the **importance of**

the implementation process.

c. Optimized Workflow of Database

Through the design process in Figma, the team g

ith the underlying data

structures. It helps us understand how the website operates and collects data. From there, we **optimize** the **Entity-Relationship Diagram** (ERD) and **database**, ensuring that the database design aligns with the intended user experience and functional requirements.

2. Back-end Design

GitHub repository:

Description:

Our website provides a seamless and secure experience for both job seekers and recruiters, incorporating essential features for effective recruitment processes by implementing PHP. The role-based access control ensures that each user has the appropriate level of access, and the filtering, sorting, and interview scheduling functionalities contribute to a streamlined and efficient job application process.

a. Role-based Access Control

To **provide specific functions** for each user type, users will be distinguished **based on** their **roles** as either normal users (job seekers) or businesses (recruiters).

*Login

Within the **login page**, users will be **authenticated** based on their email and password, fetched **their role** from the database, and redirected to the **corresponding page** after successful login:

Error Reporting and Session Start:

```
1 error_reporting(E_ALL);
2 ini_set('display_errors', 1);
3 session_start();
```

Enables error reporting for debugging purposes and starts a PHP session for handling user-specific data across multiple pages.

Query to Check User Credentials:

```
1 $user_query = "SELECT * FROM s104181721_db.UserAuthentication WHERE UserEmail = '$email' AND UserPassword = '$pas
2 $result = $conn->query($user_query);
```

- Queries the database to check if the provided email and password match a user in the "UserAuthentication" table.

Handling Authentication Result:

```
1 if ($result->num_rows == 0) {
2     header("Location: ./login.php");
```

- If the query returns no rows (i.e., no matching user), the code redirects to a login page with an error message indicating access denial.

Redirect Based on UserRole:

```
1 switch ($userRole) {
2     case 'Job Seeker':
3         $redirectPage = "jobseeker.php";
4         // Set session variables
5         $_SESSION['job_seeker_ID'] = $user['UserAuthenticationID'];
6         $_SESSION['js_email'] = $email;
7         break;
```

```

8     case 'Recruiter':
9         $redirectPage = "recruiter.php";
10        // Set session variables
11        $_SESSION['recruiter_ID'] = $user['UserAuthenticationID'];
12        $_SESSION['re_email'] = $email;
13        break;
14    }

```

- Depending on the user's role, the script sets the `$redirectPage` variable to the appropriate destination page. In this case, it could be "jobseeker.php" for job seekers or "recruiter.php" for recruiters.

Redirect to Appropriate Page:

```
1 header("Location: ./{$redirectPage}");
```

- The script uses the `header("Location: ./{$redirectPage}")` function to redirect the user to the appropriate page based on their role.

***Job Seeker POV and Authority**

Fetch Job Seeker Details:

```

1 $job_seeker = $conn->query("SELECT * FROM s104181721_db.JobSeeker
2                               WHERE UserAuthenticationID = '$UserAuthenticationID');");

```

Fetches details of the job seeker from the "JobSeeker" table based on their UserAuthenticationID.

Fetch Course Registrations:

```

1 $CourseRegistration = $conn->query("SELECT * FROM s104181721_db.CourseRegistration
2                               WHERE JobSeekerID = '$JobSeekerID');");

```

- Fetches course registrations of the job seeker from the "CourseRegistration" table.

Fetch Job Applied:

```

1 $application = $conn->query("SELECT * FROM s104181721_db.Application
2                               WHERE JobSeekerID = '$JobSeekerID');");

```

- Fetches job applications of the job seeker from the "Application" table.

Fetch Interview Schedule:

```

1 $js_interview = $conn->query("SELECT
2     JobSeekerInterview.*,
3     Job.*
4   FROM
5     s104181721_db.JobSeekerInterview
6   JOIN s104181721_db.Job ON JobSeekerInterview.JobID = Job.JobID
7   WHERE
8     JobSeekerInterview.JobSeekerID = '$JobSeekerID');");

```

- Fetch details of job seeker interviews and the corresponding job details.
- The condition ensures that only interviews related to the current job seeker (`JobSeekerID = '$JobSeekerID'`) are selected.

