

User and Technical Guide

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AI-assisted Online Psychotherapy Portal

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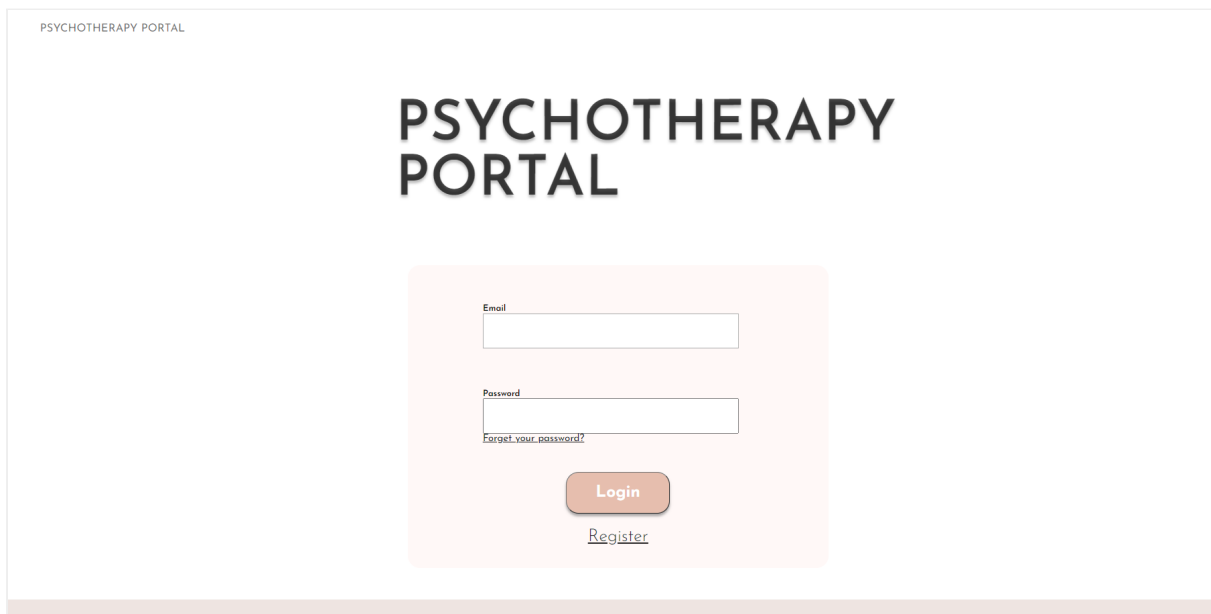
End User Guide	2
User Authentication	2
Accessing the Web Application	2
Registration	2
Login	3
Forget Password*	3
Navigation	4
Your Account	5
Overview	5
Updating Your Information	6
Change Password	6
Logging Out	7
Patient Record Management	7
Adding Patient Record	8
Viewing Record	9
Update Record	10
Delete Record	10
Search	11
Video Files Management and Use of Facial Expression Recognition Feature	12
Uploading a Video	12
Video Database	13
Processing a Video	14
Link from Patient Record	16
Technical Guide	17
Setting Up	17
Installation of Python, Flask and related dependencies	17
Creation of Database	17
Admin Email Account	17
Running the Web Application	18
Managing the database	19
Using SQLite - View and Manage Database Entries	19
Using Alembic - Perform Database Schema Changes	19

1. End User Guide

1.1. User Authentication

1.1.1. Accessing the Web Application

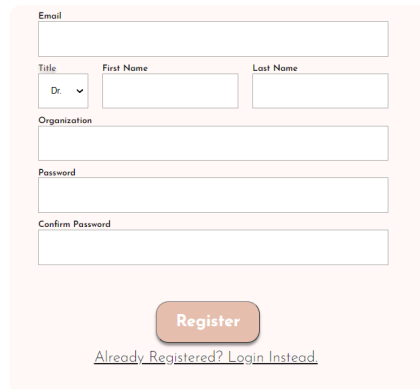
- A. Access the website through the given address. The landing page will be the login page as depicted below.
- B. As a new user, you would need to create an account with us to access the web portal. Proceed to the registration page via the 'Register' link at the bottom here.



The screenshot shows the Psychotherapy Portal login page. At the top left, it says "PSYCHOTHERAPY PORTAL". In the center, the title "PSYCHOTHERAPY PORTAL" is displayed in large, bold, dark letters. Below the title is a light pink rectangular box containing the login form. The form has two input fields: "Email" and "Password". Below the "Password" field is a link that says "Forgot your password?". At the bottom of the form is a rounded orange button labeled "Login". Below the button is a link that says "Register".

1.1.2. Registration

- A. Fill in all information accordingly as per your details.
- B. The organization field is for the organization that you are affiliated with as a mental health care provider.
- C. Be sure to use your own email address as you would need it to log in and for retrieval of password.
- D. Ensure that your chosen password matches both fields of password and confirm password. If your given email address has not been registered, you would be redirected back to the login page and your account has been successfully created.



Registration form fields:

