1- Analysis and requirements
1.1- System Requirements
1.1.1- Function Requirements

Requirements	Description
Sign up	User should make an account before uploading any pdf to check on Requirements: Enter all required credentials
Log in	To be authenticated the user should enter the Email and Password Requirements: Enter Email and Password
Data Storage	The system must store user profile information, including name, email, password, upload history purchase history.
Payment Processing	The system must support payment transactions via credit card, and bank transfer.
Upload pdf file	The user must upload the pdf file to get the response if is benign or malicious

1.1.2-Non-Functional Requirements

Requirements	Description
Availability	The site is available always
Usability	We made an easy user interface so anyone can use the site all they need just to register and just upload
Portability	Can open it on any device such as (phone – pc)
Reliability	All functions works well and there are no fails
Security	Users' data is secure no-one can access on it

1.1.3- Functional Requirements Specifications

- Stakeholders:

• User

• Admin

Actors:

1. **User**: Uploads the PDF file and views the result.
2. **System(Malero):** Processes the PDF, tracks upload counts, and interacts with the ML model.
3. **ML Model**: Analyzes the PDF and determines if it's benign or malicious.

Use Cases:

1. Upload PDF

- **Primary Actor**: User
- **Goal**: To upload a PDF file for analysis.
- **Main Success Scenario**:
    1. User logs into the system.
    2. User navigates to the upload section.
    3. User selects a PDF file to upload.
    4. User submits the PDF file.
    5. System confirms the receipt of the PDF file.
    6. System checks the number of uploads by the user.
    7. If the user has reached three uploads, proceed to **Prompt for Purchase**.
- **Alternative Flows**:
    o If the file format is not PDF, the system displays an error message.
    o If the user is not authenticated, the system prompts for login.

2. Process PDF

- **Primary Actor**: System (Malero)
- **Goal**: To send the uploaded PDF to the ML model for analysis.
- **Main Success Scenario**:
    1. System receives the uploaded PDF.
    2. System sends the PDF to the ML model.
    3. System waits for the analysis result from the ML model.
- **Alternative Flows**:
    o If the system fails to send the PDF, it retries up to three times before notifying the user of an error.

3. Analyze PDF

- **Primary Actor**: ML Model
- **Goal**: To analyze the PDF and determine if it is benign or malicious.
- **Main Success Scenario**:
  1. ML model receives the PDF from the system.
  2. ML model processes the PDF.
  3. ML model determines the status (benign or malicious).
  4. ML model sends the result back to the system.
- **Alternative Flows**:
  - If the ML model encounters an error during analysis, it logs the error and notifies the system.

4. Display Result

- **Primary Actor**: System (Malero)
- **Goal**: To display the analysis result to the user.
- **Main Success Scenario**:
  1. System receives the analysis result from the ML model.
  2. System displays the result on the user's screen.
  3. User views the result (benign or malicious).
- **Alternative Flows**:
  - If the system fails to display the result, it logs the error and notifies the user.