***Recruiter POV and Authority**

Fetch Recruiter Details:

```
1 $job = $conn->query("SELECT * FROM s104181721_db.Job WHERE RecruiterID = '$RecruiterID');");
```

- Get information about jobs posted by the recruiter with the specified `RecruiterID`.

Retrieve Candidate Applied:

```

1 $application = $conn->query("SELECT
2     Application.*,
3     Job.*,
4     JobSeeker.*
5 FROM
6     s104181721_db.Application
7     JOIN s104181721_db.Job ON Application.JobID = Job.JobID
8     JOIN s104181721_db.JobSeeker ON Application.JobSeekerID = JobSeeker.JobSeekerID
9 WHERE
10    Job.RecruiterID = '$RecruiterID');");

```

- Retrieves information about job applications, including details from the `Application`, `Job`, and `JobSeeker` tables. It specifically looks for applications related to jobs posted by the recruiter with the given `RecruiterID`.

Retrieve Interviews Conducted by the Recruiter:

```

1 $interview = $conn->query("SELECT
2     Job.*,
3     RecruiterInterview.*
4 FROM
5     s104181721_db.Job
6     JOIN s104181721_db.RecruiterInterview ON RecruiterInterview.JobID = Job.JobID
7 WHERE
8     Job.RecruiterID = '$RecruiterID');");

```

- Fetches information about interviews conducted by the recruiter. It involves the `Job` and `RecruiterInterview` tables and looks for interviews related to jobs posted by the recruiter with the specified `RecruiterID`.

Fetch Interview Schedule:

```

1 $js_interview = $conn->query("SELECT
2     JobSeekerInterview.*,
3     Job.*
4 FROM
5     s104181721_db.JobSeekerInterview
6     JOIN s104181721_db.Job ON JobSeekerInterview.JobID = Job.JobID
7 WHERE
8     JobSeekerInterview.JobSeekerID = '$JobSeekerID');");

```

- Fetch details of job seeker interviews and the corresponding job details.
- The condition ensures that only interviews related to the current job seeker (`JobSeekerID = '$JobSeekerID'`) are selected.

View Candidate Profile:

```

1 //Candidate profile - Recruiter POV
2 $UserAuthenticationID = $_SESSION['recruiter_ID'];
3 $recruiter = $conn->query("SELECT * FROM s104181721_db.Recruiter WHERE UserAuthenticationID = '$UserAuthenticationID'");

```

- Retrieves information about a job seeker based on the `JobSeekerID` obtained from the `$_GET` superglobal. It queries the database for the job seeker's data in the `JobSeeker` table.

```

1 //Candidate profile - Job Seeker POV
2 $UserAuthenticationID = $_SESSION['job_seeker_ID'];
3 $user_email = $_SESSION['js_email'];

```

- Retrieves job seeker's `UserAuthenticationID` and email from the session.

b. Filtering and Sorting

The function is implemented on two pages, "course" and "job opportunities" on the 'Job seeker' role side. **Unselected filters will disappear**, allowing users to quickly see courses/jobs that are suitable for themselves.

*Course Page

Determine Course Suggestions Based on Job Title:

```
1 if (stripos($JSJobTitle, 'Bar') !== false) {  
2     $sug_course = $conn->query("SELECT * FROM s104181721_db.Course WHERE CourseCategory = 'F&B';");  
3 } elseif (stripos($JSJobTitle, 'ist') !== false) {  
4     $sug_course = $conn->query("SELECT * FROM s104181721_db.Course WHERE CourseCategory = 'Beauty & Spa';");  
5 } elseif (stripos($JSJobTitle, 'Tour') !== false) {  
6     $sug_course = $conn->query("SELECT * FROM s104181721_db.Course WHERE CourseCategory = 'Tourism & Hospitality'");  
7 } else {  
8     $sug_course = $conn->query("SELECT * FROM s104181721_db.Course");  
9 }
```

- Suggests courses based on the job seeker's job title. Depending on specific keywords in the job title (e.g., 'Bar', 'ist', 'Tour'), it fetches courses from different categories.