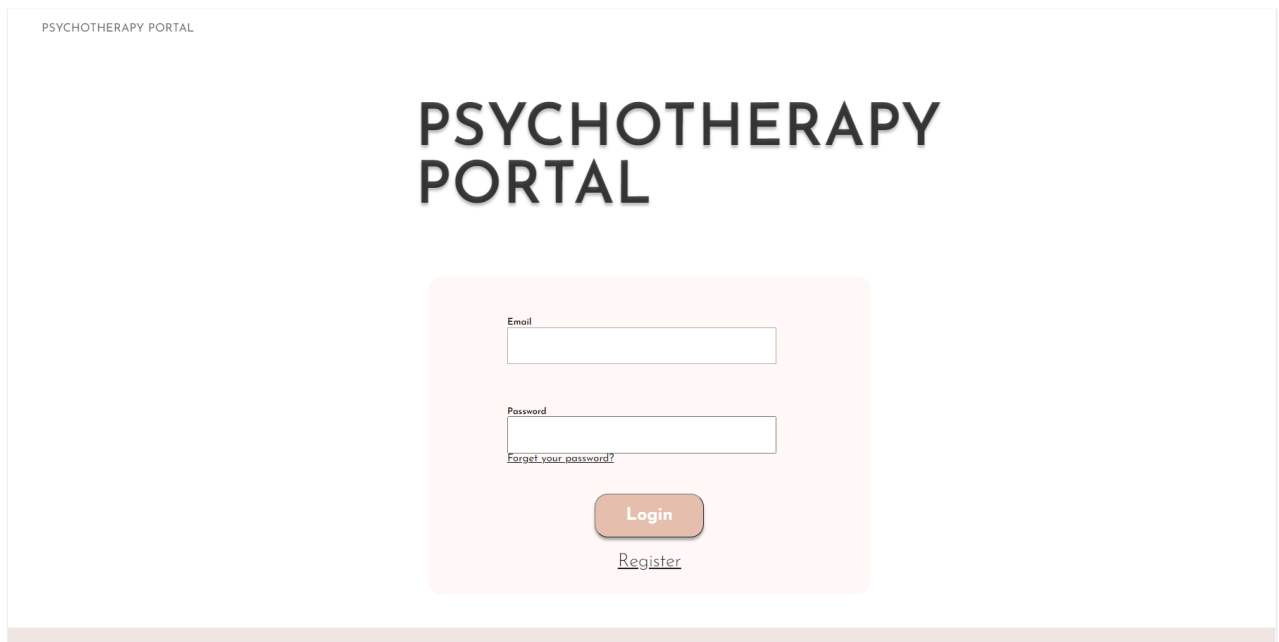
- Email
- Title (Dropdown menu with 'Dr.' selected)
- First Name
- Last Name
- Organization
- Password
- Confirm Password

[Register](#)

[Already Registered? Login Instead.](#)

1.1.3. Login

Fill up the required fields according to the email address and password you had used in the previous step. After doing so, press the login button to sign in.



PSYCHOTHERAPY PORTAL

Login form fields:

- Email
- Password

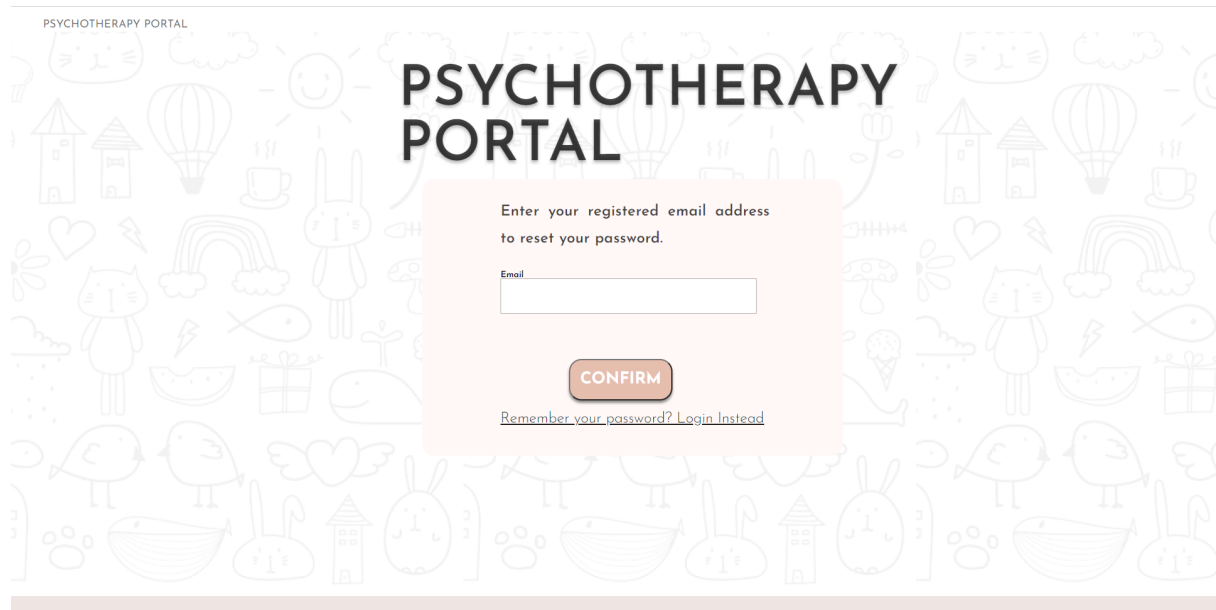
[Forgot your password?](#)

[Login](#)

[Register](#)

1.1.4. Forget Password*

If you have forgotten your password, you may click from the login page, 'Forgot your password?' to reach the following page.