5. Prompt for Purchase

- **Primary Actor**: System (Malero)
- **Goal**: To prompt the user to purchase a package after three free uploads.
- **Main Success Scenario**:
  1. System checks the number of uploads by the user.
  2. If the user has uploaded three PDFs, the system displays a prompt.
  3. The prompt offers the user to purchase the Gold or Diamond package.
- **Alternative Flows**:
  - If the user selects a package, proceed with the purchase process.
  - If the user declines, restrict further uploads.
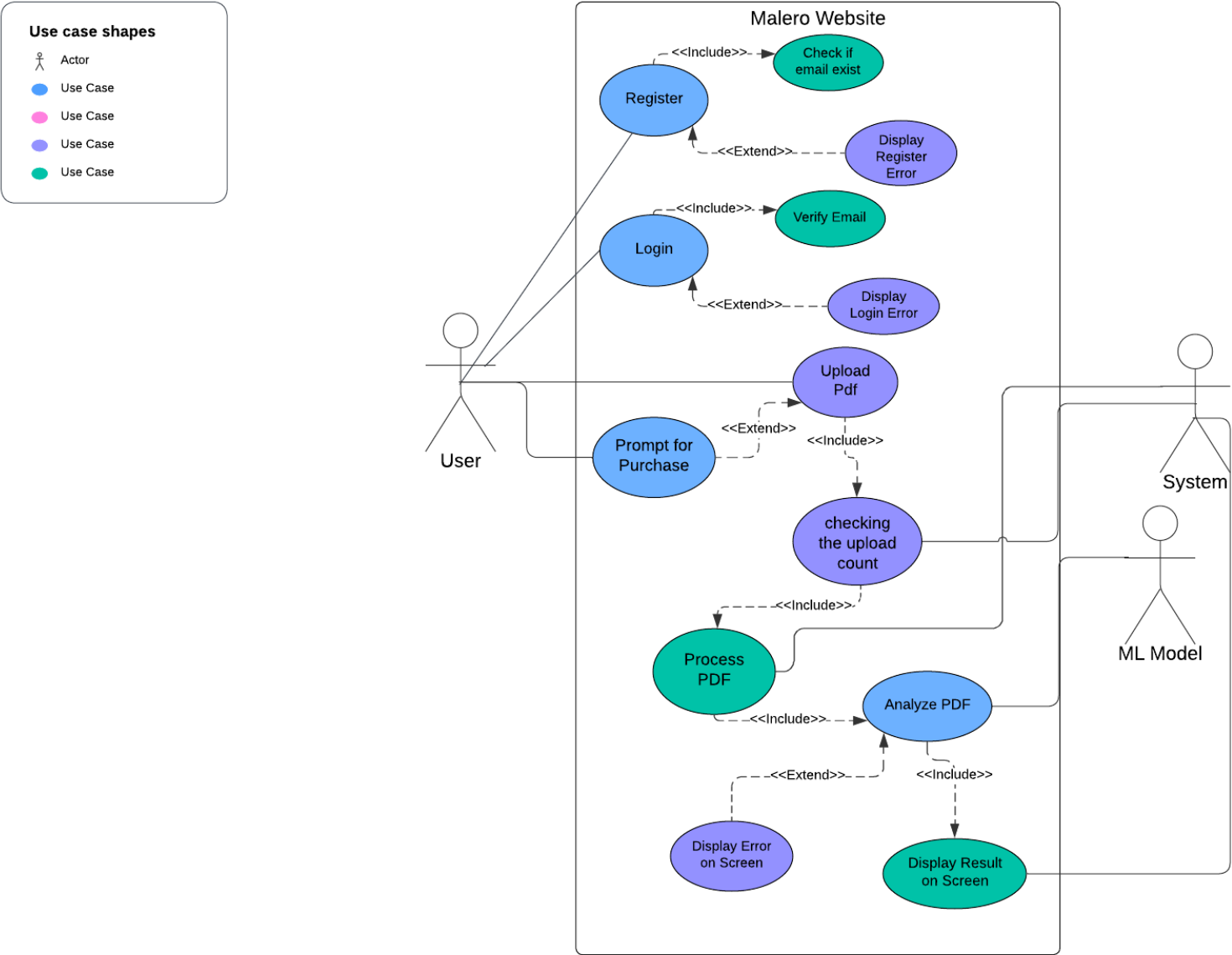
Use case diagram:

Fig: Use Case Diagram

2-Testing user sign-up

Test case id	Test Objective	Pre-condition	Steps	Test data	Expected Result	Actual Result
TC_01	Successful sign up	Valid username, First-name, Last-name, Email, Password, And Re-password	1-enter username 2-enter First-name 3-enter last-name 4-enter email 5-enter password 6-re-enter password	Username= abdullah2 First-name=Abdullah Last-name=abdelmouty Email =abdo@gmail.com Password=abcd1234 Re-password=abcd1234	Sign-up Successfully can go to home page	Sign-up Successfully can go to home page
TC_02	A message that will appear to tell you to enter a valid email	Valid username, First-name, Last-name, Password, And Re-password Invalid Email	1-enter username 2-enter First-name 3-enter last-name 4-enter email 5-enter password 6-re-enter password	Username= abdullah2 First-name=Abdullah Last-name=abdelmouty Email =abdogmail.com Password=abcd1234 Re-password=abcd1234	Message will alert u to enter a valid email	The message appears
TC_03	A message that will appear to tell you to enter the same password in the password and Re-password fields	Valid username, First-name, Last-name, Email, Password, And Invalid Re-password	1-enter username 2-enter First-name 3-enter last-name 4-enter email 5-enter password 6-re-enter password	Username= abdullah2 First-name=Abdullah Last-name=abdelmouty Email =abdo@gmail.com Password=abcd1234 Re-password=ab1234	Message will alert u to enter the two passwords should be the same	The message appears
TC_04	Make sure that a message will appear to tell you that the	Do not enter any field	Do not enter any field		Message will appear to tell the user that the field	The message appears