Handle Course Filtering:

```
1 if ($_SERVER["REQUEST_METHOD"] == "POST") {  
2     // Check and apply filter conditions based on user input  
3     $course_category = ($_POST["course_category"]);  
4  
5     // Create a WHERE clause based on the selected course category  
6     if ($course_category === 'All') {  
7         $whereClause = "1";  
8     } else {  
9         $whereClause = "CourseCategory = '$course_category'";  
10    }  
11  
12    // Query to fetch courses based on filter conditions  
13    $filter_course = $conn->query("SELECT * FROM s104181721_db.Course WHERE $whereClause");  
14  
15 } else {  
16     // Default query to fetch all courses  
17     $filter_course = $conn->query("SELECT * FROM s104181721_db.Course");  
18 }
```

- Checks if the filter form is submitted using the POST method. If so, it applies filter conditions based on the selected course category.
- It then fetches courses from the "Course" table accordingly.
- If the form is not submitted, it defaults to fetching all courses.

*Job Opportunities Page

Determine Job Specialization and Suggest Relevant Jobs:

```
1 $js_job = $job_seeker->fetch_assoc();  
2 $JSJobTitle = $js_job['JSJobTitle'];  
3  
4 // Determine job specialization based on the job title  
5 // Suggest jobs accordingly  
6 if (stripos($JSJobTitle, 'bar') !== false) {  
7     $sug_job = $conn->query("SELECT * FROM s104181721_db.Job WHERE JobSpecialization = 'F&B';");  
8 } elseif (stripos($JSJobTitle, 'ist') !== false) {  
9     $sug_job = $conn->query("SELECT * FROM s104181721_db.Job WHERE JobSpecialization = 'Beauty & Spa';");
```

```

10 } elseif (stripos($JSJobTitle, 'Tour') != false) {
11     $sug_job = $conn->query("SELECT * FROM s104181721_db.Job WHERE JobSpecialization = 'Tourism & Hospitality';");
12 } else {
13     $sug_job = $conn->query("SELECT * FROM s104181721_db.Job;");
14 }

```

- Determines the job seeker's job specialization based on their job title (`JSJobTitle`).
- It then suggests relevant jobs by querying the database for jobs with specific specializations.

Filtering Jobs Based on User Input:

```

1 // Initialize the WHERE clause for filtering
2 $whereClause = "1"; // Default condition to select all jobs
3
4 // Check if filter form is submitted
5 if ($_SERVER["REQUEST_METHOD"] == "POST") {
6     // ... (Code for handling form submission and building the WHERE clause)
7
8     // Query to fetch jobs based on filter conditions
9     $filter_job = $conn->query("SELECT * FROM s104181721_db.Job WHERE $whereClause");
10 } else {
11     $filter_job = $conn->query("SELECT * FROM s104181721_db.Job");
12 }

```

- Check if the filter form has been submitted (`POST` request) and construct a `WHERE` clause based on the submitted filter criteria.
- The jobs are then queried from the database with the constructed `WHERE` clause.

```

1     // EXPERIENCE LEVEL
2     $experienceLevels = $_POST['jopfilter_el'];
3     if (!empty($experienceLevels)) {
4         $whereClause .= " AND ExperienceLevel = '$experienceLevels'";
5     }
6     // WORKING FORMAT
7     $workingFormats = $_POST['jopfilter_wf'];
8     if (!empty($workingFormats)) {
9         $whereClause .= " AND WorkingFormat = '$workingFormats'";
10    }
11    // SPECIALIZATION
12    $specializations = $_POST['jopfilter_s'];
13    if (!empty($specializations)) {
14        $whereClause .= " AND JobSpecialization = '$specializations'";
15    }
16
17    if ($whereClause == 1) {
18        // Query to fetch jobs based on filter conditions
19        $filter_job = $conn->query("SELECT * FROM s104181721_db.Job");
20    } else {
21        $filter_job = $conn->query("SELECT * FROM s104181721_db.Job WHERE $whereClause");
22    }

```

- Check if the user has submitted a value for the condition filters jobs through a form. If a value is provided, it appends a condition to the existing `WHERE` clause.

c. User Profile Editing

The function is developed to help users **update** their **profiles**, enabling recruiters or job seekers to **see the latest information** about each other alongside the default information previously provided.

