AI Closing Form Generator

Computer Science

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CS

Courses

we all took this course Full-Stack using Python
so we can work more professionally with our website
we took only 4 courses from it which is :

HTML & PYTHON

What is HTML?:

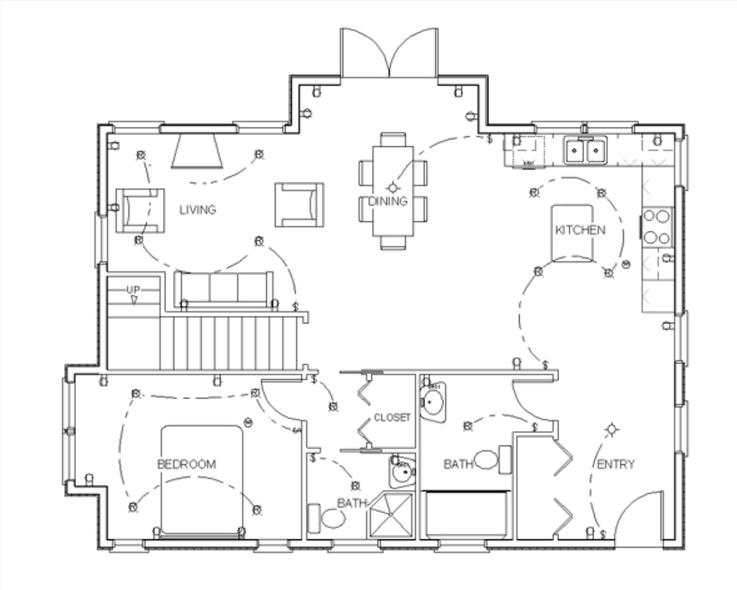
Think of HTML as the skeleton of a web page. It provides the basic structure and tells the browser how to display content.

HTML, which stands for **HyperText Markup Language**, is like the foundation of a website. It's the language we use to build the structure and content of web pages.

Creating Structure with HTML

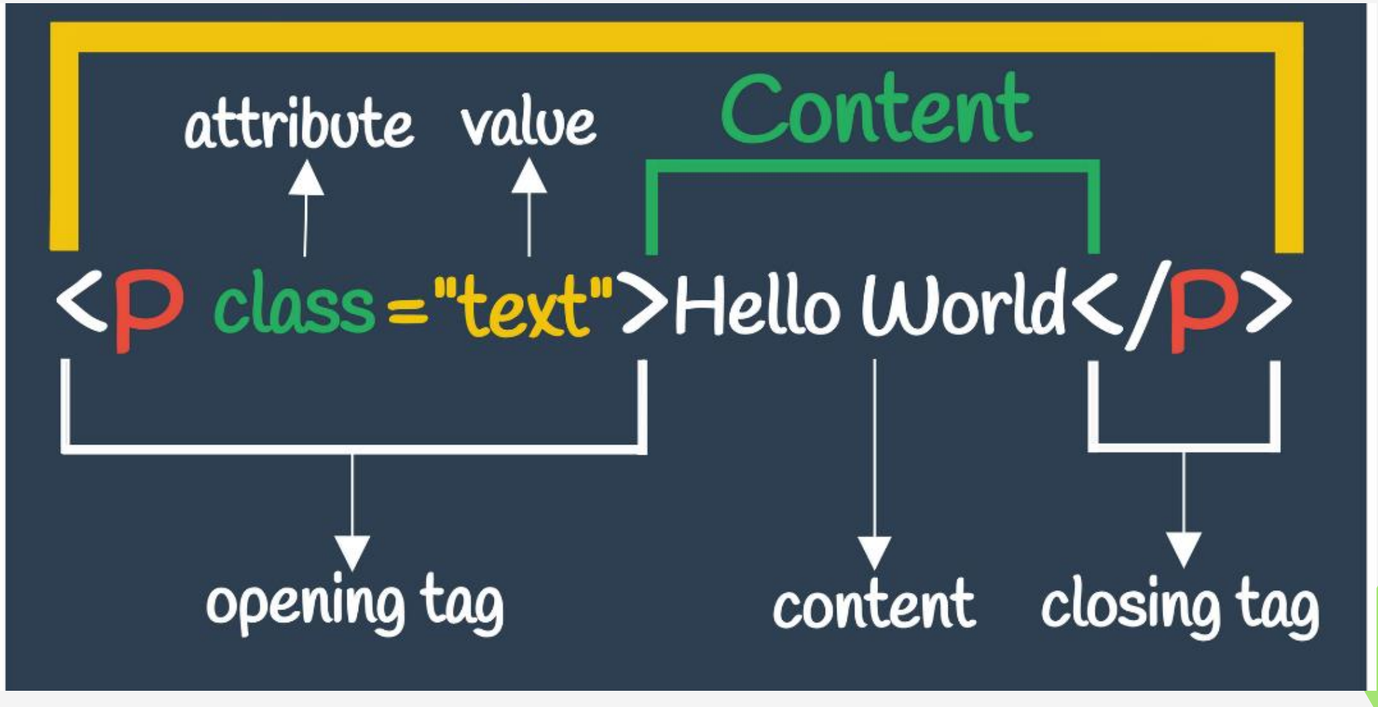
Imagine building a house. You start with a blueprint that shows where the rooms, doors, and windows go.

HTML is like that blueprint for web pages, telling the browser where to place different parts of the page.



Elements and Tags

set of building blocks. Each block is called an "element," and we use "tags" to label them. **Tags are like instructions that help the browser understand what each block is for.**



Elements and Tags

set of building blocks. Each block is called an "element," and we use "tags" to label them. **Tags are like instructions that help the browser understand what each block is for.**

```
<!doctype html>
<html lang="en">
    <head>
        <meta charset="utf-8">
        <title>Hello, world!</title>
    </head>
    <body>
        <h1>Hello, world!</h1>
        <p>My first web page.</p>
    </body>
</html>
```

what is python?

Python is a high-level programming language known for its simplicity.

Why Use python ?

- python is the most important course because our website depend mostly on it .
- there are useful libraries in python provide us what we need in our website with less effort .
- Python has become standard language in AI which we used in our website.

- we have learned python basics in our first year in university
- we used python as web development tool
- the course focused on the basic of python , we mostly used in new way and added flask frame work to implement the routes to the functions.
- we learned flask in YouTube videos .

CSS & BOOTSTRAP

What is CSS?

Cascading Style Sheets (CSS) is a stylesheet language used to describe the layout of web documents.

- CSS allows you to control the appearance of HTML elements on a webpage.
- It separates the structure (HTML) from the style (CSS).

```html
<p class="about-text">
    Welcome to our website! We are
</p>
```

```css
<style>
.about-text {
    font-family: 'Cambria', sans-serif;
    font-size: 18px;
    line-height: 2;
    color: #333;
    text-align: justify;
}
</style>
```

Why Use CSS?

- CSS make the page **consistent** and **visually appealing** .
- It improves maintainability , making it easier to update and modify the design.
- CSS it allow designers and developers to work independen

How CSS Works?

