HX10S - Hypertension monitoring specialists

Team 2:
Bertoldi Vasco
Caridi Irene
De Carlo Federico
Facchini Elisa
Farina Matteo
Lile Aurora

Course: Medical Informatics
Academic year: 2023/2024

WHAT IS HYPERTENSION?

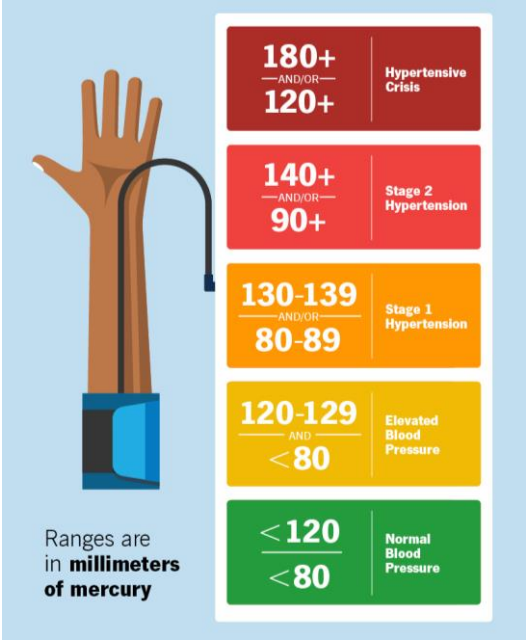
Definition: Hypertension is a chronic medical condition in which the force of the blood against the artery walls is elevated.

In particular, it is characterised by a systolic blood pressure (BP) of 140mmHg or higher, and a diastolic blood pressure of 90 mmHg or higher.

Classification:

- Pre-hypertension
- Stage 1 Hypertension
- Stage 2 Hypertension

Notably, systolic BP is often considered more significant than diastolic BP in determining cardiovascular risk.



HOME MONITORING SYSTEM FOR HYPERTENSION – KEY BENEFITS

Comprehensive Monitoring: allows at-home tracking and in-hospital follow-up of various biological parameters , improving the management of hypertensive patients.

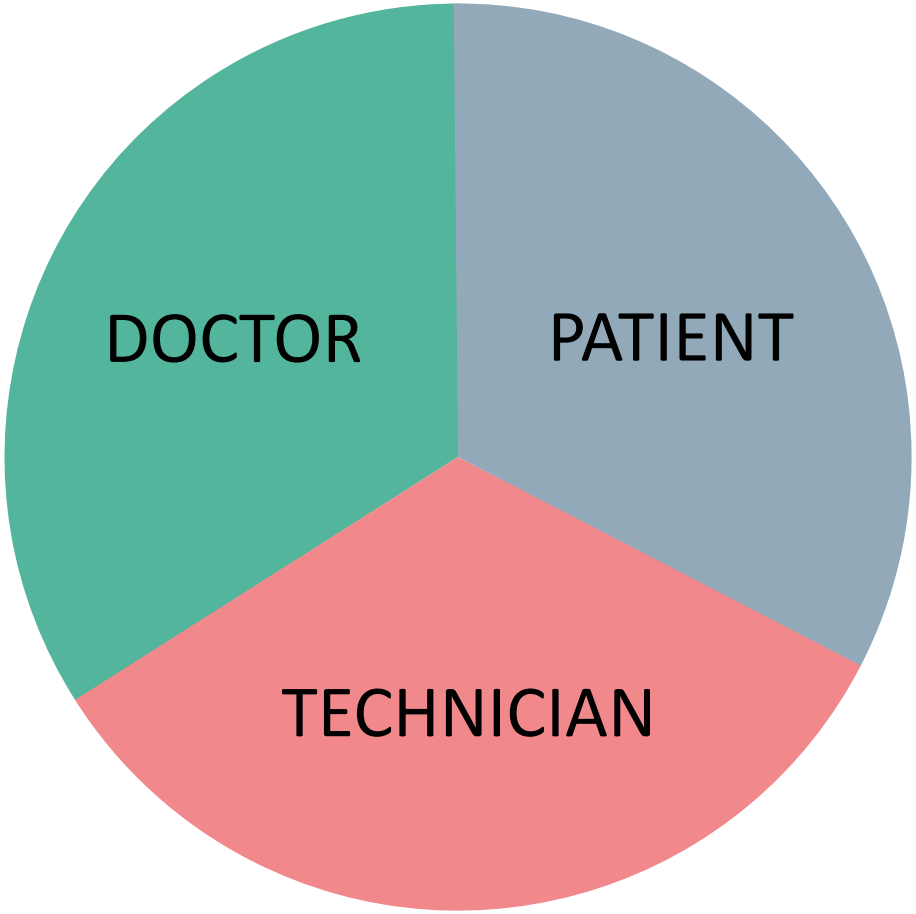
Prevention and Risk Reduction: effective monitoring can prevent potentially lethal events, such as strokes, and reduce complications associated with hypertension.

Patient Empowerment: enhances patient involvement in their care, facilitating follow-ups and improving quality of life.

Data Integration: integrates with electronic health records (EHRs), allowing healthcare providers to access up-to-date patient information for better decision-making.

Early Detection: facilitates early detection of abnormal blood pressure patterns, enabling timely medical intervention.