Retrieve Job Seeker Information and Existing Details:

```
1 //Job Seeker
2 $UserAuthenticationID = $_SESSION['job_seeker_ID'];
3 $job_seeker = $conn->query("SELECT * FROM s104181721_db.JobSeeker
4 WHERE UserAuthenticationID = '$UserAuthenticationID';");
5 $existingJobSeeker = $job_seeker->fetch_assoc();
6 $JobSeekerID = $existingJobSeeker['JobSeekerID'];
```

- Retrieves the job seeker's information from the database based on the `UserAuthenticationID` stored in the session.
- The fetched data is stored in `$existingJobSeeker`, and the `JobSeekerID` is extracted for later use.

```
1 //Recruiter
2 $UserAuthenticationID = $_SESSION['recruiter_ID'];
3 $recruiter = $conn->query("SELECT * FROM s104181721_db.Recruiter WHERE UserAuthenticationID = '$UserAuthenticationID';");
4 $existingRecruiter = $recruiter->fetch_assoc();
```

- Retrieves the Recruiter's UserAuthenticationID from the session.
- Fetches the existing details of the recruiter based on the UserAuthenticationID.

Handle Form Submission (POST Request):

```
1 //Job Seeker
2 if ($_SERVER["REQUEST_METHOD"] == "POST") {
3     // ... (Code to retrieve form data)
4
5     // Construct SQL statement to update job seeker information
6     $sqlJS = "UPDATE s104181721_db.JobSeeker SET ... WHERE UserAuthenticationID = '$UserAuthenticationID';";
7
8     // Execute the query to update job seeker information
9     $conn->query($sqlJS);
10
11    // Loop through the form data arrays (education, skills, working experience, extracurricular activities)
12    // and update, insert, or delete records in the respective database tables:
13    if (($wPhoneNum == '') && ...) {
14        $conn->query("DELETE FROM ...");
15    } else {
16        $conn->query("UPDATE ...
17             SET WPhoneNum = '$wPhoneNum',
18                 ...
19             WHERE ...");
20    }
21
22    // Redirect to another page after form submission
23    header("Location: jobseeker.php");
24    exit();
25 }
```

- Check if the form has been submitted using the POST method.
- If submitted, retrieves form data, constructs an SQL statement (`$sqlJS`) to update the job seeker's information, and executes the query.
- Then, it iterates through the form data arrays for education, skills, working experience, and extracurricular activities, updating, inserting, or deleting records in the respective database tables.
- Finally, it redirects the user to another page (`jobseeker.php`) after form submission.

```
1 //Recruiter
2 if ($_SERVER["REQUEST_METHOD"] == "POST") {
3     // ... (Code to retrieve form data)
4 }
```

```

5 // Construct SQL statement to update job seeker information
6 $sql = "UPDATE s104181721_db.Recruiter SET ... WHERE UserAuthenticationID = '$UserAuthenticationID';";
7
8 if ($conn->query($sql) === TRUE) {
9     // Redirect to another page after form submission
10    header("Location: recruiter.php");
11    exit();
12 }
13 }
```

- Check if the form is submitted using the POST method. If true, it retrieves data from the submitted form fields.
- Constructs an SQL query to update the recruiter's information in the "Recruiter" table based on their UserAuthenticationID.
- If the SQL query is executed successfully, it redirects the user to the "recruiter.php" page.

d. Interview Schedule Process

After Recruiters post a new job, they can **update** the **interview schedule** for the job. Upon successful update, the **schedule information** will be **displayed** for **jobs** that job seekers have **applied** to. Then Job Seekers **provide** information about their **available time**, and **booked jobs** will be **shown** in the **interview schedule section**, allowing them to track their interview appointments.