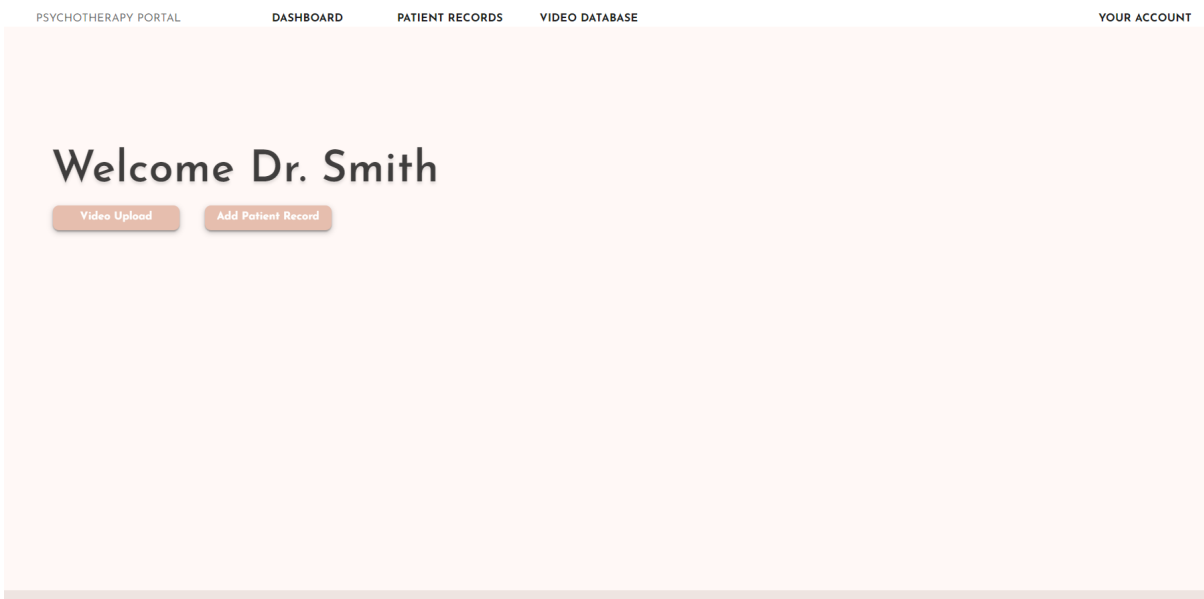


Ensure that you are already a registered user, and enter the email address that you have registered with and then click 'Confirm'. You should shortly receive an email from our portal containing a link in which you can click to bring you to a page in which you can reset your password. After resetting your password, you may use it to login.

(*Disclaimer: This feature may not work depending on the host setup.)

1.2. Navigation

- A. After a successful login, you will be redirected to your dashboard. From here you can access all of the site's functionalities.
- B. The navigation bar at the top consists of important links and will be present on all of the site's pages for quick access.
- C. The navigation bar allows you to quickly go back to the dashboard, check the patient and video databases and to access your account information.
- D. On the dashboard page itself, there are two buttons beneath your name that allows you to upload a video or add a patient record.

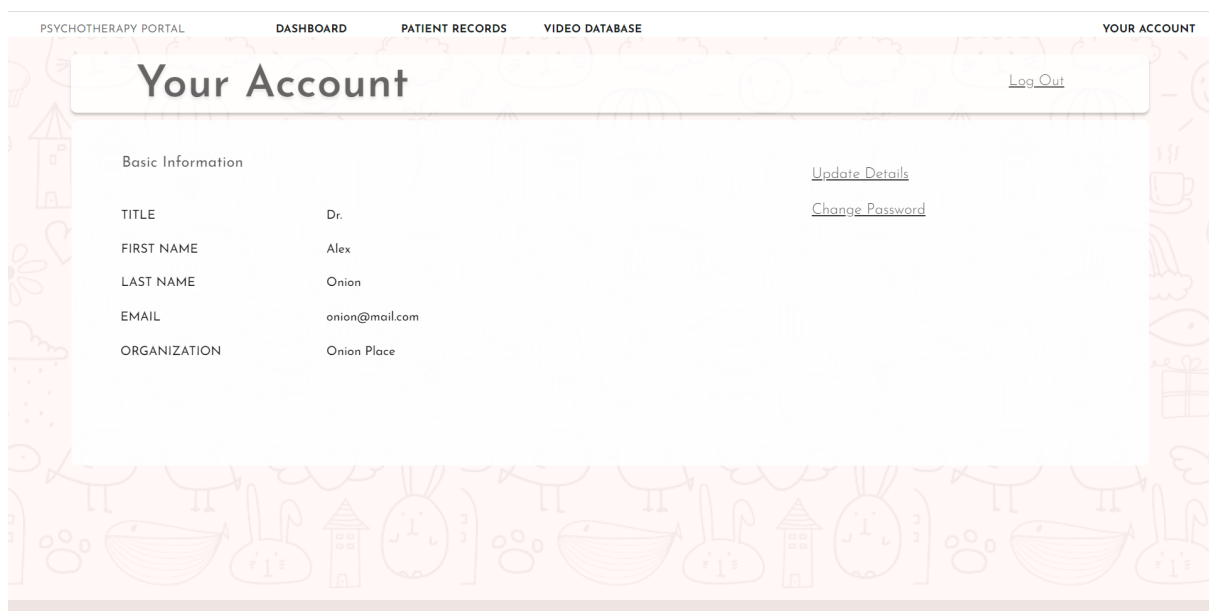


1.3. Your Account

On the most right of the navigation bar is a link that will take you to your account details.

