AI HEALTHCARE APP DOCUMENTATION

Amazon Lex:

- Importing a Bot

To import our lex chatbot bot

1. 1Sign in to the AWS Management Console, and open the Amazon Lex console at https://console.aws.amazon.com/lex/.
2. Choose Bots, then choose the bot to import. To import a new bot, skip this step.
3. For Actions, choose Import.
4. For Import Bot, choose the .zip archive that contains the JSON file that contains the bot to import. If you want to see merge conflicts before merging, choose Notify me of merge conflicts. If you turn off conflict checking, the `$LATEST` version of all of the resources used by the bot are overwritten.
5. Choose Import. If you have chosen to be notified of merge conflicts and there are conflicts, a dialog appears that lists them. To overwrite the `$LATEST` version of all conflicting resources, choose Overwrite and continue. To stop the import, choose Cancel.

You can now test the bot in your account.

Reference link: https://docs.aws.amazon.com/lex/latest/dg/import-from-lex.html

- Do the following to publish a version of a bot you created:

1. In the Amazon Lex console, choose one of the bots you created.
   Verify that the console shows the $LATEST as the bot version next to the bot name.
2. Choose Publish.
3. On the Publish *botname* wizard, specify the alias BETA, and then choose Publish.
4. Verify that the Amazon Lex console shows the new version next to the bot name.

We made use of Boto3 is the Python version of the Amazon Web Services (AWS) Software Development Kit (SDK), which allows us to create software that utilises AWS services.

To utilize as code hooks for Amazon Lex bot, we constructed the AWS Lambda function. In your intent setting, you can specify Lambda functions to do initialization and validation, fulfillment, or both.

Flutter App:

- Make sure you have Flutter Framework installed on your device along with an IDE (VSCode/Android Studio would be preferred).
  To install flutter visit : https://docs.flutter.dev/get-started/install

- Downloading the libraries and launching the app
  1. Clone the github repository that contains the flutter files.
     Use the command :
     "***git clone https://github.com/HYFRAK/healthcare_bot.git***"
  2. Change the directory to the folder containing the cloned directory.
  3. Run the command "***flutter pub get***" to download the required libraries specified in the pubspec.yaml file.
  4. Launch the app on an android emulator using the Run option, depending upon your IDE ("**Run without debugging**" in VSCode).

- Connecting the ngrok api tunnel to the flutter app
  1. Launch your IDE and open the chatbot_screen.dart in the lib/screen folder.
  2. On line 25 edit the ngrok tunnel id in the string parameter of "url" in the following format:

     ```
     var url = Uri.parse('<paste your ngrok tunnel link here>/chat');
     Eg : var url = Uri.parse('http://c3a5-34-80-69-175.ngrok.io/chat');
     ```

  3. Launch the app on an android emulator using the Run option depending upon your IDE ("**Run without debugging**" in VSCode).

- Building the apk file
  1. To build an apk file that can be transferred to other android devices, use the ***"flutter build apk --split-per-abi"*** command.
  2. The generated apk would be saved in the "**build\app\outputs\flutter-apk**" directory and the file would be named **"app.apk".**

API :

Clone the github repository that contains the flutter files.

Use the command :

"***git clone https://github.com/HYFRAK/healthcare_bot.git***"

In the api.py file make the following changes :

On line no. 110 and 111 Enter the access id and secret key obtained from AWS LEX

On line no. 119 enter the path of the disease classification model. Currently the model is saved in models folder and a path for the same has been given. If you intend to change the location please update the path .
The disease_model.h5 file is a keras based neural network for disease prediction, it can be accessed using keras.load_model function.

These files are located in the models folder:
"sym_dis_map_base.json", "Symptom_severity.csv", "symptom_precaution.csv" .
if you intend to change the path 35, 39 and 52 respectively.

a. The sym_dis_map_base.json is a json map file that has the synonyms of the diseases, symptoms, words, split-phrases and terms for correlation and mapping.

b. The Symptom_severity.csv file contains symptoms and their corresponding severities.

Place "symp.csv" and "dis.csv" files in the any directory and change the path to these files on lines 150 and 152 .currently they are placed in models folder
a. The symp.csv file is a dataframe that contains a compressed one-line formatted input template.

b. The dis.csv file is a dataframe that contains formatted disease variables.

For Running The API :

If you are running the file api.py on the local system then it can be run directly.

If you are same script on colab or other cloud linux machine then follow the steps mentioned below :

1. Use these command for downloading ngrok tunnel

```
!wget https://bin.equinox.io/c/4VmDzA7iaHb/ngrok-stable-linux-amd64.zip
!unzip -o ngrok-stable-linux-amd64.zip
```

2. Create a new account on ngrok and then you will receive a authentication token and run the following command :

```
!./ngrok authtoken <Authentication token>
```

3. Install the flask-ngrok library and comment out line no. 3 and 107.

4. Run the script and then you will get a ngrok tunnel link , Paste this link in the flutter code .