# **Breast cancer classification:** Final project for FSE4AI 2024

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# Problem and solution

The medical professionals need a simple assistant tool to analyze the data faster and more accurately; give **preliminary diagnosis** for a patient.

We provide just that – a **easy-to-install** and run software with a friendly **GUI**

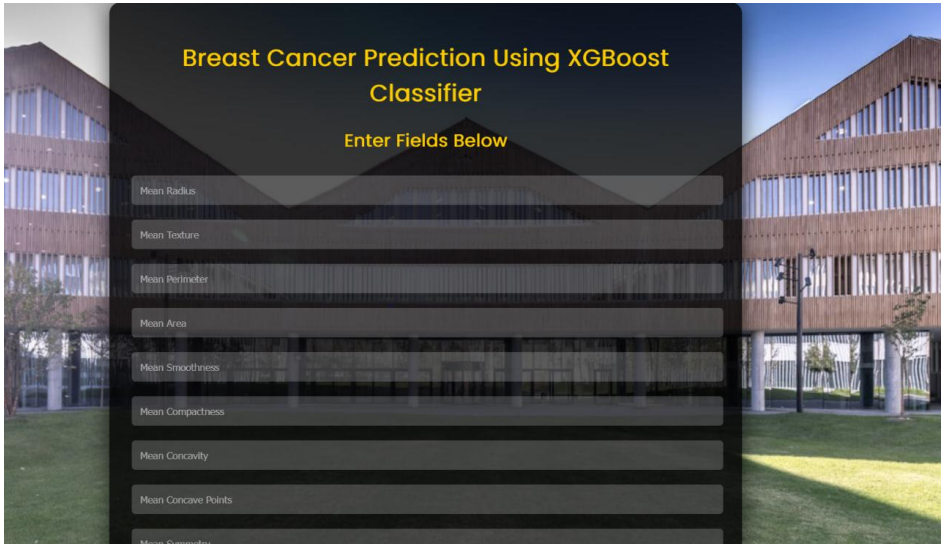
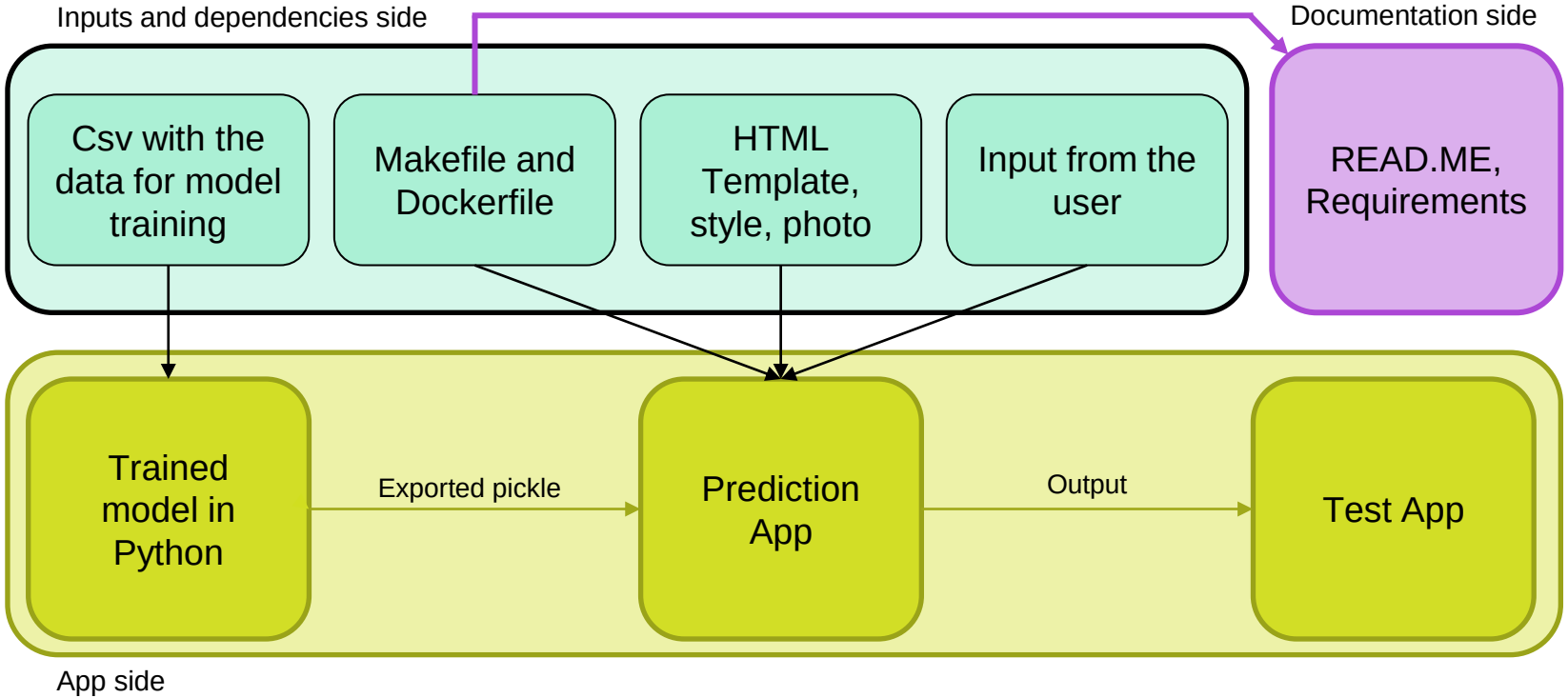



**Figure 1. The user interface (Work-in-progress)**

# Architecture



# Dockerfile and Makefile

```
# Use an official Python runtime as a parent image
FROM python:3.8.5-slim

# Set the working directory in the container
WORKDIR /usr/src/app

# Copy the current directory contents into the container at /usr/src/app
COPY . .

# Install any needed packages specified in requirements.txt
RUN pip install --no-cache-dir -r requirements.txt

# Run app.py when the container launches
CMD ["python", "./app.py"]
```

```
# Define variables
IMAGE_NAME = my-python-app
CONTAINER_NAME = my-python-container

# Build the Docker image
build:
	docker build -t $(IMAGE_NAME) .

# Run the Docker container
run:
	docker run --name $(CONTAINER_NAME) -d $(IMAGE_NAME)

# Stop the running container
stop:
	docker stop $(CONTAINER_NAME)

# Remove the stopped container
rm:
	docker rm $(CONTAINER_NAME)

# Clean up the image and container
clean: stop rm
	docker rmi $(IMAGE_NAME)

# Remove all stopped containers and unused images
prune:
	docker system prune -f

.PHONY: build run stop rm clean prune
```

# Setting up and running the app

1. Create a directory: *mkdir breast_cancer_classification*
2. Change directory: *cd breast_cancer_classification*
3. Clone the repo: *git clone https://github.com/Addisu-Amare/fse4ai_team4_project*
4. Navigate to the project library: *cd fse4ai_team4_project*
5. Build the Docker Image: *docker build -t breast_cancer .*
6. Run the container: *docker run breast_cancer*

# Testing and demonstation

1. *Test the loading of home page*
2. *Test the valid input*
3. *Test the invalid input*

Link to the demonstration clip

# Thx

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