*Demo Interview Booking Overview

Job Seeker POV	Recruiter POV
<p>Your interview schedule</p>  <p>10:30 AM (13/11/2023)</p> <p>Notes: • Each interview session last from 20 to 45 minutes • Please be present at least 10 minutes early</p> <p>Join Interview Meeting Room</p> <p>https://us04web.zoom.us/j/9941811672?pwd=d8d890fb7K78873Abd959M0GdxI</p> <p>UI-UX Designer/Researcher - Melbourne</p> <p>(i) Melbourne, Victoria, Australia (o) 2,000 - 5,200 AUD\$ (j) Junior Freshie (k) Remote</p>	<p>Interview schedule</p>  <p>13/11/2023 - 19/11/2023 09:00 AM - 05:30 PM</p> <p>Join Interview Meeting Room</p> <p>https://us04web.zoom.us/j/9941811672?pwd=d8d890fb7K78873Abd959M0GdxI</p> <p>UI-UX Designer/Researcher - Melbourne</p> <p>(i) Melbourne, Victoria, Australia (o) 2,000 - 5,200 AUD\$ (j) Junior Freshie (k) Remote (l) View candidate applied</p>
<p>Interview schedule</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>413 x 269</p> <p>Bar Cash Manager</p> <p>(b) 2023-12-01 (o) 08:35</p> <p>View interview time</p> </div> <div style="text-align: center;">  <p>413 x 269</p> <p>Bartender</p> <p>(b) 2023-12-09 (o) 10:03</p> <p>View interview time</p> </div> </div>	<p>Interview schedule</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>413 x 269</p> <p>Bar Tracker</p> <p>(b) 2023-11-24 to 2023-11-26 (o) 09:09 to 10:09</p> <p>View interview details</p> </div> <div style="text-align: center;">  <p>413 x 269</p> <p>Bar Cash Manager</p> <p>(b) 2023-11-19 to 2023-12-05 (o) 08:07 to 16:02</p> <p>View interview details</p> </div> </div>

*Interview Booking Process for Recruiter:

Retrieve JobID and Check for Existing Recruiter Interviews:

```

1 $JobID = $_GET['JobID'];
2 $check = $conn->query("SELECT * FROM s104181721_db.RecruiterInterview
3 WHERE JobID = '$JobID';");
```

- Retrieves the `JobID` from the GET parameters.
- Checks if there are existing recruiter interviews for the specified job in the `RecruiterInterview` table.

Redirect or Proceed to Interview Setup:

```
1 if ($check->num_rows > 0) {  
2     // Redirect to another page if there are existing recruiter interviews for the specified job  
3     header("Location: reinterviewset.php?JobID=$JobID");  
4 } else {  
5     // ... (Proceed to recruiter and job retrieval and form handling)  
6 }
```

- If there are existing recruiter interviews for the specified job, redirects to another page (`reinterviewset.php`).
- If not, proceeds to retrieve recruiter and job information and handle form submissions.

Retrieve Recruiter and Job Information:

```
1 $UserAuthenticationID = $_SESSION['recruiter_ID'];  
2 $recruiter = $conn->query("SELECT * FROM s104181721_db.Recruiter WHERE UserAuthenticationID = '$UserAuthenticationID'");  
3 $recruiter_data = mysqli_fetch_assoc($recruiter);  
4 $RecruiterID = $recruiter_data['RecruiterID'];  
5  
6 $job = $conn->query("SELECT * FROM s104181721_db.Job WHERE JobID = '$JobID';");  
7 $job_data = mysqli_fetch_assoc($job);
```

- Retrieves information about the recruiter based on the `recruiter_ID` stored in the session.
- Retrieves information about the specified job (`JobID`).