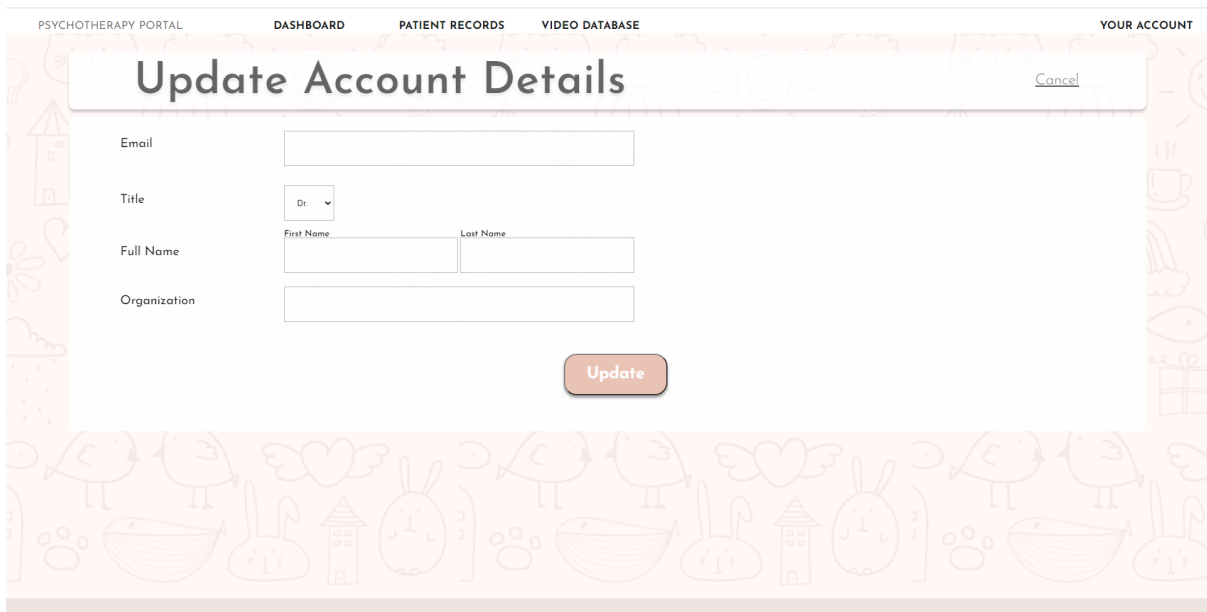
1.3.1. Overview

This page shows you a quick overview of the information you had entered for your account. From here, you can also update your details, change your password and log out of your account.



1.3.2. Updating Your Information

Clicking the 'Update Details' link will take you to this page where you enter all your new information accordingly. Note that all information must be entered even if they are to stay the same. Click update details when done and you will be redirected back to the account overview when your changed information is reflected.



The screenshot shows a web interface for a 'PSYCHOTHERAPY PORTAL'. At the top, there are navigation links: 'DASHBOARD', 'PATIENT RECORDS', 'VIDEO DATABASE', and 'YOUR ACCOUNT'. The main heading is 'Update Account Details' with a 'Cancel' link to the right. The form contains the following fields:

- Email: A single-line text input field.
- Title: A dropdown menu with 'Dr.' selected.
- Full Name: Two side-by-side text input fields labeled 'First Name' and 'Last Name'.
- Organization: A single-line text input field.

At the bottom center of the form is an orange 'Update' button. The background of the page features a light orange pattern of various cartoon icons like birds, rabbits, and houses.

1.3.3. Change Password

- A. Clicking the 'Change Password' link will take you to the page below where you can enter a new password for use.
- B. Please ensure that your password matches on both fields.
- C. Click the button at the bottom when you are done and you will be redirected back to the account overview page.
- D. Your new password can be used the next time you log in.

PSYCHOTHERAPY PORTAL

DASHBOARD

PATIENT RECORDS

VIDEO DATABASE

YOUR ACCOUNT

Change Password

Cancel

Password

Confirm Password

Change Password

1.3.4. Logging Out

When you want to log out, click the ‘Log Out’ button on this page. You will be logged out of your account and will be redirected to the login page. To once again access the web portal’s features, you would need to login again.

Your Account

Log Out

1.4. Patient Record Management

PSYCHOTHERAPY PORTAL

DASHBOARD

PATIENT RECORDS

VIDEO DATABASE

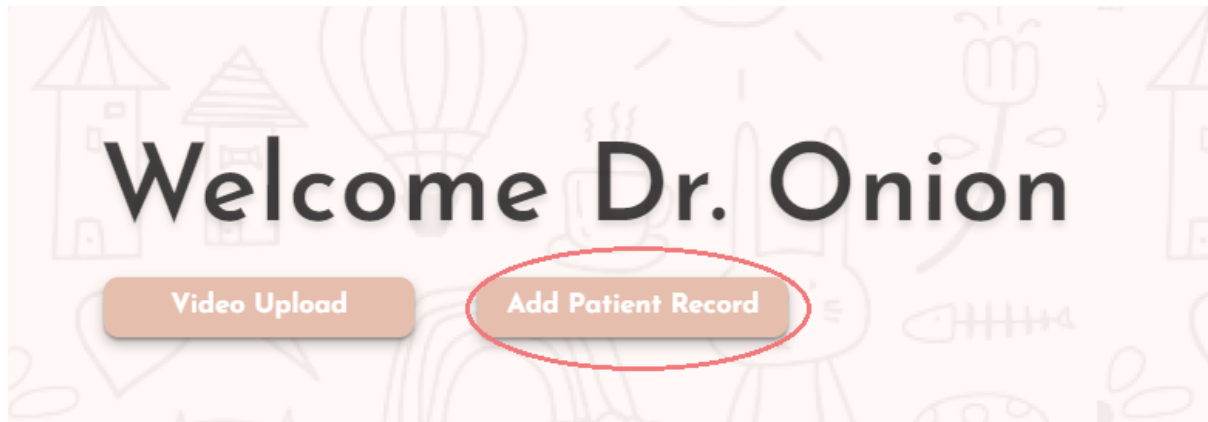
YOUR ACCOUNT

Search

Add Record

Patient ID	First Name	Last Name	Country
3	Jasmine	Erickson	USA
4	John	Johansen	America

Before you can upload your psychiatry videos, you would need to add the corresponding patient's information onto a record page. To do so, you can either click the 'Add Patient Record' button on the dashboard page:



Or by clicking the 'Patient Records' link on the navigation bar and then from there, clicking the 'Add Record' link:



1.4.1. Adding Patient Record

- A. On this page you would need to fill in the following required information of the patient.
- B. For clarification, for their full name, if there is any middle name, it can be filled in with the first name. Their age will be recorded in years, and thus as a whole number.
- C. Country would refer to the patient's current country of residence.
- D. As this is a psychotherapy portal intended for use for patients who are minors, their guardian information would need to be filled.
- E. After filling in the information, click "Add Patient Record" at the bottom.
- F. You will then be redirected to the patient records database, and your new record will be shown.

Note that you are only able to view records that you have added, you cannot view the record of another user.