OUR SYSTEM



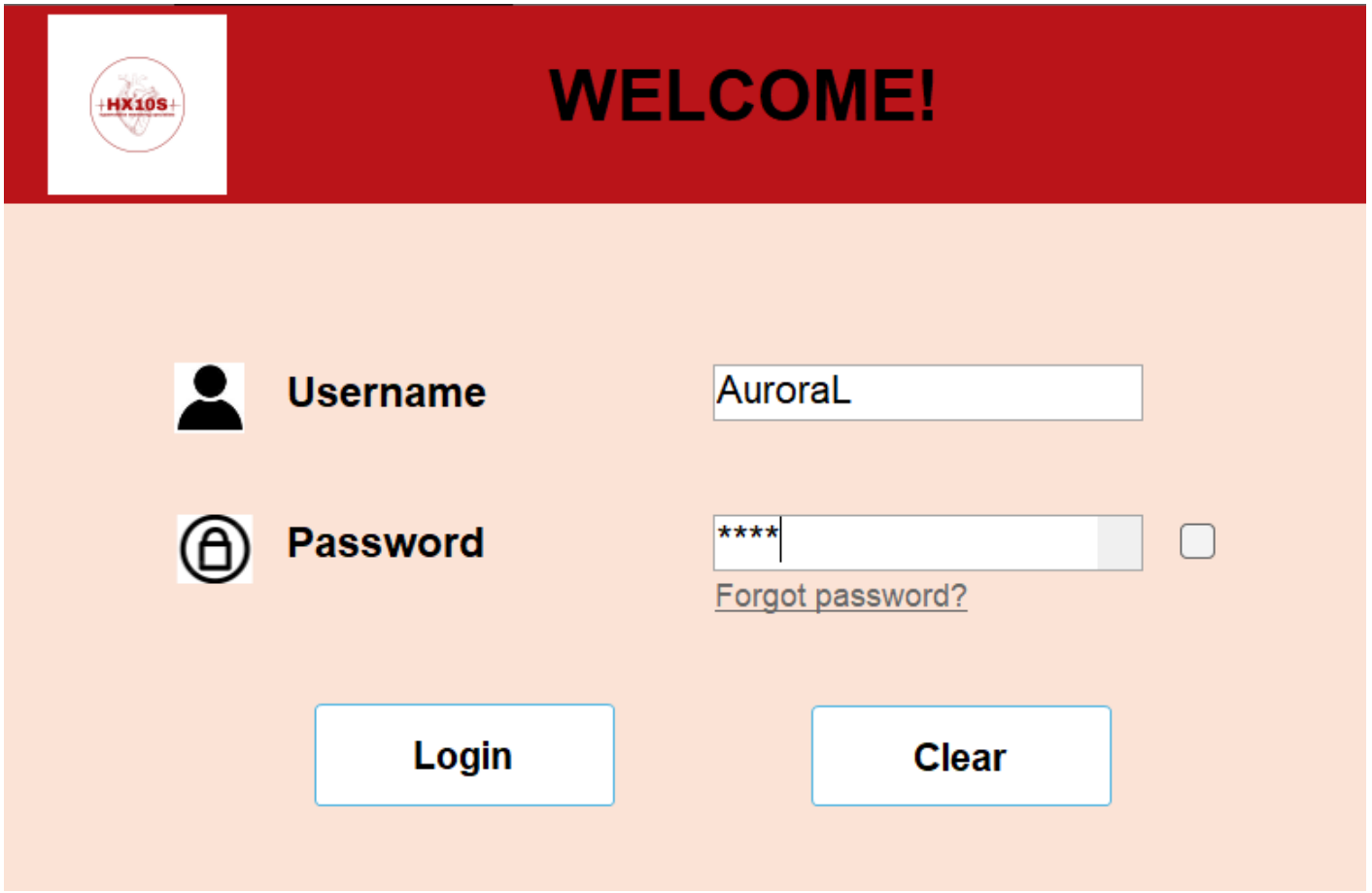
HX10S
hypertension monitoring specialists

WHO IS USING THE PLATFORM?

- Patient
- Doctor
- Technician

LOGIN

PATIENT



Patients will receive their login credentials from the doctor during their first medical visit.

