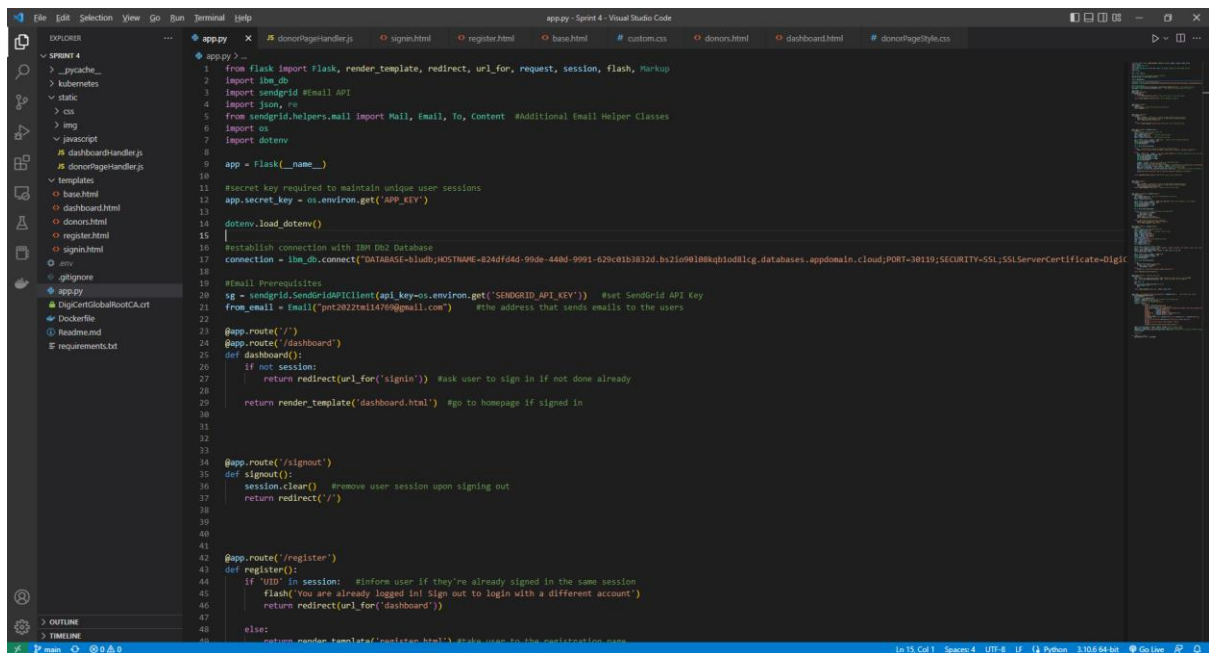


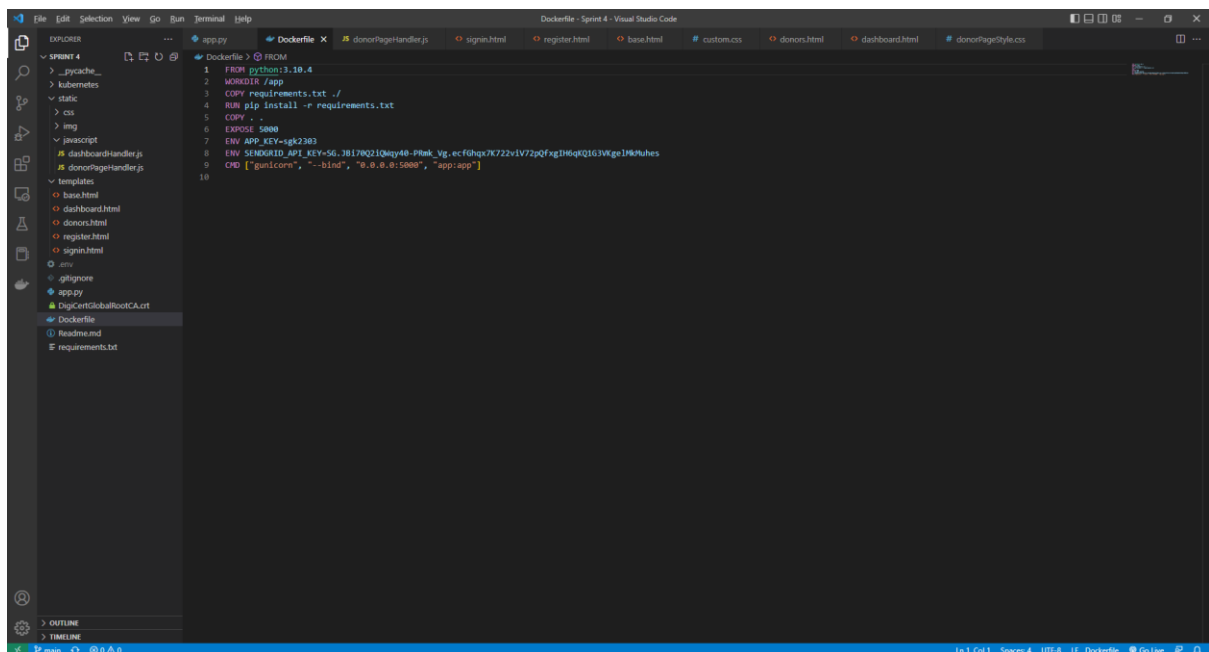
Containerize the App

1. Create flask app



```
1 from flask import Flask, render_template, redirect, url_for, request, session, flash, Markup
2 import ibm_db
3 import sendgrid #Email API
4 import json, re
5 from sendgrid.helpers.mail import Mail, Email, To, Content #Additional Email Helper Classes
6 import os
7 import dotenv
8
9 app = Flask(__name__)
10
11 #secret key required to maintain unique user sessions
12 app.secret_key = os.environ.get('APP_KEY')
13
14 dotenv.load_dotenv()
15
16 #Establish connection with IBM DB2 Database
17 connection = ibm_db.connect("DATABASE=bludb;HOSTNAME=424fd4d-9bde-448d-9991-629c01b3832d.b21o90188qhdllcg.databases.appdomain.cloud;PORT=30119;SECURITY=SSL;SERVERCERTIFICATE=DigitalSignature")
18
19 #Email Prerequisites
20 sg = sendgrid.SendGridAPIClient(api_key=os.environ.get('SENDGRID_API_KEY')) #Set SendGrid API Key
21 from_email = Email("pnt2022tmi14769@gmail.com") #the address that sends emails to the users
22
23 @app.route("/")
24 @app.route("/dashboard")
25 def dashboard():
26     if not session:
27         return redirect(url_for('signin')) #ask user to sign in if not done already
28     return render_template("dashboard.html") #go to homepage if signed in
29
30 @app.route("/signin")
31 def signin():
32     if session:
33         return redirect(url_for('dashboard'))
34     return render_template("signin.html")
35
36 @app.route("/signup")
37 def signup():
38     if session:
39         return redirect(url_for('dashboard'))
40     return render_template("signup.html")
41
42 @app.route("/register")
43 def register():
44     if 'UID' in session: #Inform user if they're already signed in the same session
45         flash("You are already logged in! Sign out to login with a different account")
46         return redirect(url_for('dashboard'))
47     else:
48         return render_template("register.html")
```