PSYCHOTHERAPY PORTAL DASHBOARD PATIENT RECORDS VIDEO DATABASE YOUR ACCOUNT

Add Patient Record

[Cancel](#)

Full Name	First Name Jasmine	Last Name Erickson
Gender	Female	
Age in Years	10	
Country	USA	
Title	Mrs.	
Guardian's Name	First Name Erica	Last Name Erickson
Relationship	Parent	
Email	erica.rickson@yahoo.com	

[Submit](#)

1.4.2. Viewing Record

To view any of your records listed, click on their ID here to be redirected to their individual record page. Here you can view all of the information of the patient as well as access links to update the record or to delete it. If there is a video uploaded that is linked to the patient, it can also be viewed and accessed through here.

PSYCHOTHERAPY PORTAL DASHBOARD PATIENT RECORDS VIDEO DATABASE YOUR ACCOUNT

Patient Information

[Update Details](#) [Delete Record](#)

Full Name:	Jasmine	Erickson	Guardian's Title:	Mrs.
Gender:	Female		Guardian's Name:	Erica Erickson
Country:	USA		Relationship:	Parent
Age:	10		Guardian's Email:	erica.rickson@yahoo.com

Video ID	Video Name
----------	------------

1.4.3. Update Record

- A. Click 'Update Record' to update the information of this particular patient. Note that you would have to fill in all the information on this page even if they are not to be changed.
- B. Click the button at the bottom to finalize the changes and you will be redirected to this particular patient's record and the changes will be reflected.
- C. While at the update page, if you no longer want to proceed with updating, you can click 'Cancel' at the top right to be redirected back to this patient's page without changing anything.

The screenshot shows a web interface for a psychotherapy portal. At the top, there is a navigation bar with links: PSYCHOTHERAPY PORTAL, DASHBOARD, PATIENT RECORDS, VIDEO DATABASE, and YOUR ACCOUNT. Below this is a form titled 'Update Patient Record' with a 'Cancel' link in the top right corner. The form contains several input fields and dropdown menus: 'Full Name' (split into 'First Name' and 'Last Name'), 'Gender' (dropdown with 'Male' selected), 'Age in Years' (text input), 'Country' (text input), 'Title' (dropdown with 'Dr.' selected), 'Guardian's Name' (split into 'First Name' and 'Last Name'), 'Relationship' (dropdown with 'Parent' selected), and 'Email' (text input). A 'Submit' button is located at the bottom right of the form.

1.4.4. Delete Record

Click 'Delete Record' to delete this patient's record. After which you will be redirected to the patient records database with that particular record deleted. A warning, deletion of records cannot be undone.

The screenshot shows a header section titled 'Patient Information'. On the right side of the header, there are two links: 'Update Details' and 'Delete Record'. The 'Delete Record' link is circled in red, indicating it is the focus of the instruction.

1.4.5. Search

At the record database page, you are able to perform simple searches using the search bar. You can search using the patient's name, age or country and then pressing enter on your keyboard.

Search

The relevant records will then show. If there is no matching record, an empty records page will be shown as below.

PSYCHOTHERAPY PORTAL

DASHBOARD

PATIENT RECORDS

VIDEO DATABASE

YOUR ACCOUNT

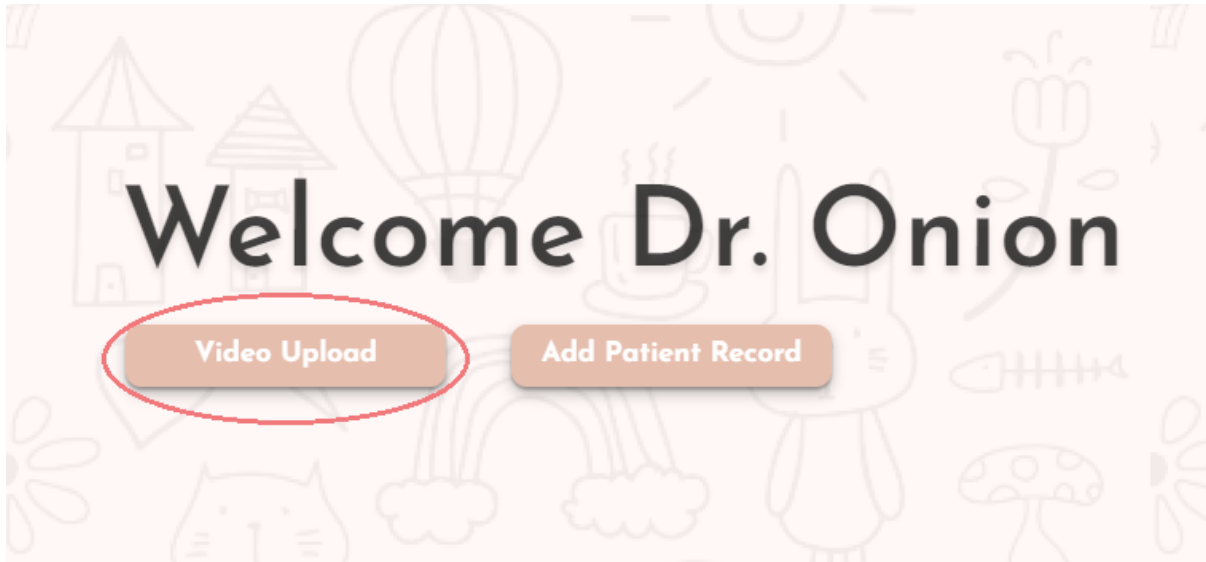
Search

[Add Record](#)