HOMEPAGE

PATIENT

HOME PAGE

Daily measurement

Educational program

Request an appointment

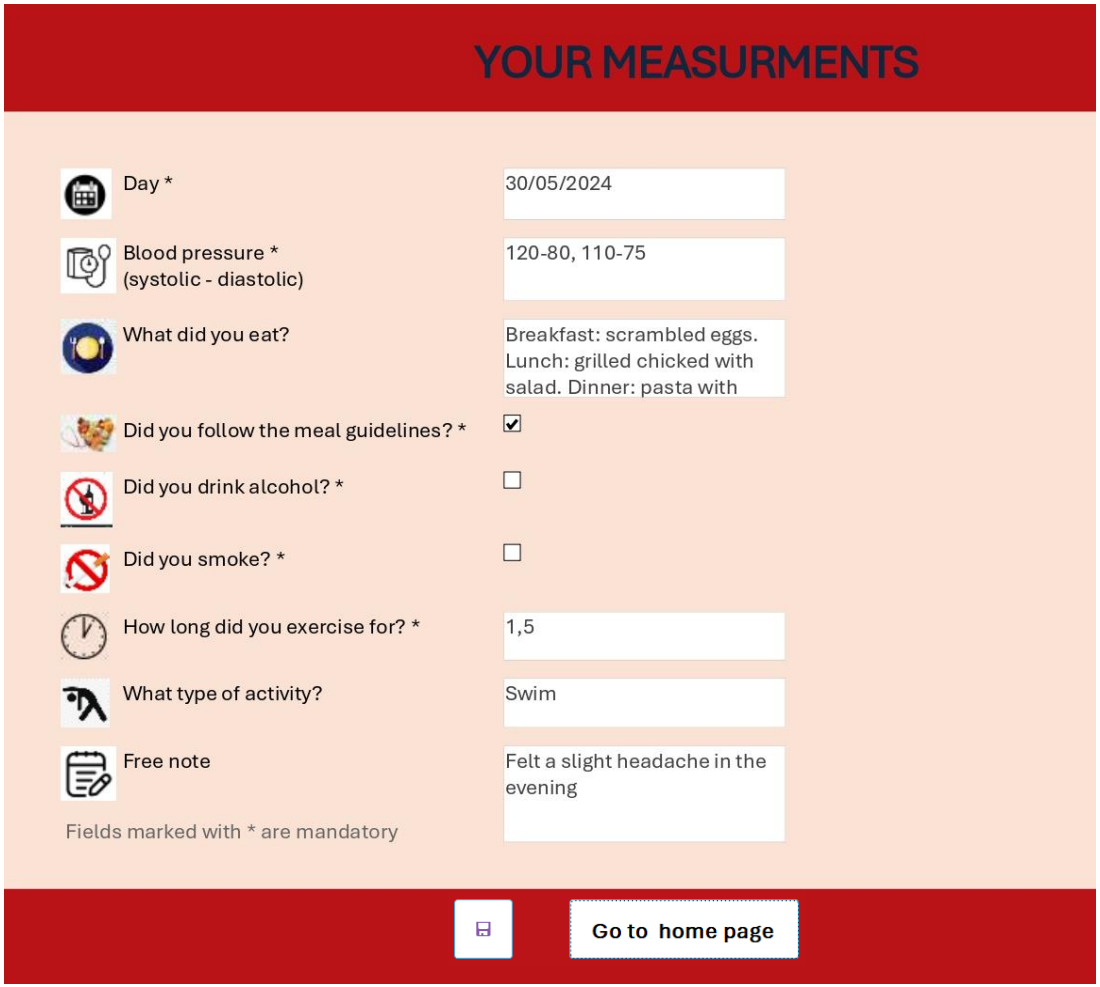
See your treatment

View general info

Any problem?