- CSS uses selectors to target HTML elements and apply styles to them.
- Styles can include properties like color, font, size, margin, padding, and more.
- Styles can be defined inline, in the `<style>` element within HTML, or in an external CSS file.

```html
<p class="about-text">
    Welcome to our website! We are
</p>
```

```css
<style>
.about-text {
    font-family: 'Cambria', sans-serif;
    font-size: 18px;
    line-height: 2;
    color: #333;
    text-align: justify;
}
</style>
```

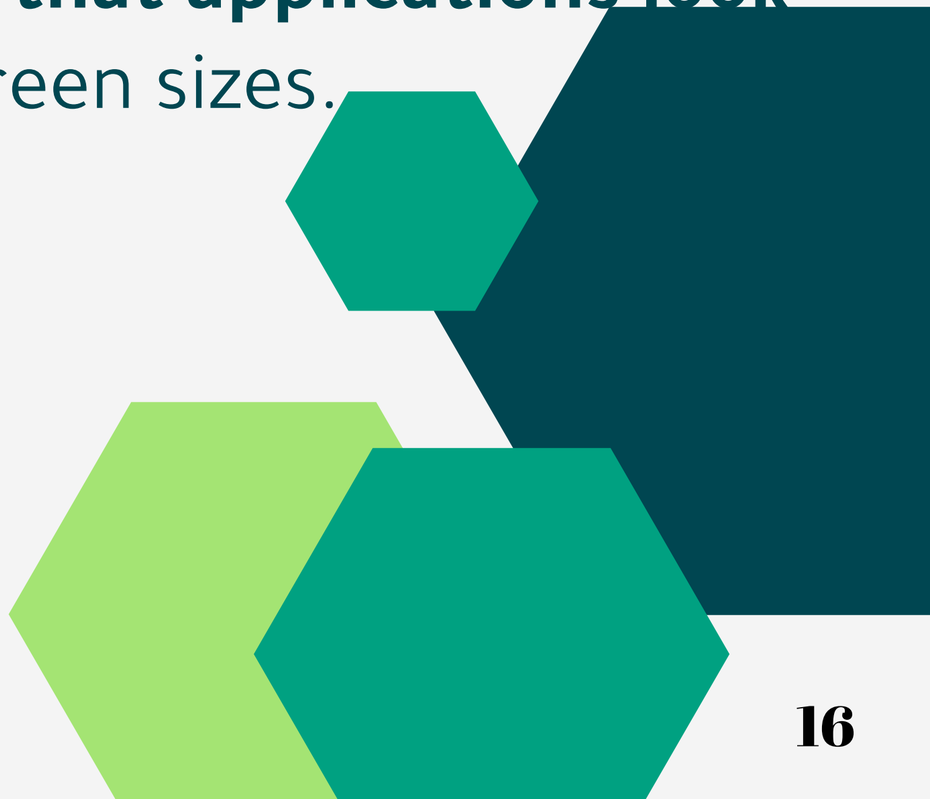
```html
<link rel="stylesheet" href="https://cdn.jsdelivr.net/npm/bootstrap-icons@1.8.1/font/bootstrap-icons.css">
<link rel="stylesheet" type="text/css" href="{{url_for('static', filename='style.css')}}">
```

What is Bootstrap?

- Bootstrap is a popular open-source **front-end** framework for building responsive and mobile-first web applications.
- It provides a set of pre-designed **HTML**, **CSS**, and **JavaScript** components that can be easily customized and integrated into projects.

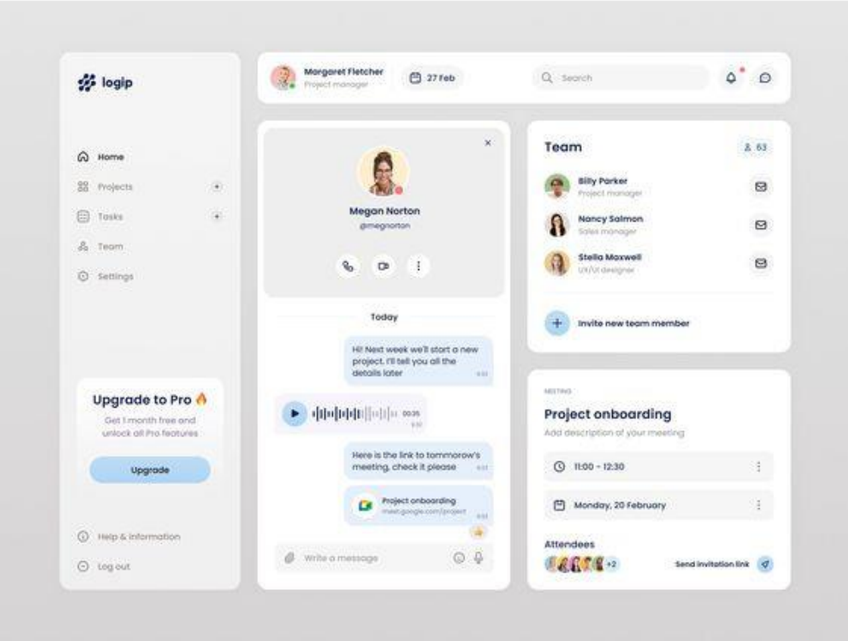
Why Use Bootstrap?

- Bootstrap offers a **consistent** and **visually appealing design** for web applications.
- It **speeds up development** by providing ready-to-use components like navigation bars, buttons, forms, and more.
- Bootstrap's responsive grid system **ensures that applications look great** on various devices and screen sizes.



Key Features

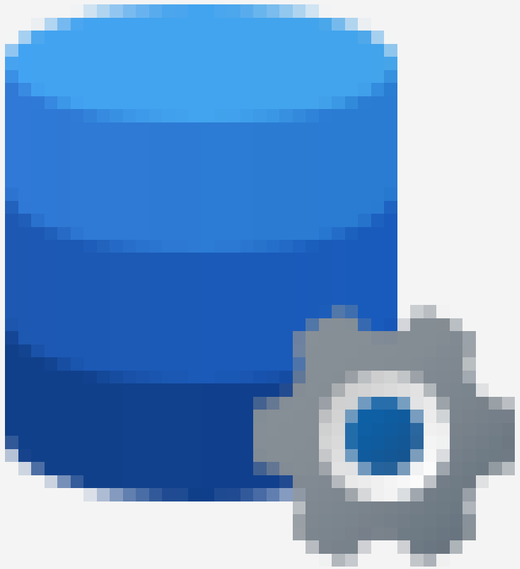
- Responsive Grid System: Easily create flexible and responsive layouts.
- CSS Components: Pre-designed styles for typography, buttons, forms, and more.
- JavaScript Plugins: Enhance functionality with interactive elements like modals, carousels, and tooltips.



HTML & JS & CSS

create a team like a chef, an artist, and a DJ creating an amazing party.

SQL



What is the database?

- A database is an organized collection of structured information, or data, typically stored electronically in a computer system.

How to create a new database?

CREATE DATABASE databasename;

- **View available databases**
- **Delete a database.**
- **Create new tables in databases**
- **Modify table (add columns, delete columns, modify table name) or delete it**
- **The method of adding data in the table, displaying, modifying or deleting data**

Machine Translation

What is Machine Translation?

- Machine Translation is a field of AI in which machine is capable of translation content from one language to the other.

- Google Translate, Google Assistant, Facebook Translate, Grammarly.

Statistical Machine Translation

- Using Parallel Corpus as a training set.

- The goal is to translate a sentence from the source language to target language.

Neural Machine Translation

- SMT models are very complex in nature.
- NMT uses Sequence-2-Sequence Architecture which involves two RNNs.
- Encoder, encodes source sentence and fed this encoding to Decoder

NLP Recap with Deep Learning
Text Vectorization

- In order to apply machine learning / deep learning on Text data, we need to convert them to its vector form.
  - Vector is numeric form of a word.

- **Types of Text Vectorization:**
  - o Bag of Words
  - o TF-IDF
  - o Word Embeddings
  - o Character Embeddings

Data since and machine learning

Data: Huge amount of digitally recorded information about us from information sources