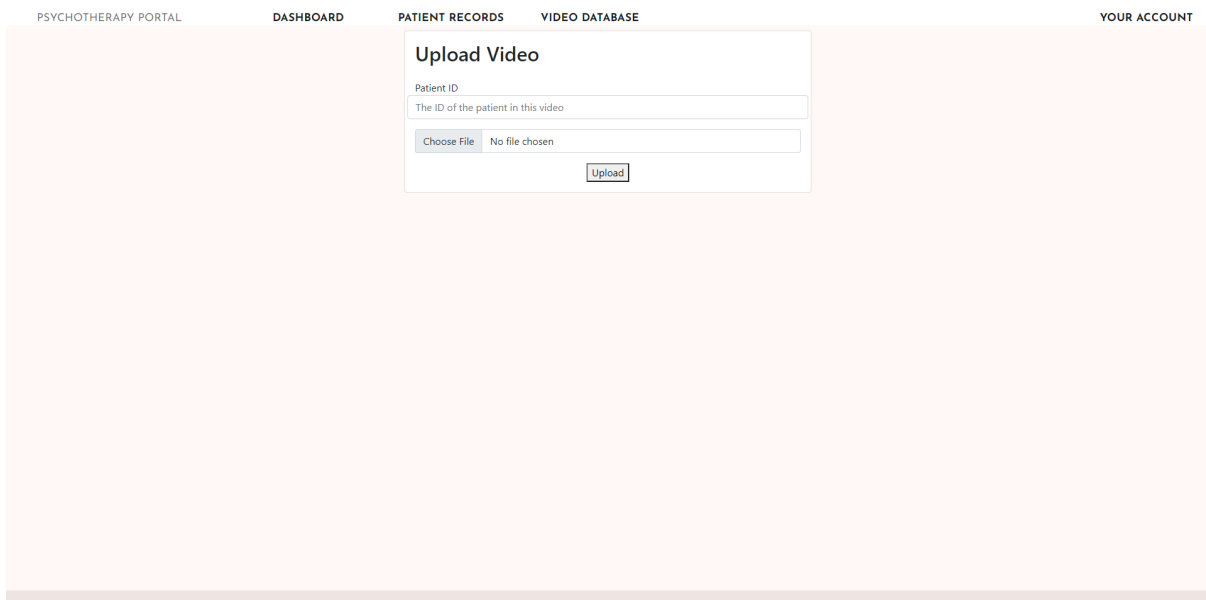
Patient ID	First Name	Last Name	Country
------------	------------	-----------	---------

1.5. Video Files Management and Use of Facial Expression Recognition Feature

From your dashboard you can upload a new psychiatry session video by clicking ‘Upload Video’.



1.5.1. Uploading a Video

A screenshot of the "Upload Video" form within a dashboard. The dashboard has a top navigation bar with links: "PSYCHOTHERAPY PORTAL", "DASHBOARD", "PATIENT RECORDS", "VIDEO DATABASE", and "YOUR ACCOUNT". The "Upload Video" form is a white box with a title "Upload Video". It contains a "Patient ID" label and a text input field with the placeholder "The ID of the patient in this video". Below the input field is a "Choose File" button and the text "No file chosen". At the bottom right of the form is an "Upload" button.

- A. At this page, you are first required to enter the patient ID number before uploading a video file.

- B. Upon pressing ‘Choose File’, a window will appear for you to select a file from your device. Please ensure you use a file type of a valid video format, otherwise the site will show you an error.
- C. Click ‘Upload’ after selecting a valid file.
- D. If the file is accepted, the video will be uploaded and you will be prompted to be redirected to the video database page on the link on the green notification that will appear at the top.

The screenshot displays the 'PSYCHOTHERAPY PORTAL' interface. At the top, navigation links include 'DASHBOARD', 'PATIENT RECORDS', 'VIDEO DATABASE', and 'YOUR ACCOUNT'. A green notification bar at the top states: 'Video halfmeternoisybackgroundhappy.mp4 has been successfully uploaded! Click [here to go to the Video Database](#)'. Below this, the 'Upload Video' form is visible, featuring a 'Patient ID' field with the placeholder text 'The ID of the patient in this video'. A file selection area shows a 'Choose File' button and the text 'No file chosen'. An 'Upload' button is located at the bottom right of the form.

1.5.2. Video Database

From here you can view all videos you have uploaded along with some of its information such as the date and time uploaded, video ID, linked patient ID and the filename. You can also play the video from this page. Note that you can only view videos that you have uploaded, you cannot view videos from other users.