DAILY MEASUREMENT

PATIENT



Parameter selection:
most relevant for hypertension monitoring

Devices used:
sphygmomanometer, smartwatch

Data input format

APPOINTMENT

PATIENT

APPOINTMENT

Select a doctor: Federico De Carlo

Select an appointment: 21/06/2024, 9:30

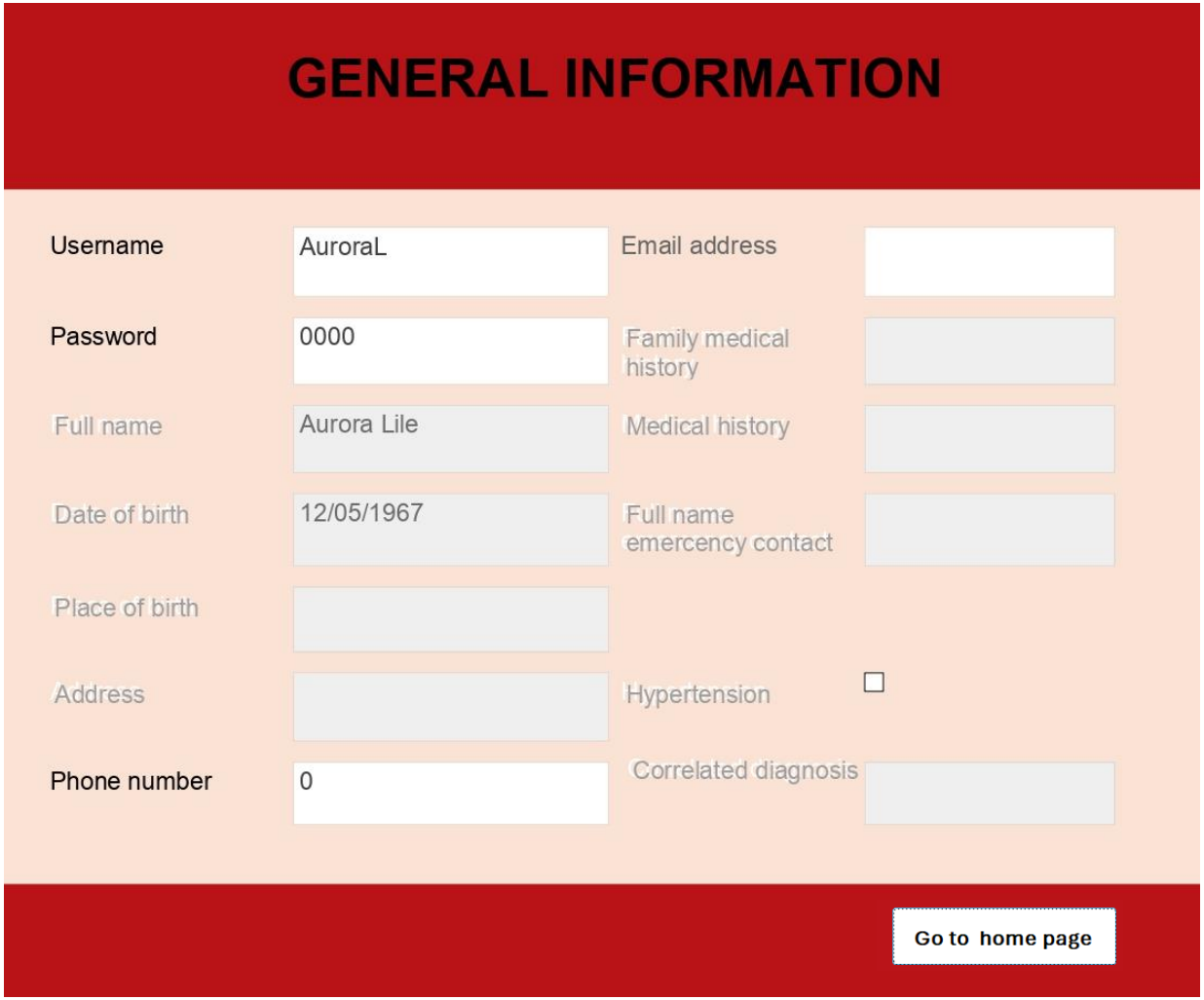
Write the reason: Medication refill

Request the appointment

Go to home page

GENERAL INFORMATION

PATIENT



EDUCATIONAL PROGRAM

PATIENT

GUIDELINE DETAILS

Title	Blood Pressure Monitoring
Description	Regularly measure your blood pressure and keep a diary to track your readings.

Show Video

SEE TREATMENT

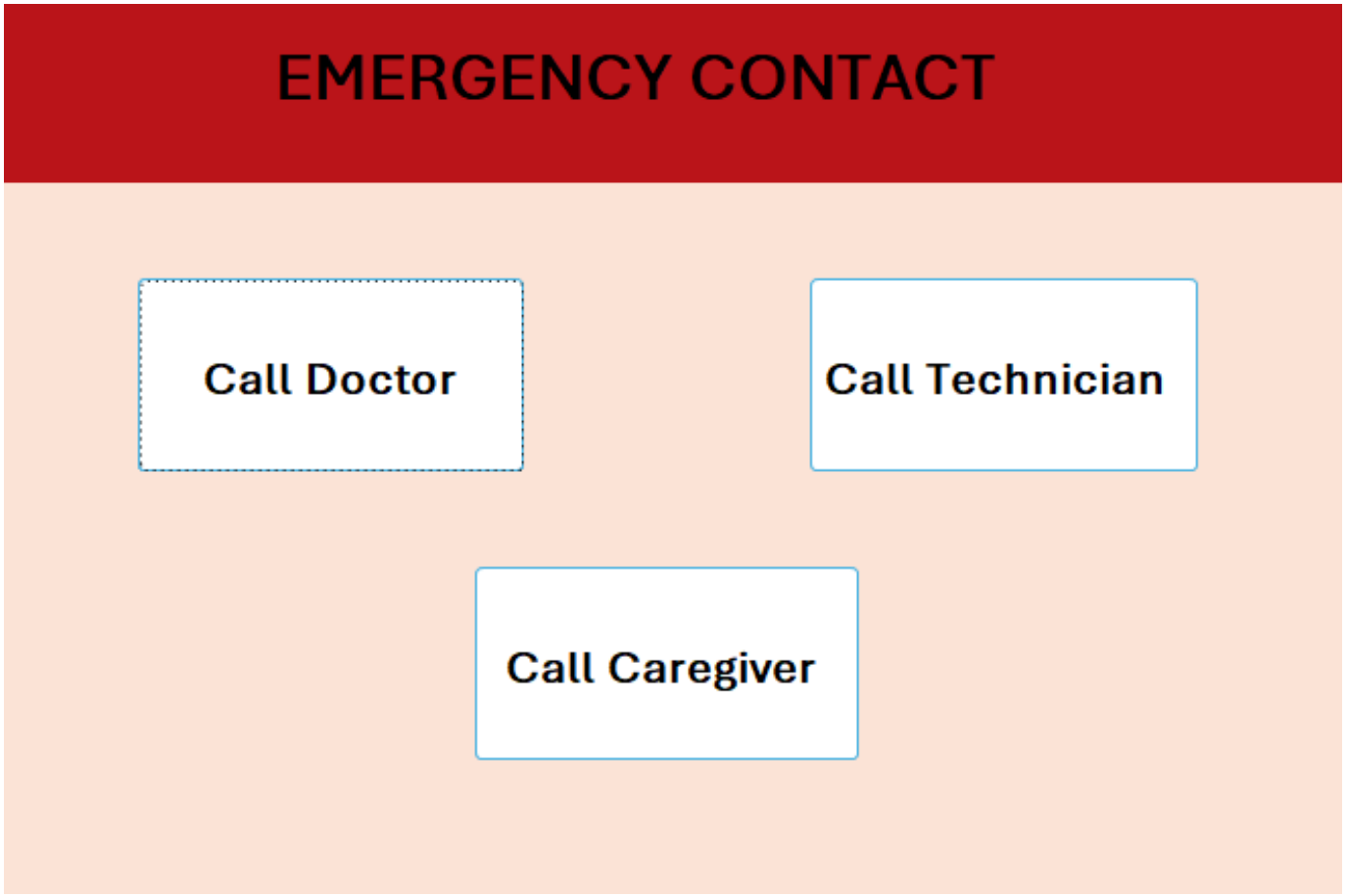
PATIENT

TREATMENT

Select treatment	Initial Irene
	Check treat
Start treatment	06/05/2024
End treatment	27/05/2024
Select drug	1
	See drug
Start intake	21/05/2024
End intake	23/05/2024
Daily quantity	1