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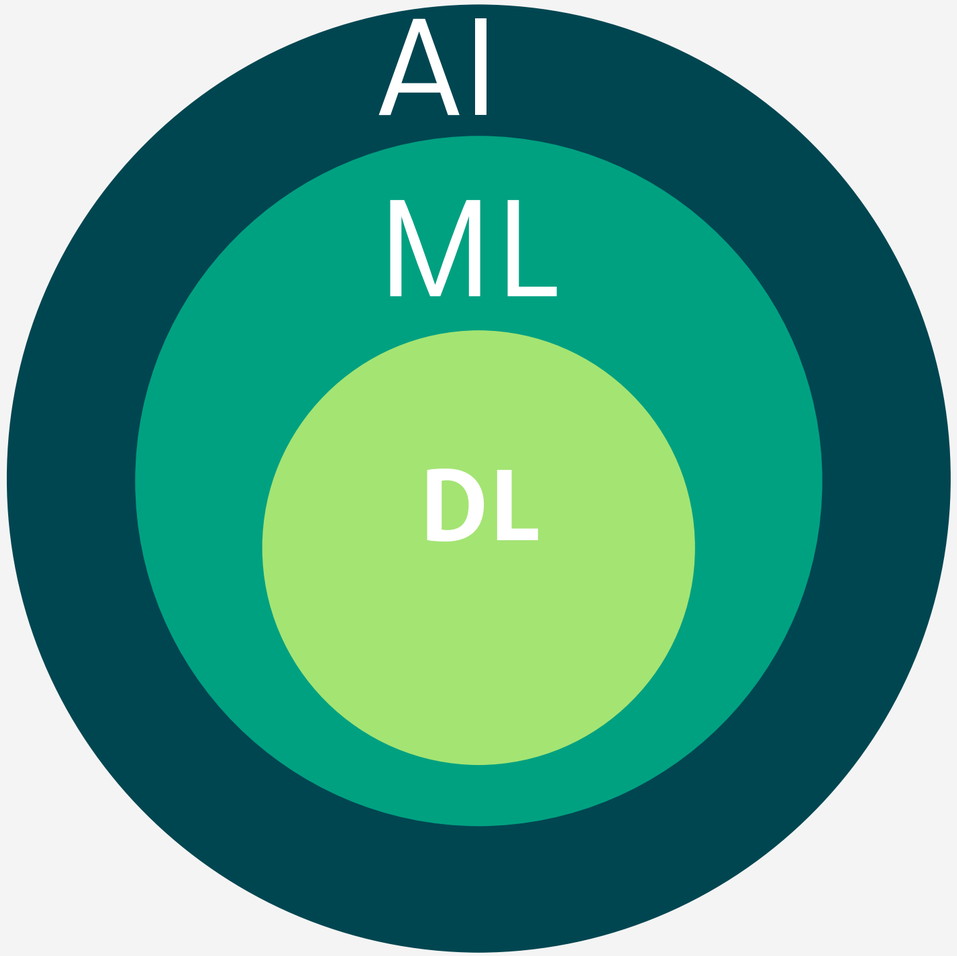
Data Science: Descriptive, predictive, and prescriptive analysis to extract insights and knowledge from data.

Difference between:

- AI (Artificial Intelligence): It is a technology that enables computers to simulate human intelligence using logic.

- ML (Machine Learning): It is a subset of AI that includes statistical techniques that allow machines to improve task performance through experience.

- DL (Deep Learning): It falls under machine learning and allows machines to train themselves to perform tasks.



Stages of Data Science

1. Data Collection

2.Data Cleaning

3.Data Analysis and Understanding(Descriptive)

Stages of Data Science

4-Developing Models and Algorithms(Predictive)

5. Model Implementation and Deployment

Robotics Industry

What is a Robot? and What types of Robots?

Robot is a machine that consists of mechanical and electronic parts, programmable to perform a specific task.

Types of Robots:

1. Drops Robots
2. Humanoid Robots
3. Designed for disaster
1. Educational Robots
1. Underwater Exploration Robots
1. Industrial Robots
1. Medical Robots

Robot Design

1- Define the Objective

2 - Learn Design Skills and Engineering Drawing

3 - Determine the Microcontroller

4- Choose Electronics and Sensors

5 - Select the Suitable Programming Language

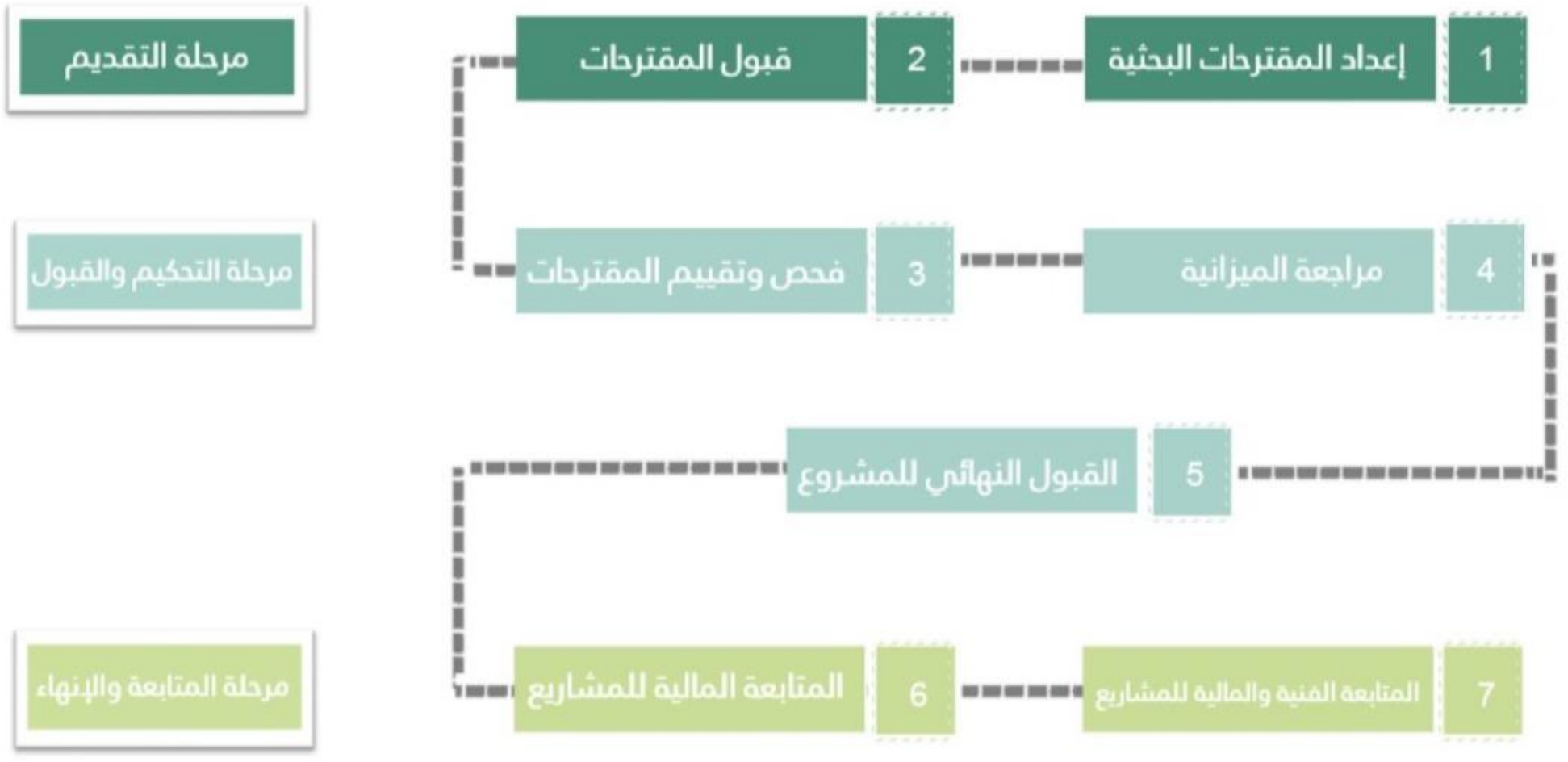
Considerations for Robot Design to Avoid Potential Mistakes:

1. Component Space
2. Robot Functionality

The Project

Introdation

مخطط قبول المقترحات البحثية ـ تحكيمها ـ قبولها ـ متابعتها

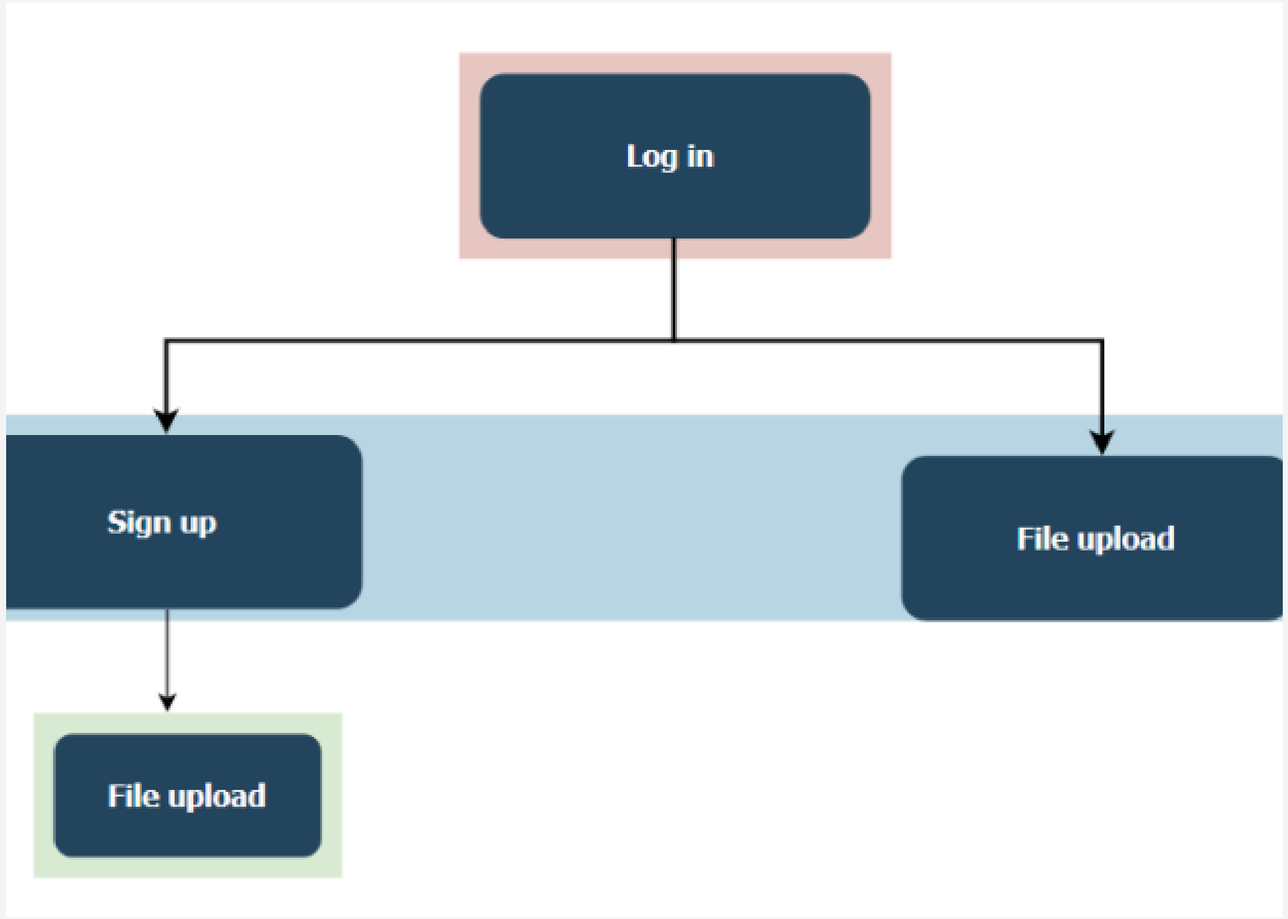


project steps:

- **find the perfect closing form**

	Full reference(المجلة اللي يرفع فيها names , titles, volume ,issue ,year)	Project no	Project Title	Date Start / End + Duration	Acknow	Principal investigator	Co-investigator	Summary	Keywords	Conclusion	Source	Something Add **we like**
1	×	×	√	Date Start / End	√	√	×	√	×	×	chatGpt	Closure sign-off for Reviewer
2	×	×	√	Date Start / End	√	√	×	√	×	√	getcody	
3	×	×	√	Start/ End	√	√	×	√	×	×	chatGpt	Key Milestones & Achievements
4	×	√	√	Start/ End	×	√	×	√	×	√	literallyanything	Objectives
5	×	×	√	Start / End	×	√	√	×	×	√	chatGpt	Project Reviewer
6	×	×	√	-Start / End -actual completion for each task	×	√	√	√	×	×	chatGpt	Budget
7	×	√	√	√ Only start date	√	√	×	×	×	×	google	سبب اغلاق المشروع وحالة المشروع و مخرجات المشروع
8	×	×	√	√ Only date	√	√	√	√	×	×	AgentGpt	
9 Ar	√ (Title)	√	√	√ Only date	√	√ and (signature)	×	×	×	×	google	
10	×	×	√	√ Only start date	×	√	×	√	×	√	Bard	Finance Advisor signature
11 Ar	√ (name, DOI, ISSN)	×	√	√	×	√ (with all information)	×	×	×	×	google	The amount of financial support

2. design the website map

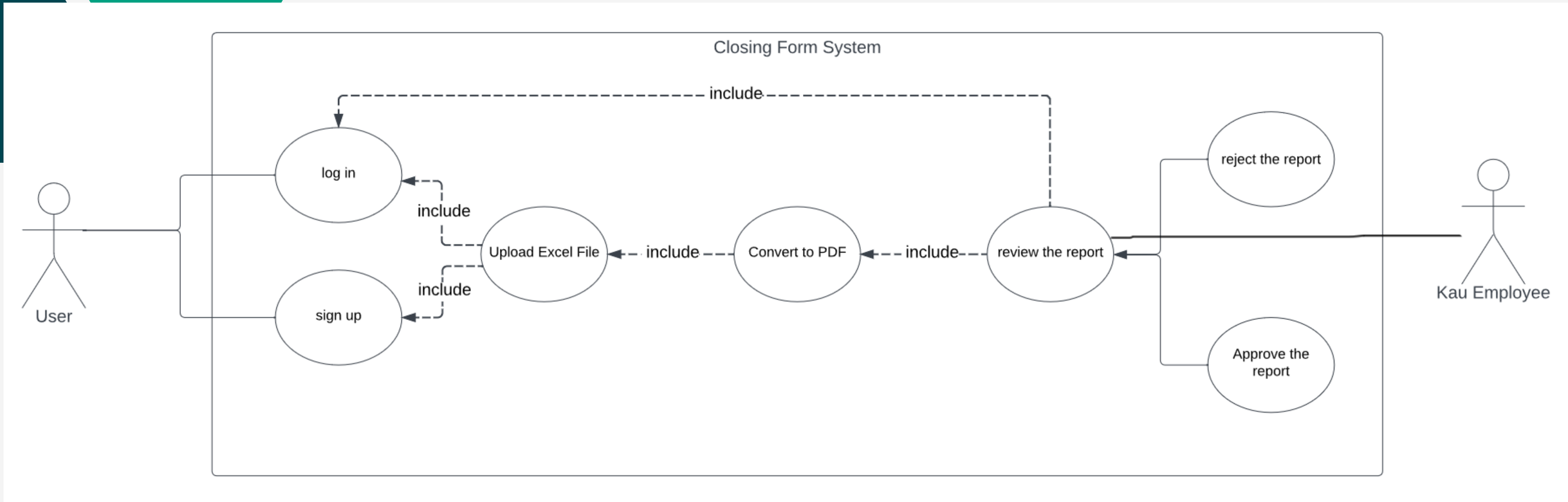


2. design the website map

- sign up / login
- upload excel file
- the ai genterate the abstract
- create pdf file have two pages