PSYCHOTHERAPY PORTAL

DASHBOARD

PATIENT RECORDS

VIDEO DATABASE

YOUR ACCOUNT

1.00

Video

0:00

ID

File Name

Date Uploaded

Patient ID

1

halfmeternoisybackgroundhappy.mp4

15/10/2021 04:28:26

1

Processed

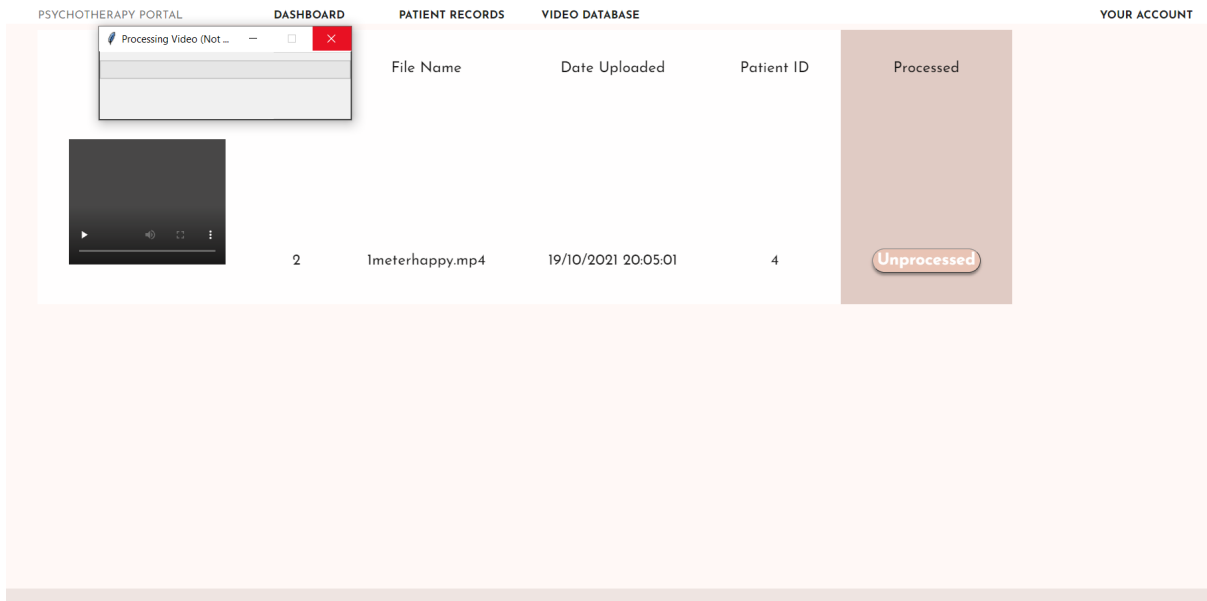
Processed

1.5.3. Processing a Video

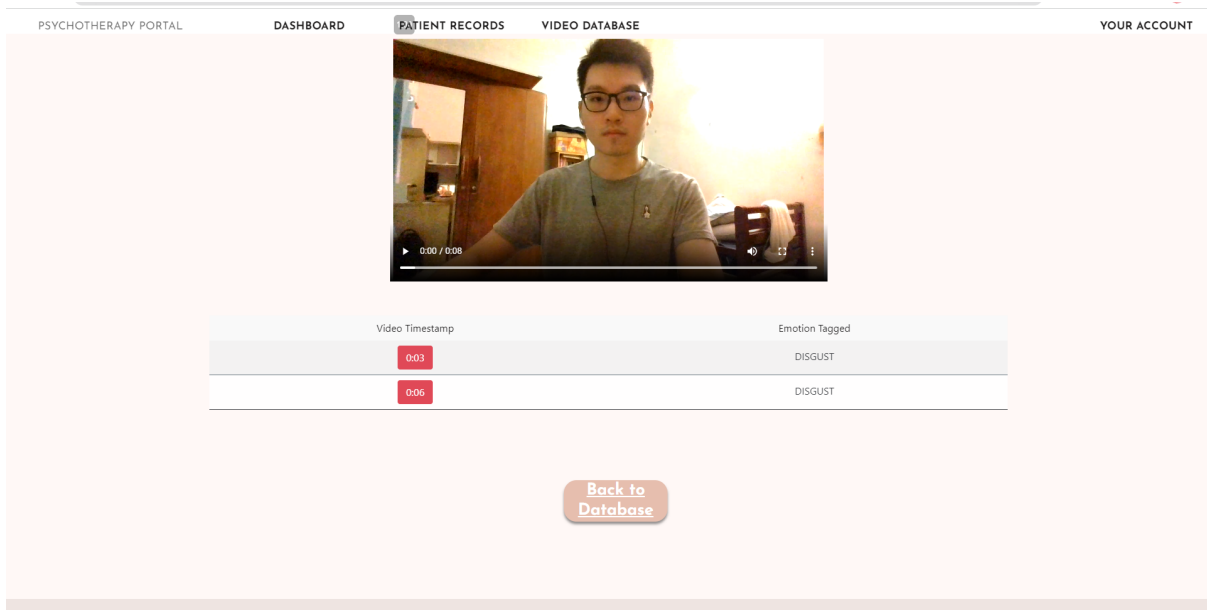
On this page you will notice that there will be a button stating ‘Unprocessed’ at the most right of the video row.

	3	halfmeternoisybackgroundhappy.mp4	21/10/2021 06:02:43	1	Unprocessed
---	---	-----------------------------------	---------------------	---	-------------

This indicates that the video has not been processed through our facial recognition feature. To process it, click on that button and a progress bar will pop up to indicate how long it will take.



Upon completion, you will be redirected to the video page where a list of emotions detected from the video will be displayed. Clicking on the timestamps will bring the video to play from the time indicated. From here you can go back to the database at the bottom.



On the database page, video is also now indicated as 'Processed' and clicking that button will bring you back to the video page shown above.

Video	ID	File Name	Date Uploaded	Patient ID	Processed
	1	halfmeternoisybackgroundhappy.mp4	15/10/2021 04:28:26	1	<button>Processed</button>

1.5.4. Link from Patient Record

The video that you have uploaded will also be shown on the corresponding patient's record page and can be accessed through here as well via clicking the filename or ID of the video

PSYCHOTHERAPY PORTAL
DASHBOARD
PATIENT RECORDS
VIDEO DATABASE
YOUR ACCOUNT

Patient Information

[Update Details](#)
[Delete Record](#)

Full Name:	Sally	Sine	Guardian's Title:	Mrs.
Gender:	Female		Guardian's Name:	Jelly Sine
Country:	Singapore		Relationship:	Parent
Age:	10		Guardian's Email:	jelly@mail.com

Video ID	Video Name
1	halfmeternoisybackgroundhappy.mp4
2	1meterhappy.mp4

2. Technical Guide

2.1. Setting Up

2.1.1. Installation of Python, Flask and related dependencies

- A. To be able to configure the web application, you must be able to run it from your system. To be able to do so you must first install Python from: <https://www.python.org/downloads/>
- B. Then on your command prompt on your operating system or virtual environment, navigate to **AIPsychotherapyPortal/FYP/** and then type in the following command: **pip install -r requirements.txt** and then press enter, all needed dependencies will be installed.

```
AIPsychotherapyPortal-main\FYP>pip install -r requirements.txt
```

2.1.2. Creation of Database

If site.db is missing in your download or you would like a fresh file, you can recreate the needed database. Run python from your command prompt then enter: **from FYP import db**

```
>>> from FYP import db
```

and then: **db.create_all()**

```
>>> db.create_all()
```

This will create all tables listed in models.py into your site.db file

2.1.3. Admin Email Account

To be able to use the 'Password Reset' Feature, you must own a SMTP email account. Using a code editor, replace your details in **__init__.py** at **app.config['EMAIL_HOST_USER']**, **app.config['EMAIL_HOST_PASSWORD']** and **s.login()**.