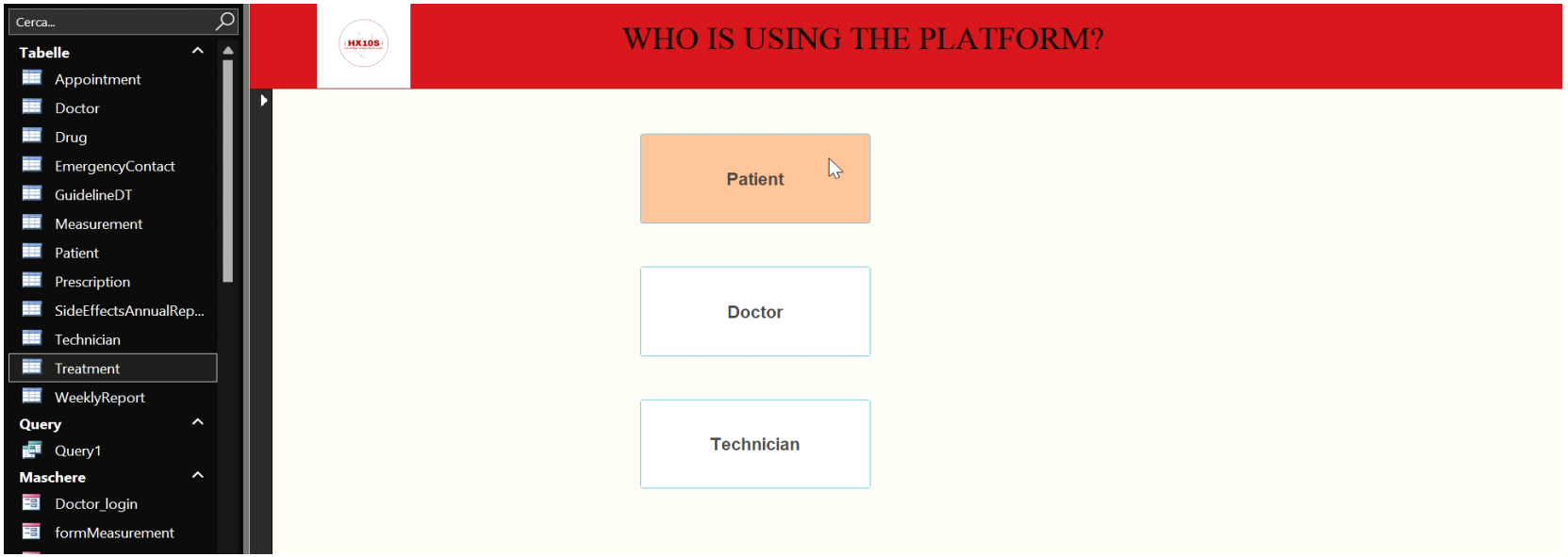
PROBLEMS

PATIENT



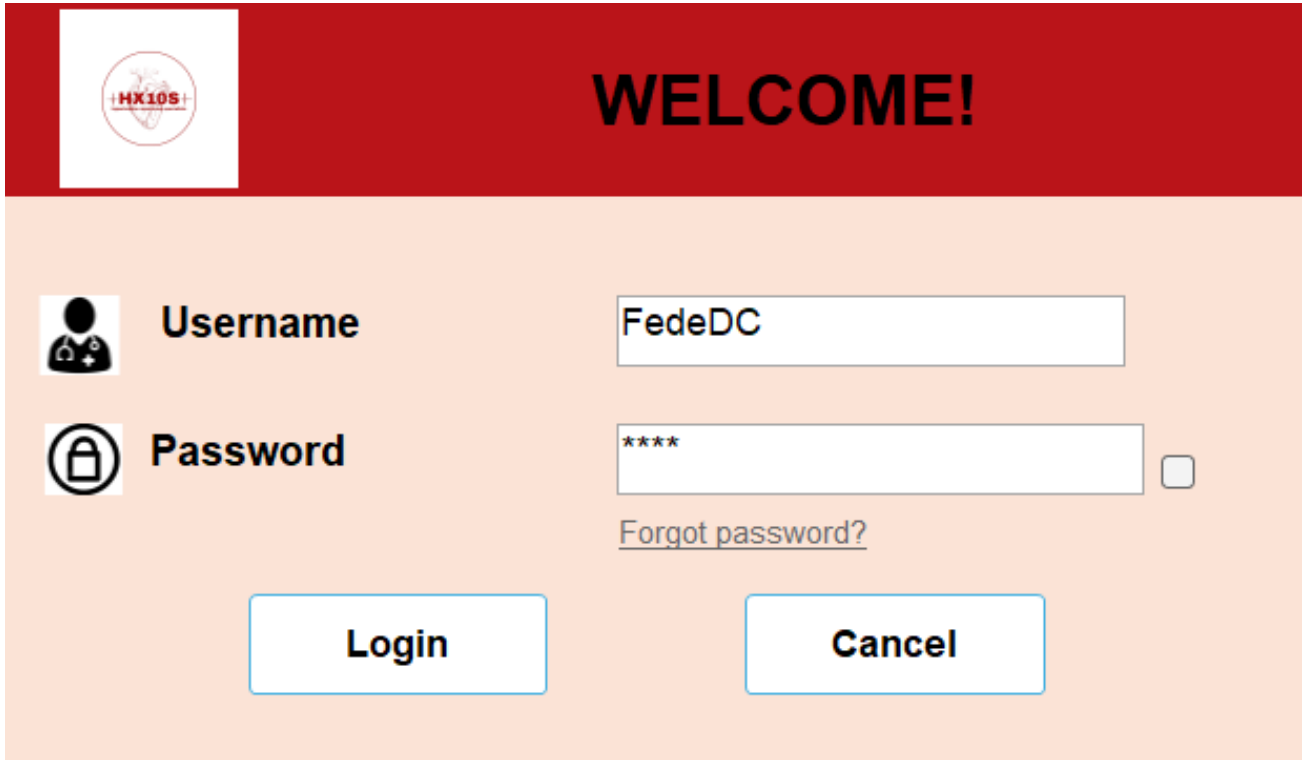
LIVE DEMONSTRATION

PATIENT



LOGIN

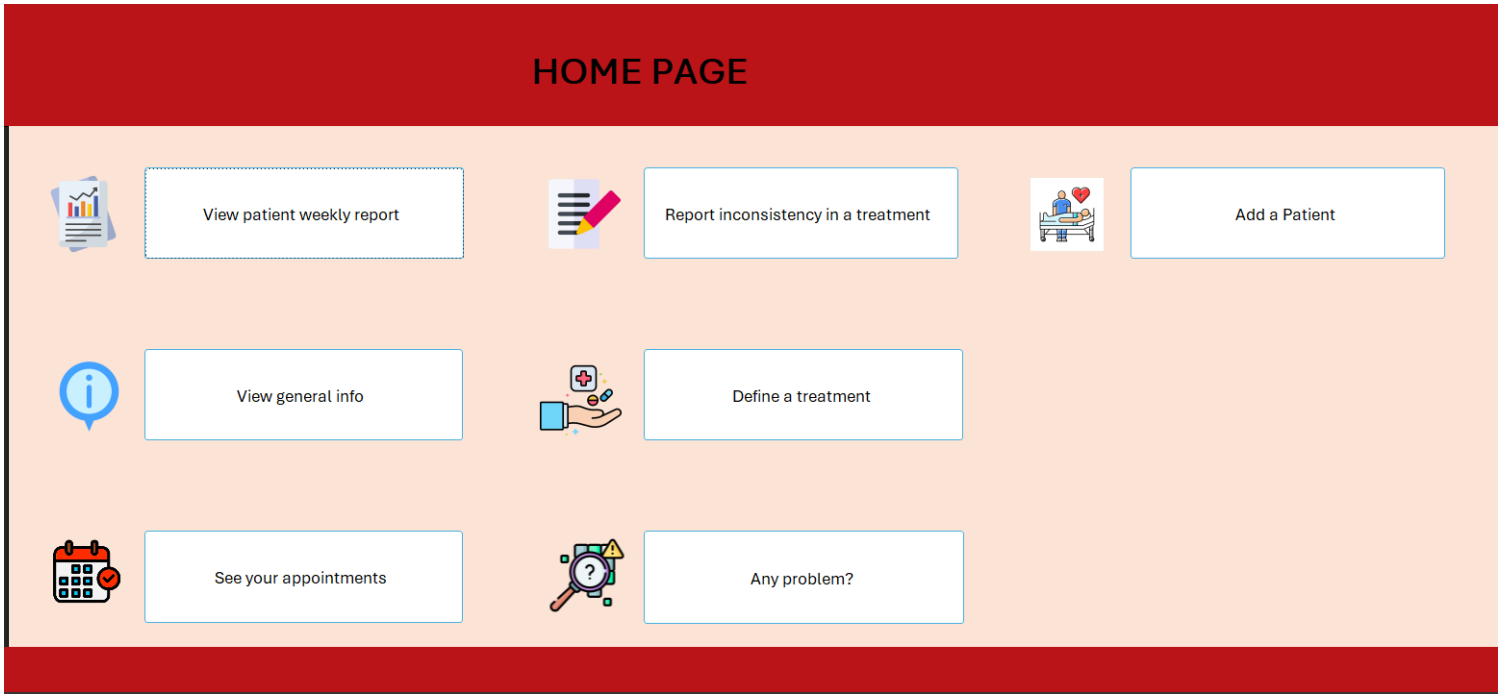