Handle Form Submission (POST Request):

```
1 if ($_SERVER["REQUEST_METHOD"] == "POST") {  
2     // Get form data  
3     $ID = $_POST['ID'];  
4     $DateStart = $_POST['date_start'];  
5     $DateEnd = $_POST['date_end'];  
6     $TimeStart = $_POST['time_start'];  
7     $TimeEnd = $_POST['time_end'];  
8     $LinkMeeting = $_POST['link'];  
9  
10    // Execute the query to insert recruiter interview information into the database  
11    $conn->query("INSERT INTO s104181721_db.RecruiterInterview (JobID, DateStart, DateEnd, TimeStart, TimeEnd, LinkMeeting)  
12        VALUES ('$ID', '$DateStart', '$DateEnd', '$TimeStart', '$TimeEnd', '$LinkMeeting');");  
13  
14    // Redirect to the appropriate page after the form submission  
15    header("Location: ./recruiter.php");  
16 }
```

- Checks if the form has been submitted using the POST method.
- If submitted, retrieves form data (recruiter interview details) and inserts the information into the `RecruiterInterview` table.
- Redirects the recruiter to another page (`recruiter.php`) after the form submission.

***Interview Booking Process for Job Seeker:**

Retrieve Job Seeker Information:

```
1 $UserAuthenticationID = $_SESSION['job_seeker_ID'];  
2 $job_seeker = $conn->query("SELECT * FROM s104181721_db.JobSeeker WHERE UserAuthenticationID = '$UserAuthenticationID'");  
3 $job_seeker_data = mysqli_fetch_assoc($job_seeker);  
4 $JobSeekerID = $job_seeker_data['JobSeekerID'];
```

- Retrieves job seeker information based on the `UserAuthenticationID` stored in the session.
- Extracts the `JobSeekerID` from the fetched data.

Check for Existing Job Seeker Interview:

```
1 $JobID = $_GET['JobID'];
2 $check = $conn->query("SELECT * FROM s104181721_db.JobSeekerInterview
3                         WHERE JobSeekerID = $JobSeekerID AND JobID = '$JobID';");
```

- Retrieves the `JobID` from the GET parameters.
- Checks if the job seeker already has an interview for the specified job (`JobID`) in the `JobSeekerInterview` table.

Redirect or Proceed to Interview Setup:

```
1 if ($check->num_rows > 0) {
2     // Redirect to another page if the job seeker already has an interview for the specified job
3     header("Location: jsinterviewset.php?JobID=$JobID");
4 } else {
5     // ... (Proceed to job and recruiter interview retrieval and form handling)
6 }
```

- If the job seeker already has an interview for the specified job, redirects to another page (`jsinterviewset.php`).
- If not, proceeds to retrieve job and recruiter interview information and handle form submissions.

Retrieve Job and Recruiter Interview Information:

```
1 $job = $conn->query("SELECT * FROM s104181721_db.Job WHERE JobID = '$JobID';");
2 $re_interview = $conn->query("SELECT * FROM s104181721_db.RecruiterInterview WHERE JobID = '$JobID';");
```

- Retrieves information about the specified job (`JobID`) and recruiter interviews for that job.

Handle Form Submission (POST Request):

```
1 if ($_SERVER["REQUEST_METHOD"] == "POST") {
2     // Get form data
3     $ID = $_POST['ID'];
4     $InterviewDate = $_POST['date'];
5     $InterviewTime = $_POST['time'];
6
7     // Insert the job seeker interview information into the database
8     $conn->query("INSERT INTO s104181721_db.JobSeekerInterview (JobSeekerID, JobID, InterviewDate, InterviewTime)
9                 VALUES ('$JobSeekerID', '$ID', '$InterviewDate', '$InterviewTime');");
10
11    // Redirect to another page after the form submission
12    header("Location: jobseeker.php");
13 }
```

- Checks if the form has been submitted using the POST method.
- If submitted, retrieves form data (interview details) and inserts the job seeker interview information into the `JobSeekerInterview` table.
- Redirects the user to another page (`jobseeker.php`) after the form submission.