2. Insert Dockerfile in the flask project

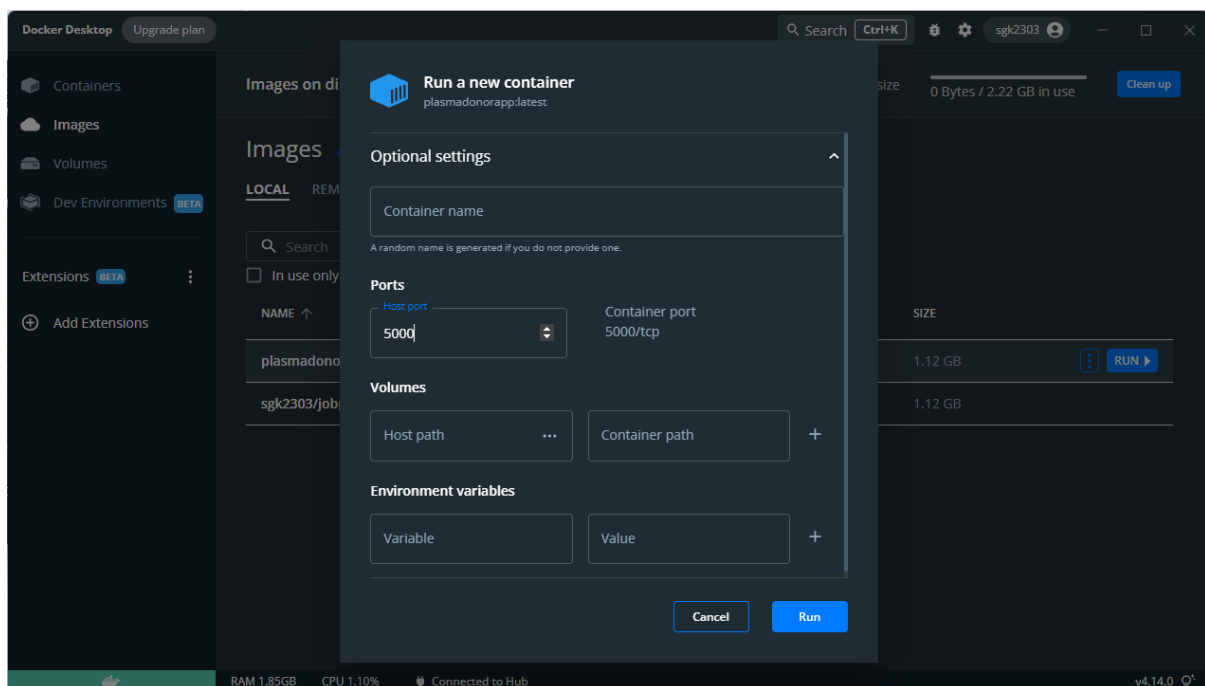


```
1 FROM python:3.10.4
2 WORKDIR /app
3 COPY requirements.txt ./
4 RUN pip install -r requirements.txt
5 COPY . .
6 EXPOSE 5000
7 ENV APP_KEY=sgk2303
8 ENV SENDGRID_API_KEY=SG.3817WQ21Q0y48-P0mk_Vg.ecf0hpc7K722v1V72yQfXgD6QK163VHge1M6Nuhes
9 CMD ["gunicorn", "--bind", "0.0.0.0:5000", "app:app"]
```