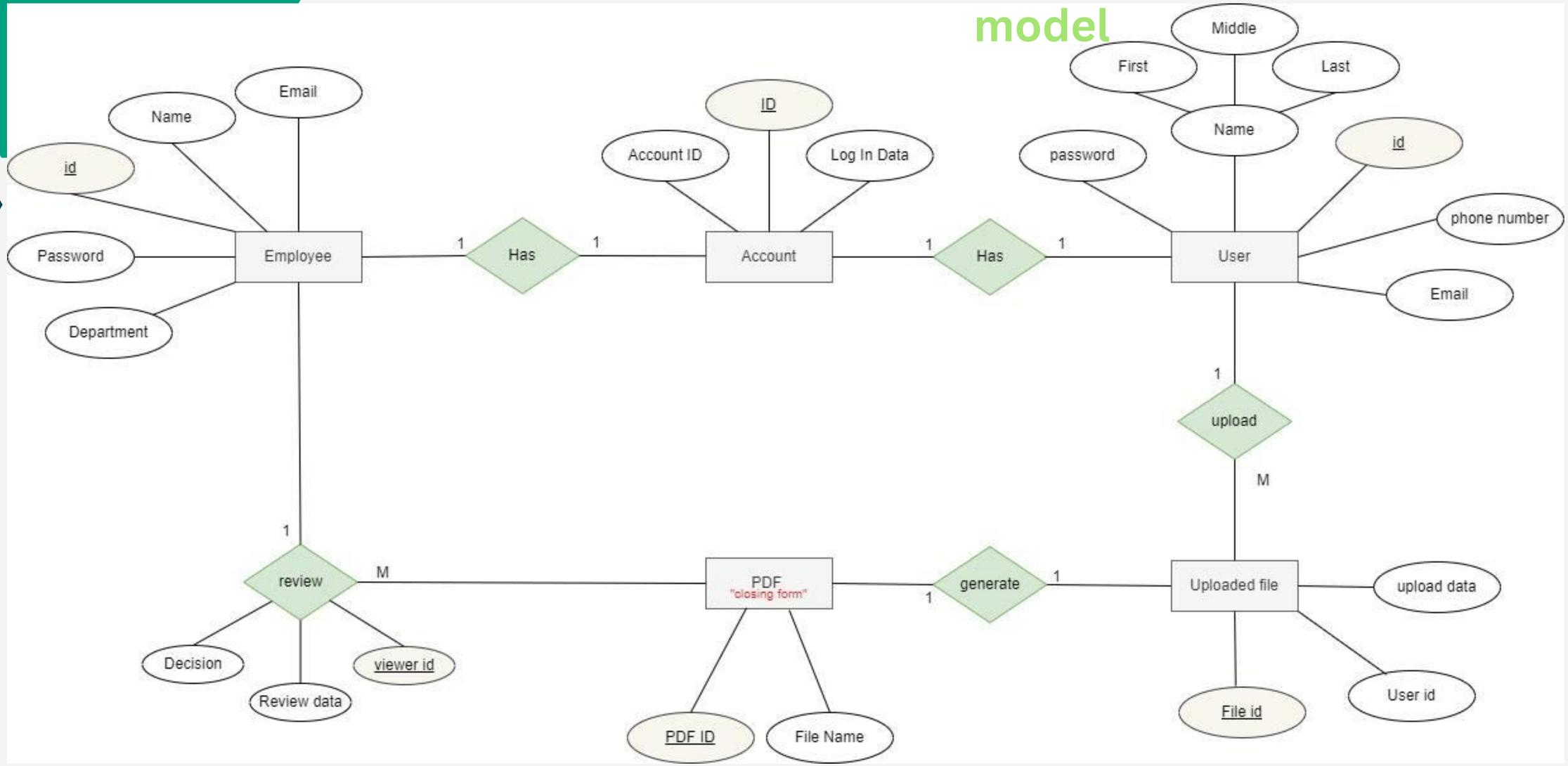
(the important information) - (the ai abstract of the project)