DOCTOR



Doctor will receive their login credentials from the technician

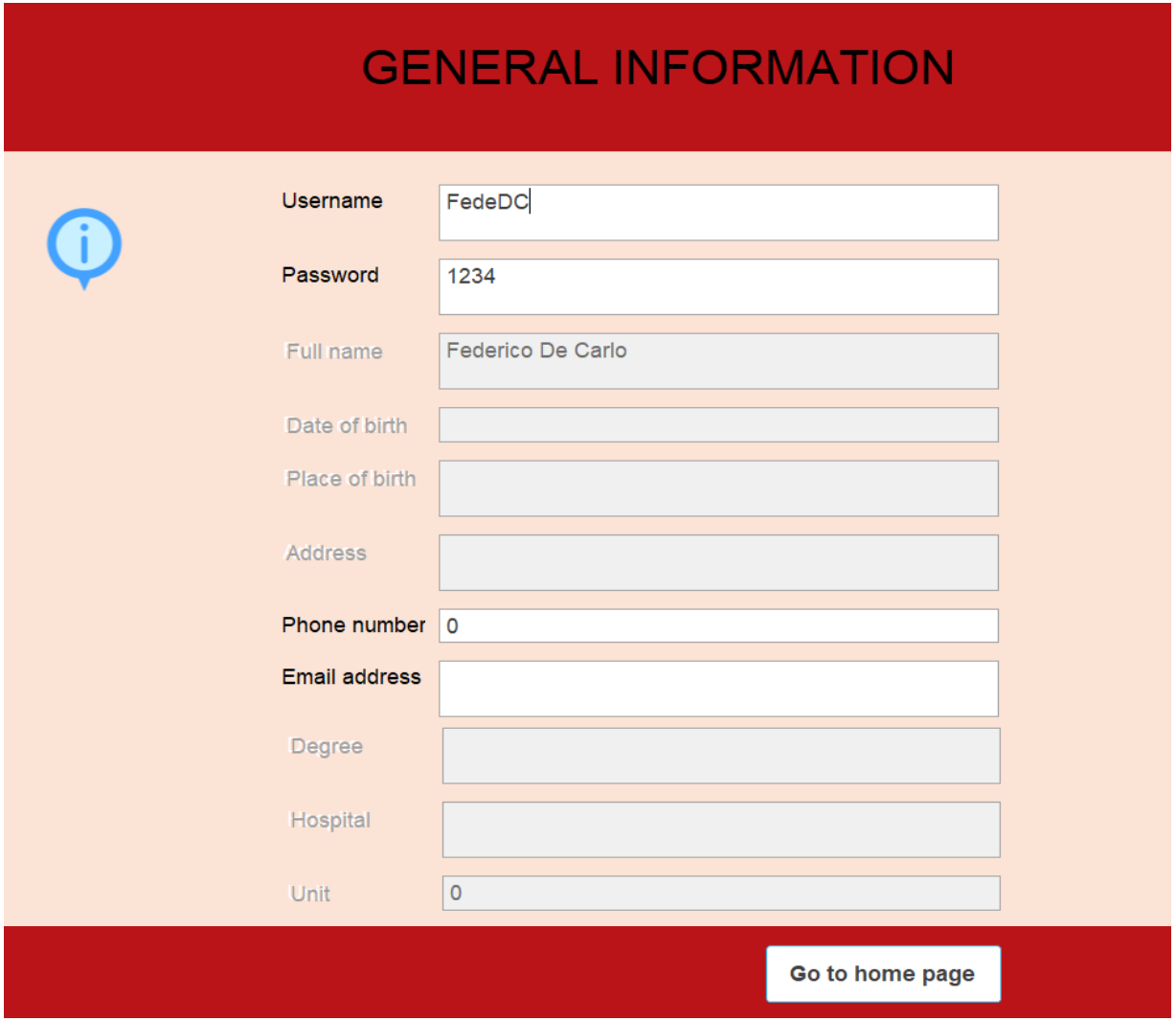
HOMEPAGE

DOCTOR