	field not empty				can't be empty	

Testing user-login

TC_05	Login successfully	Valid email and password.	1. enter the email 2.enter the password	Email =abdo@gmail.com Password=abcd1234	Login successfully and can upload pdf	Login successfully and can upload pdf
TC_06	Make sure that a message appears to tell the user that the email or password are wrong	Invalid email or password	1. enter valid email 2.enter invalid password	Email =abdogmail.com Password=abcd1234	Message will appear to tell the user that the email or password are wrong	Message will appear

Testing uploading file

TC_07	Upload without login	Pdf to check	Upload the pdf the user wants to check	pdf	Message to alert user that they can't upload without login	Message will appear
TC_08	Upload with login	Pdf to check	Upload the pdf the user wants to check	pdf	Message to give the user the result	Message will appear
TC_09	Upload with login but the free trials ended	Pdf to check	Upload the pdf the user wants to check	pdf	Message to alert user that they can't upload without buying extra credits	Message will appear

Testing payment

TC_10	pay successfully	Valid username, Full name, Email,	1-Enter username 2-Enter full-name	fullName=abdullah abdelmouty, email= abdo@gmail.com,	Payment done successfully and can	Payment done successfully and

		Phone, Country, Period, Package, Card-id,	3-Enter Email 4-Enter phone 5-Enter country 6-Enter period 7-Enter package 8-Enter card-id	phoneNumber= 123456789, country=egypt, period=monthly, package_id=gold, card_id=12345678910, user_id=abdullah2	upload again	can upload again
TC_11	A message that will appear to tell you to enter a valid email	Valid username, Full name, Phone, Country, Period, Package, Card-id Invalid Email	1-Enter username 2-Enter full-name 3-Enter Email 4-Enter phone 5-Enter country 6-Enter period 7-Enter package 8-Enter card-id	fullName=abdullah abdelmouty, email= abdogmail.com, phoneNumber= 123456789, country=egypt, period=monthly, package_id=gold, card_id=12345678910, user_id=abdullah2	Message to alert user to enter valid email	Message will appear
TC_12	A message that will appear to tell you to enter a valid email	Valid username, Full name, Phone, Country, Period, Package, Email Invalid Card-id	1-Enter username 2-Enter full-name 3-Enter Email 4-Enter phone 5-Enter country 6-Enter period 7-Enter package 8-Enter card-id	fullName=abdullah abdelmouty, email= abdo@gmail.com, phoneNumber= 123456789, country=egypt, period=monthly, package_id=gold, card_id=123, user_id=abdullah2	Message to alert user to enter valid card id	Message will appear Message will appear
TC_13	Make sure that a message will appear to tell you that the field not empty	Do not enter any field	Do not enter any field		Message will appear to tell the user that the field can't be empty	The message appears

3-Used technologies and tools

Server: Django

Django is a high-level Python web framework that encourages rapid development and clean, pragmatic design. It follows the "batteries-included" philosophy, providing a lot of built-in features such as an ORM (Object-Relational Mapping), authentication, and an admin panel, which helps in speeding up the development process.

Database: MySQL

MySQL is a popular relational database management system known for its reliability, scalability, and performance. It is used to store and manage the data for the web application. With Django, you can easily connect to MySQL using the Django ORM, which allows you to interact with the database using Python code instead of writing SQL queries.

API: Django REST framework

Django REST framework (DRF) is a powerful and flexible toolkit for building Web APIs in Django. It simplifies the process of creating RESTful APIs by providing features like serializers, viewsets, and routers, which help in converting database models to JSON and managing URL routing. DRF also offers robust authentication and permissions systems to secure the API endpoints.

React.js: React is a powerful JavaScript library that will help us build a dynamic and interactive web application with a component-based architecture.
CSS: CSS (Cascading Style Sheets) will be used to style our web application, ensuring it has a visually appealing and user-friendly interface.
Git: Git is a distributed version control system that will enable us to track changes, collaborate with team members, and deploy the web application efficiently.
GitHub: GitHub is a web-based platform for version control and collaborative software development, utilizing Git for managing project repositories.

JWT (JSON Web Tokens): JWTs will be used to implement secure user authentication through endpoints like `/api/register` and `/api/login`, ensuring a safe and personalized user experience.