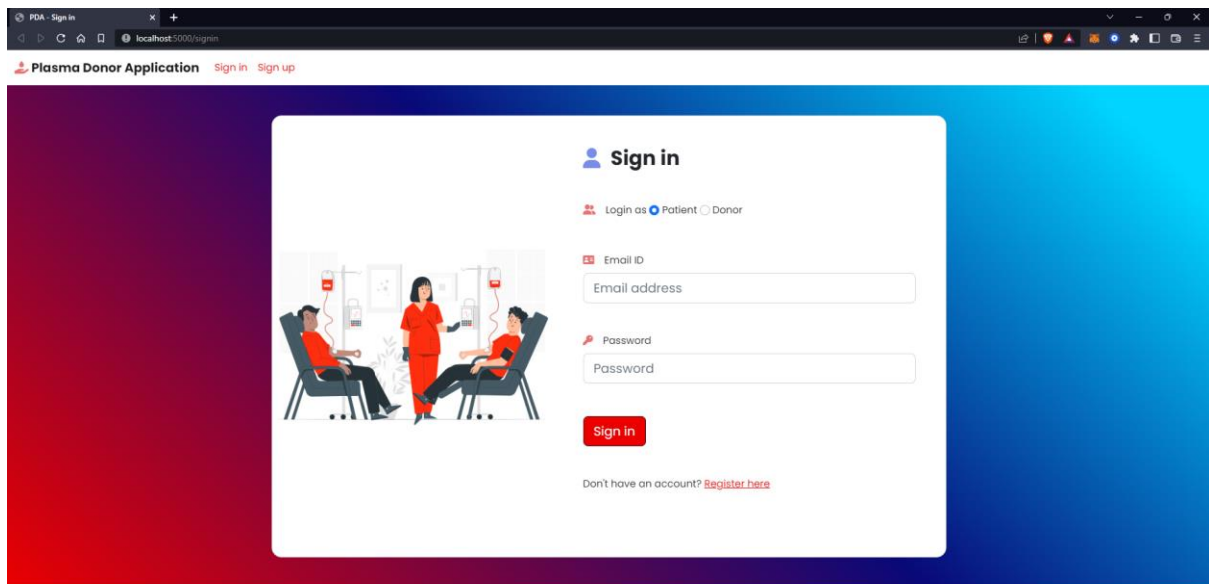
3. Build the docker image

```
C:\Windows\System32\cmd.exe
E:\KCT\SEM 7\IBM\IBM-Project-9445-1659007266\Final Deliverables\Final code>docker build -t plasmadonorapp .
[+] Building 3.0s (3/4)
=> [internal] load build definition from Dockerfile
=> => transferring dockerfile: 32B 0.0s
=> [internal] load .dockerignore 0.0s
[+] Building 3.4s (11/11) FINISHED
=> [internal] load build definition from Dockerfile 0.0s
=> => transferring dockerfile: 32B 0.0s
=> [internal] load .dockerignore 0.0s
=> => transferring context: 2B 0.0s
=> [internal] load metadata for docker.io/library/python:3.10.4 3.2s
=> [auth] library/python:pull token for registry-1.docker.io 0.0s
=> [1/5] FROM docker.io/library/python:3.10.4@sha256:cddebe04ec7846e28870cf8624b46313a22e6407b51ced3776588784caa 0.0s
=> [internal] load build context 0.0s
=> => transferring context: 9.80kB 0.0s
=> CACHED [2/5] WORKDIR /app 0.0s
=> CACHED [3/5] COPY requirements.txt ./ 0.0s
=> CACHED [4/5] RUN pip install -r requirements.txt 0.0s
=> CACHED [5/5] COPY . . 0.0s
=> exporting to image 0.0s
=> => exporting layers 0.0s
=> => writing image sha256:7cc1042a9db056d33c4cb997711c5ab69bf659c4d8a8b5527fdf0402447f9827 0.0s
=> => naming to docker.io/library/plasmadonorapp 0.0s
E:\KCT\SEM 7\IBM\IBM-Project-9445-1659007266\Final Deliverables\Final code>
```

4. Run the docker image we just created.



5. Test it



The screenshot shows a web browser window with the address bar displaying 'localhost:5000/signin'. The page title is 'Plasma Donor Application' with links for 'Sign in' and 'Sign up'. The main content area has a blue and red gradient background. In the center is a white card titled 'Sign in' with a user icon. Below the title, there is a radio button selection for 'Login as Patient' (selected) or 'Donor'. There are two input fields: 'Email ID' with a placeholder 'Email address' and 'Password' with a placeholder 'Password'. A red 'Sign in' button is below the fields. At the bottom of the card, it says 'Don't have an account? [Register here](#)'. To the left of the input fields is an illustration of a medical professional in a red uniform attending to two patients in chairs, each with a blood bag hanging from a stand.