If the SMTP account you own is not hosted on google, you also need to change `app.config['MAIL_SERVER']`.

```
app.config['MAIL_SERVER'] = 'smtp.gmail.com'
app.config['MAIL_PORT'] = 587
app.config['MAIL_USE_TLS'] = True
app.config['EMAIL_HOST_USER'] = 'psychportal3162@gmail.com'
app.config['EMAIL_HOST_PASSWORD'] = 'Portal3162'
mail = Mail(app)

s = smtplib.SMTP('smtp.gmail.com', 587)
s.starttls()
s.login('psychportal3162@gmail.com', 'Portal3162')
```

You would also need to change, in `routes.py`, the `sender` variable in `msg = Message()`

```
def sendresetemail(user):
    token = user.get_reset_token()
    msg = Message('Password Reset Request', sender='psychportal3162@gmail.com', recipients=[user.email])
    msg.body = f'''If you have requested to reset your password, please click the following link:
    {url_for('resettoken', token=token, _external=True)}
    If you did not request this, please ignore this email.
    Thank you.'''
    mail.send(msg)
```

2.2. Running the Web Application

To run your application locally, on your command prompt on your operating system or virtual environment, navigate to `AIPsychotherapyPortal/FYP/` and then type in the following command: `set FLASK_APP=FYP:newapp`

```
\AIPsychotherapyPortal-main\FYP>set FLASK_APP=FYP:newapp
```

and then the command: `flask run`

```
\AIPsychotherapyPortal-main\FYP>flask run
```

The app will then run as follows,

```
* Serving Flask app 'FYP:newapp' (lazy loading)
* Environment: production
  WARNING: This is a development server. Do not use it in a production deployment.
  Use a production WSGI server instead.
* Debug mode: off
c:\users\...appdata\local\programs\python\python39\lib\site-packages\flask_sqlalchemy\__init__.py:872: FSADeprecationWarning: SQLAlchemy_TRACK_MODIFICATIONS adds significant overhead and will be disabled by default in the future.
  It is to True or False to suppress this warning.
warnings.warn(FSADeprecationWarning(
2021-10-21 06:40:20.756882: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic library 'cudart64_110.dll'; dlerror: cudart64_110.dll not found
2021-10-21 06:40:20.757933: I tensorflow/stream_executor/cuda/cudart_stub.cc:29] Ignore above cudart dlerror if you do not have a GPU set up on your machine.
* Running on http://127.0.0.1:5000/ (Press CTRL+C to quit)
```

You can copy the local host address, `http://127.0.0.1:5000/` and run it from your web browser. To stop the application running, use `CTRL+C` on your keyboard.

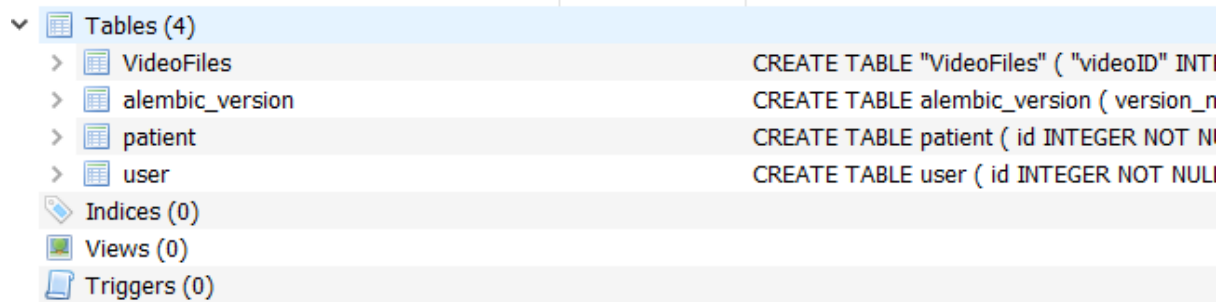
2.3. Managing the database

2.3.1. Using SQLite - View and Manage Database Entries

For a convenient way to manage records in your database, you can use SQLite. You may download the latest version from here:

<https://www.sqlite.org/index.html>

After installing SQLite, you can use 'Open Database' to open site.db, and you should be able to see all created tables.



Using 'Browse Data', you can look at the committed entries in the database:











Database Structure

Browse Data

Edit Pragma

Execute SQL

Table: patient



Filter in any column

	id	firstname	lastname	gender	country	age	therapyid	guardiantitle	guardianfirstname	guardianlastname
	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter	Filter
1	1	Sally	Sine	Female	Singapore	10	1	Mrs.	Jelly	Silence
2	2	Gil	Bert	Male	Eorzea	12	1	Dr.	Shil	Beast
3	3	Apple	Sam	Male	USA	10	3	Dr.	Ringo	Sadness
4	4	Nanako	Koko	Female	NanaLand	9	4	Mr.	Papako	Kid

Using SQLite, you are also able to add, edit or delete entries. For more information, you may check the documentation for SQLite here:

<https://www.sqlite.org/docs.html>

2.3.2. Using Alembic - Perform Database Schema Changes

SQLite does not support certain database schema changes, hence it is recommended to use Alembic to perform database modifications without deletion of existing records or having to recreate the tables. You may first make any modifications you need to the listed database classes in

models.py, then on your command prompt on your operating system or virtual environment, navigate to **AIPsychotherapyPortal/FYP/** and then type in the following command: **set FLASK_APP=FYP:newapp**

```
\AIPsychotherapyPortal-main\FYP>set FLASK_APP=FYP:newapp
```

you can then create a revision script using:

alembic revision -m “revision name” --directory FYP/migrations

any changes will be automatically detected in this python script file. You can also modify it before running it. Then use:

alembic upgrade head --directory FYP/migrations

to commit the revision. You can also check the current version via:

flask db current --directory FYP/migrations

For more information you may check the documentation for Alembic here:

<https://alembic.sqlalchemy.org/en/latest/>