3. the use case

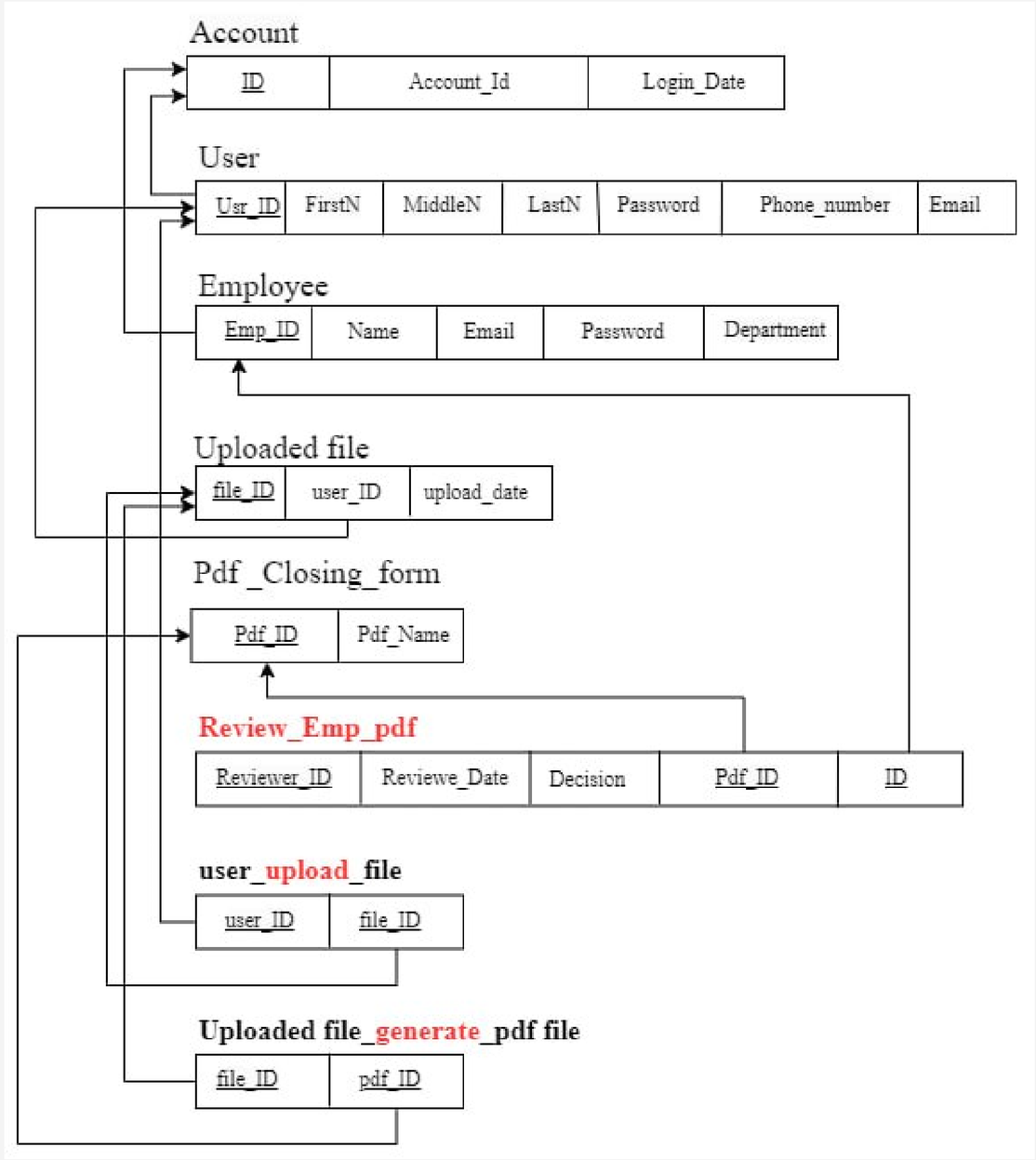


4. the Er diagram

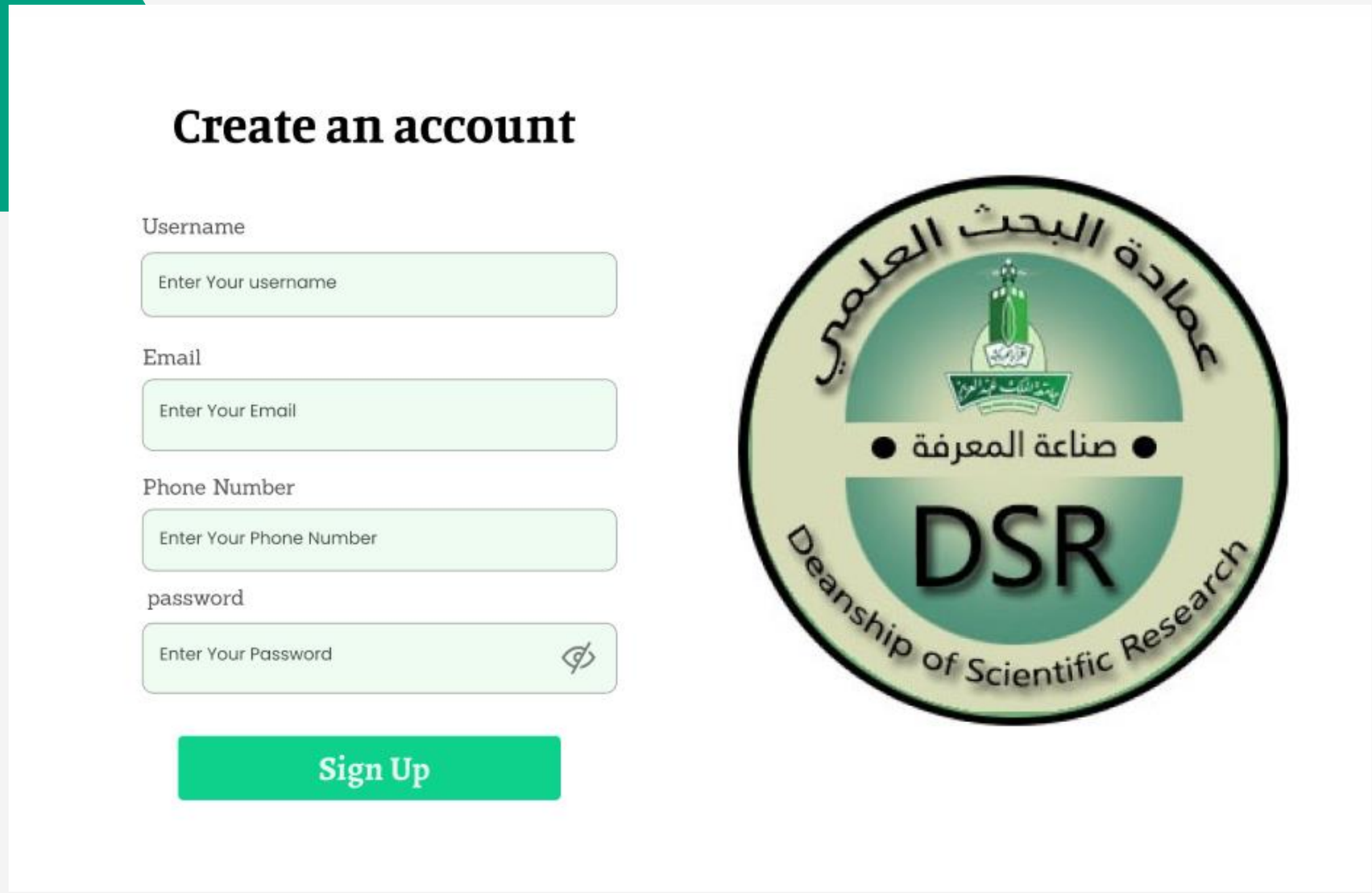
Entity–relationship model



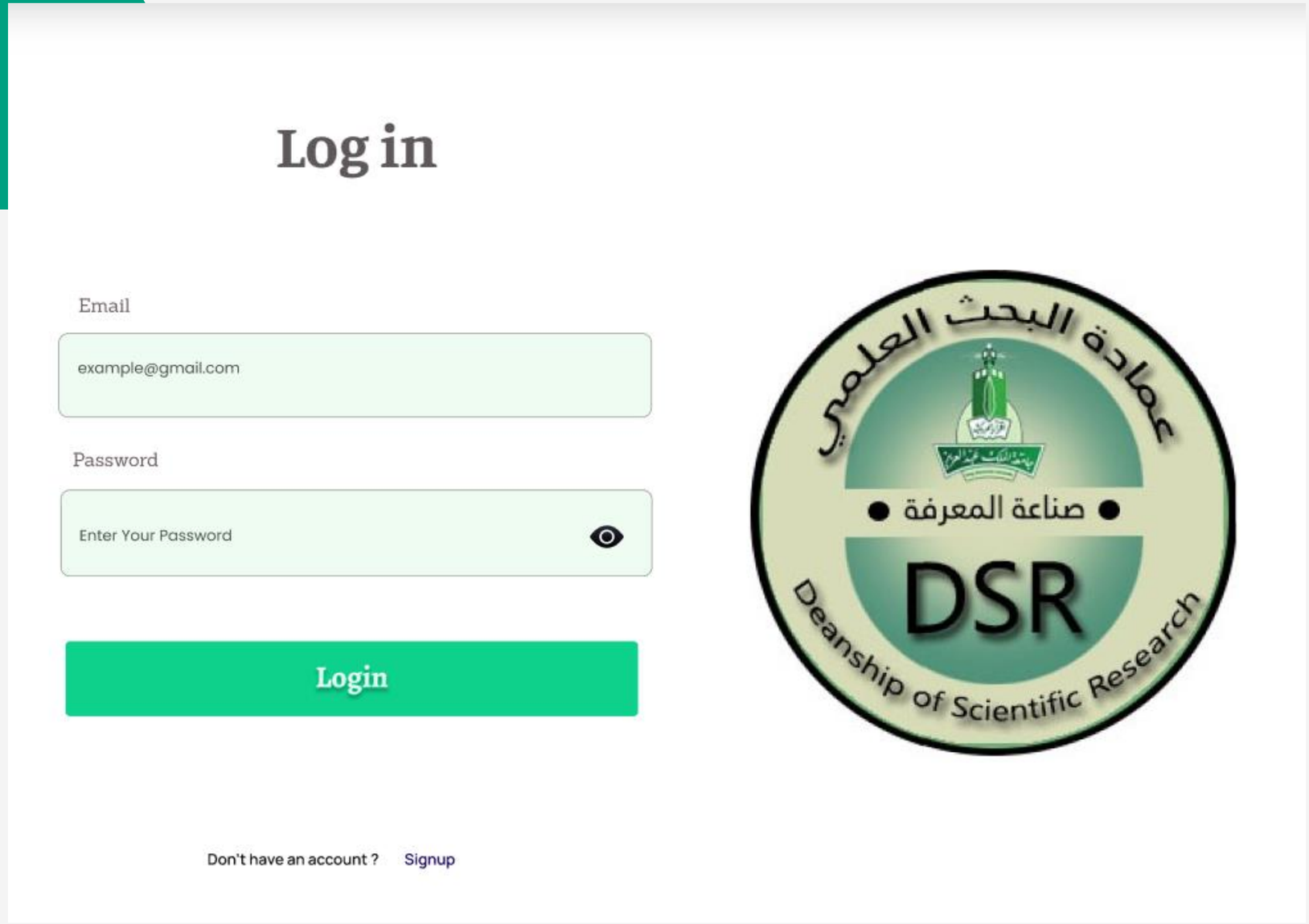
5. the Schema


Account
ID
Account_Id
Login_Date
User
Usr_ID
FirstN
MiddleN
LastN
Password
Phone_number
Email
Employee
Emp_ID
Name
Email
Password
Department
Uploaded file
file_ID
user_ID
upload_date
Pdf _Closing_form
Pdf_ID
Pdf_Name
Review_Emp_pdf
Reviewer_ID
Reviewe_Date
Decision
Pdf_ID
ID
user_upload_file
user_ID
file_ID
Uploaded file_generate_pdf file
file_ID
pdf_ID

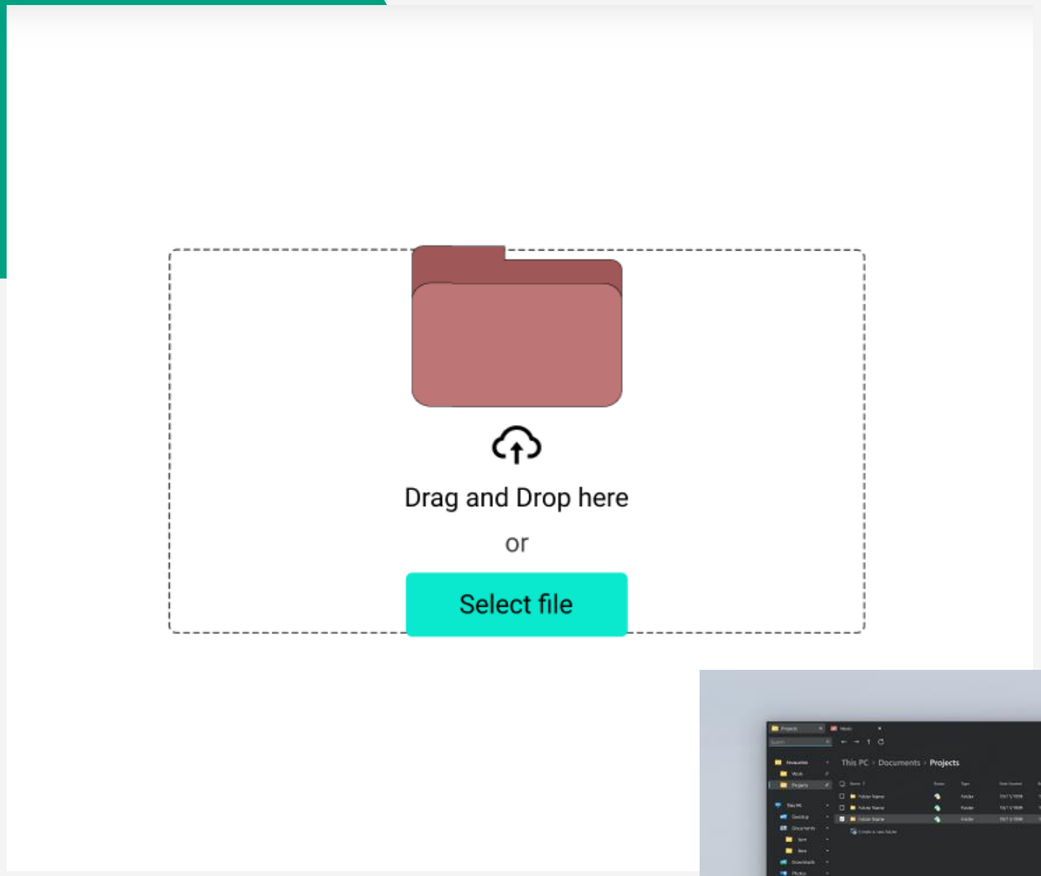
6. the prototype using Figma

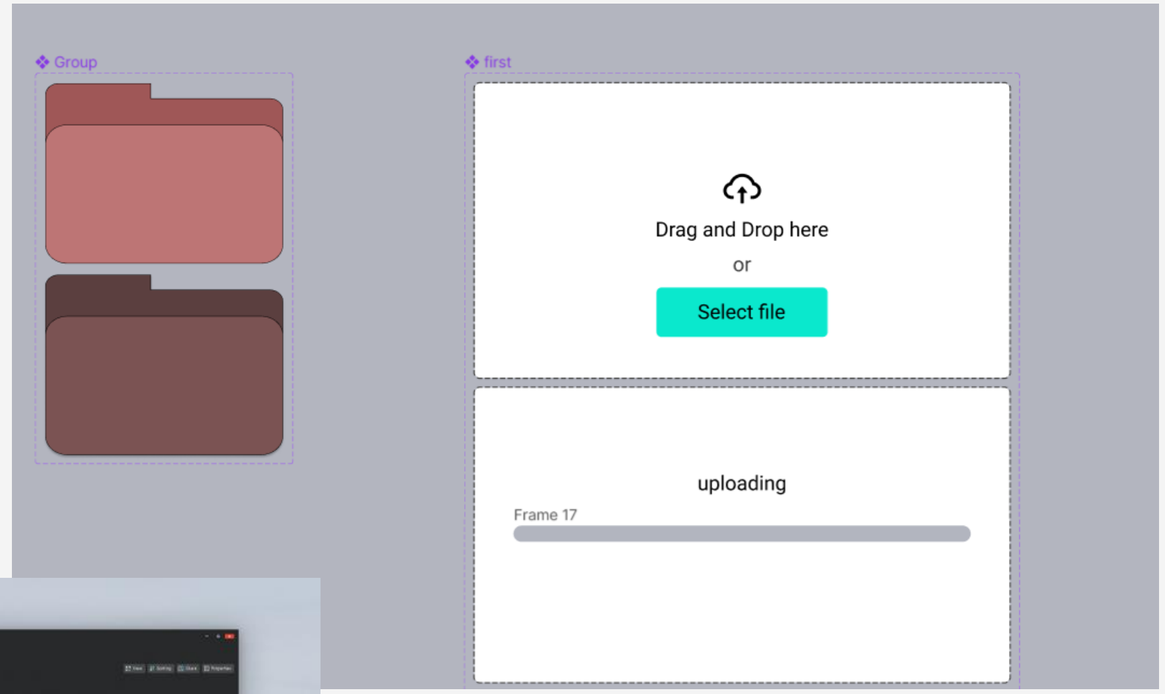


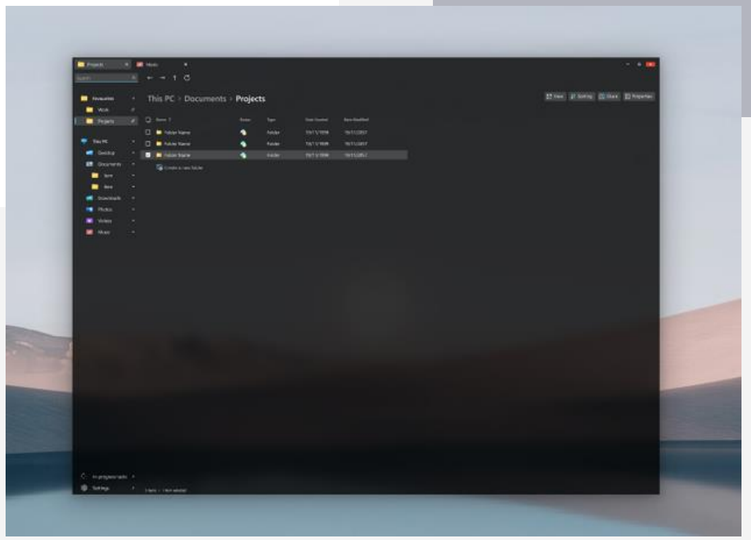
6. the prototype using Figma



6. the prototype using Figma







7. AI prompt

```
completion = openai.Completion.create(engine="text-davinci-003",
                                      prompt="Write a closing report for a research with the title " +
                                             Article_Title +
                                             " with an abstract " + Abstract +
                                             " The authors name " + Authors +
                                             "and the Author keyword " + Author_Keywords +
                                             " on this date ",
                                      max_tokens=1000)
```

- Article_Title
- Abstract
- Authors
- Author_Keywords

Libraries we used in VS

Flask:

Flask is a web framework for Python that helps you build web applications quickly and easily.

- `render_template`: Renders HTML templates to generate dynamic content for web pages.
- `redirect` and `url_for`: Help you manage URL redirections and generate URLs for routes.

```python
@app.route('/upload')
def upload():
    if not logged_in:
        flash('Access denied. Please log in first.', 'error')
        return redirect(url_for('login'))

    return render_template('upload.html')
```

Libraries we used in VS

Flask:

Flask is a web framework for Python that helps you build web applications quickly and easily.

- `request`: Allows you to access and manipulate incoming request data in your web application.

```python
@app.route('/login', methods=['GET', 'POST'])
def login():
    global logged_in
    if request.method == 'POST':
        username = request.form['username']
        password = request.form['password']

        # Perform validation and authentication here
        username_error = validate_username(username)
        password_error = validate_password(password)
```

Libraries we used in VS

Werkzeug:

Werkzeug is a utility library that Flask is built upon, providing various tools for web development.

`secure_filename`: **Used to sanitize and secure filenames for uploaded files.**

```
UPLOAD_FOLDER = 'uploads'
ALLOWED_EXTENSIONS = {'xls', 'xlsx'}

app.config['UPLOAD_FOLDER'] = UPLOAD_FOLDER
app.config['MAX_CONTENT_LENGTH'] = 16 * 1024 * 1024  # 16MB max upload size

def allowed_file(filename):
    return '.' in filename and filename.rsplit('.', 1)[1].lower() in ALLOWED_EXTENSIONS
```

Libraries we used in VS

pandas:

- Pandas is a powerful data manipulation and analysis library, particularly useful for handling and analyzing structured data.

```
import pandas as pd
```

```
def process_excel_and_generate_report(filepath):
    data = pd.read_excel(filepath)
```

Libraries we used in VS

openai:

- OpenAI is a platform that provides AI and machine learning models and tools, allowing you to integrate AI capabilities into your applications.

```
openai.api_key = os.getenv("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")
openai.api_key = "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"
```

```
completion = openai.Completion.create
```

Libraries we used in VS

os:

- The `os` module provides a way to interact with the operating system, including file and directory operations.

```
image_path = os.path.join(app.root_path, 'static', 'image.png')
pdf_filename = "generated_report.pdf"
output_file_path = os.path.join(app.root_path, 'static', pdf_filename)
```

Libraries we used in VS

hashlib:

The `hashlib` library offers functions to create hash digests (checksums) of data, often used for data integrity and security.

```
# Hash the password before storing it (use a more secure hashing method in production)
hashed_password = hashlib.sha256(password.encode()).hexdigest()
```

Libraries we used in VS

reportlab:

- ReportLab is a library for creating complex PDF documents and reports in Python.

- `lib.pagesizes` and `lib.colors`: Provide predefined paper sizes and colors for documents.

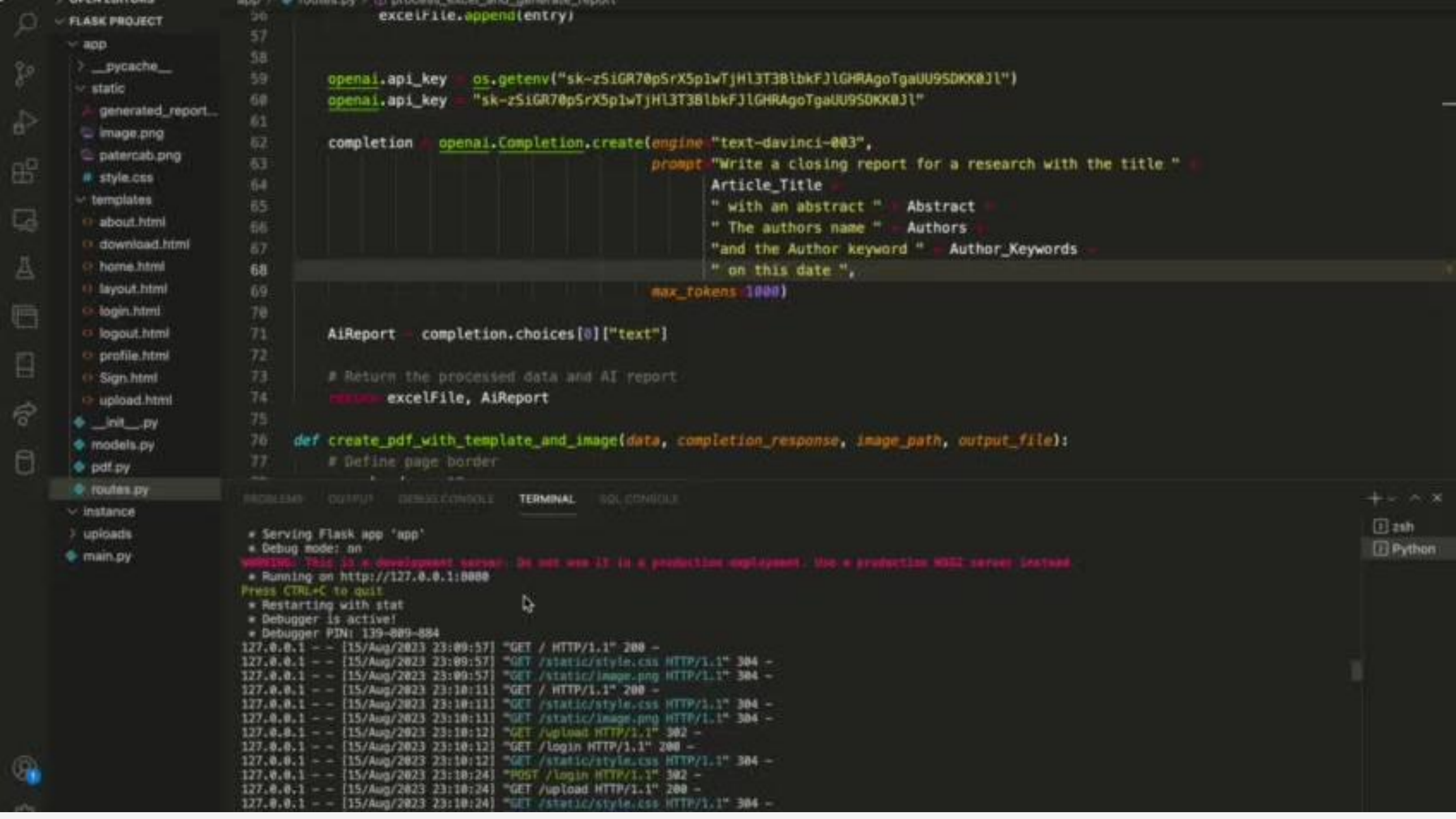
- `lib.styles`: Helps you define styles for various document elements.

- `platypus`: Contains classes for creating document elements like paragraphs, images, and tables.

- `SimpleDocTemplate`: Used to create a simple PDF document template.

- `Image`: Represents an image to be included in the PDF.

- `io`: Provides tools for working with input/output streams.


FLASK PROJECT
app
__pycache__
static
generated_report_
image.png
patercab.png
style.css
templates
about.html
download.html
home.html
layout.html
login.html
logout.html
profile.html
Sign.html
upload.html
__init__.py
models.py
pdf.py
routes.py
instance
uploads
main.py
excelFile.append(entry)
openai.api_key = os.getenv("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")
openai.api_key = "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"
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prompt="Write a closing report for a research with the title " +
Article_Title +
" with an abstract " + Abstract +
" The authors name " + Authors +
"and the Author keyword " + Author_Keywords +
" on this date ",
max_tokens=1000)
AiReport = completion.choices[0]["text"]
# Return the processed data and AI report
return excelFile, AiReport
def create_pdf_with_template_and_image(data, completion_response, image_path, output_file):
# Define page border
PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
SQL CONSOLE
zsh
Python
* Serving Flask app 'app'
* Debug mode: on
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on http://127.0.0.1:8000
Press CTRL+C to quit
* Restarting with stat
* Debugger is active!
* Debugger PIN: 139-809-884
127.0.0.1 - - [15/Aug/2023 23:09:57] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [15/Aug/2023 23:09:57] "GET /static/style.css HTTP/1.1" 304 -
127.0.0.1 - - [15/Aug/2023 23:09:57] "GET /static/image.png HTTP/1.1" 304 -
127.0.0.1 - - [15/Aug/2023 23:10:11] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [15/Aug/2023 23:10:11] "GET /static/style.css HTTP/1.1" 304 -
127.0.0.1 - - [15/Aug/2023 23:10:11] "GET /static/image.png HTTP/1.1" 304 -
127.0.0.1 - - [15/Aug/2023 23:10:12] "GET /upload HTTP/1.1" 302 -
127.0.0.1 - - [15/Aug/2023 23:10:12] "GET /login HTTP/1.1" 200 -
127.0.0.1 - - [15/Aug/2023 23:10:12] "GET /static/style.css HTTP/1.1" 304 -
127.0.0.1 - - [15/Aug/2023 23:10:24] "POST /login HTTP/1.1" 302 -
127.0.0.1 - - [15/Aug/2023 23:10:24] "GET /upload HTTP/1.1" 200 -
127.0.0.1 - - [15/Aug/2023 23:10:24] "GET /static/style.css HTTP/1.1" 304 -

Summary

What We Have Learned 

challenges 

Soft Skills

Communication

Collaboration

Leadership

Problem solving

Adaptability

Public speaking and presentation

Motivation and relationship bulding

Technical Skills

- Programming and web Development
- Software engineering
- Artificial intelligence
- Databaseses
- Security

challenges

GitHub

Flask

Thank You