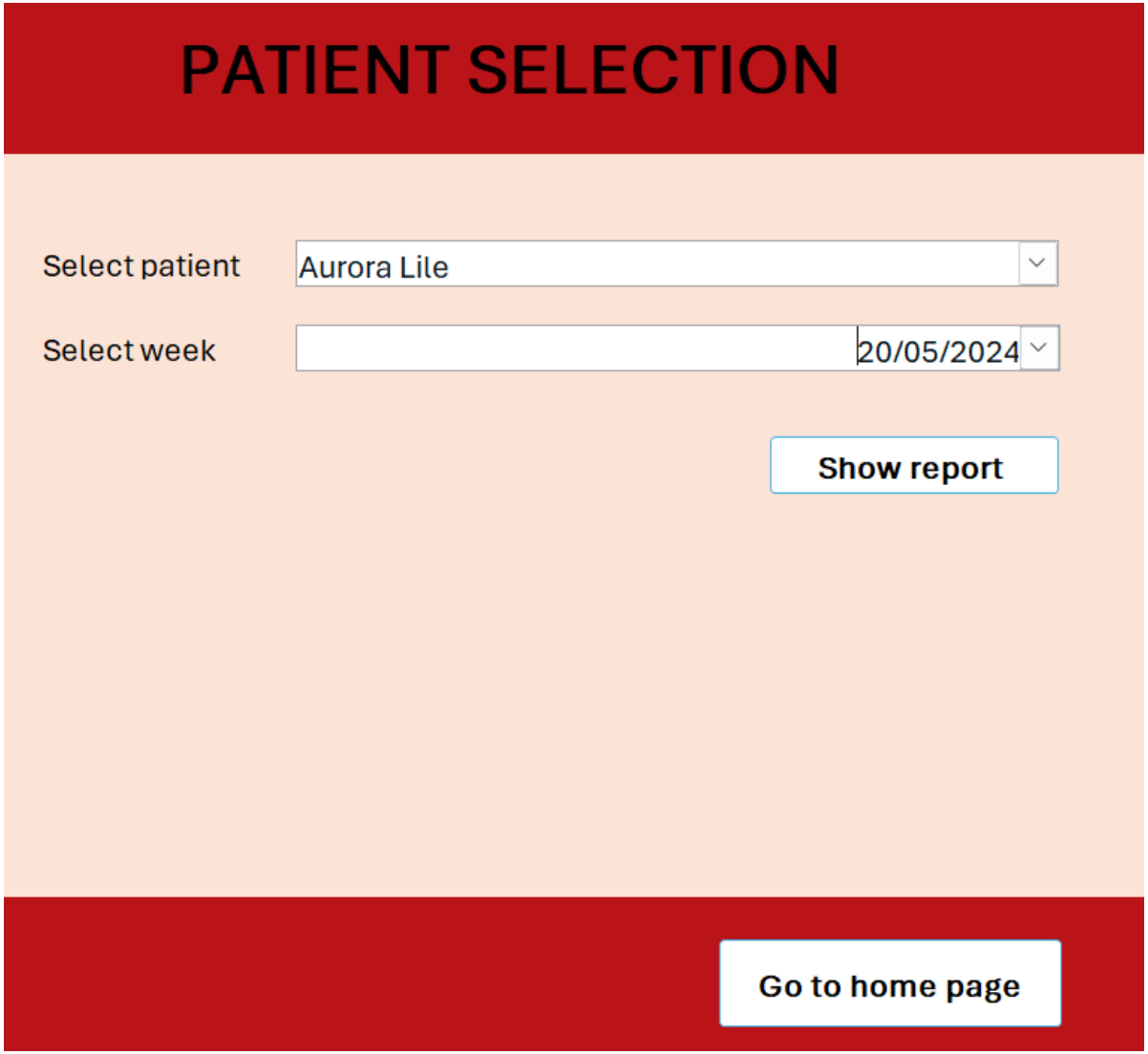
GENERAL INFORMATION

DOCTOR



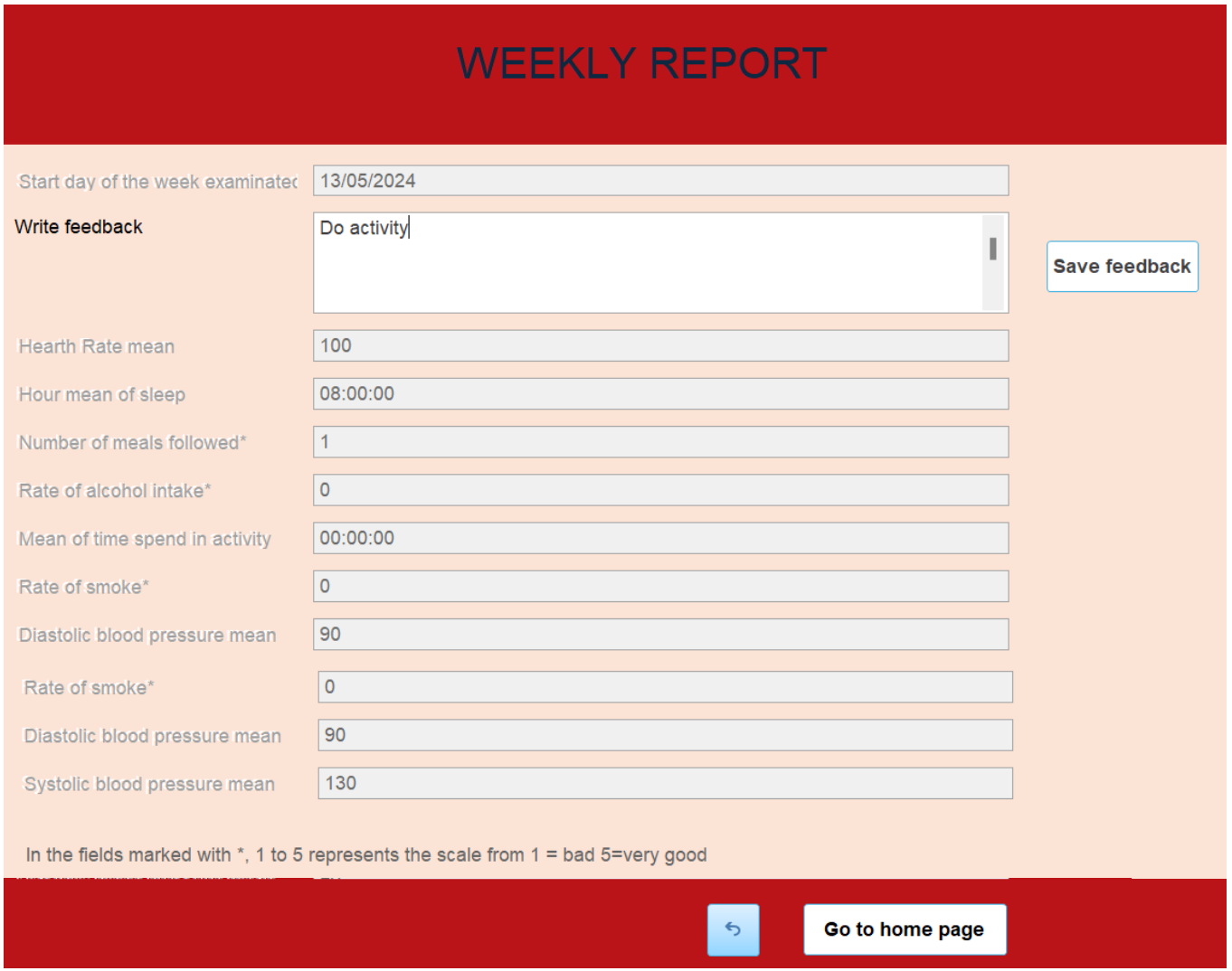
WEEKLY REPORT

DOCTOR



WEEKLY REPORT

DOCTOR



APPOINTMENT

DOCTOR

SEE APPOINTMENTS

Select patient: Irene Caridi

The box below shows the most recent appointment

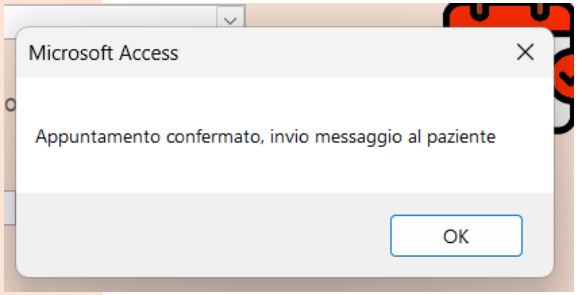
Day: 21/06/2024, 17:30

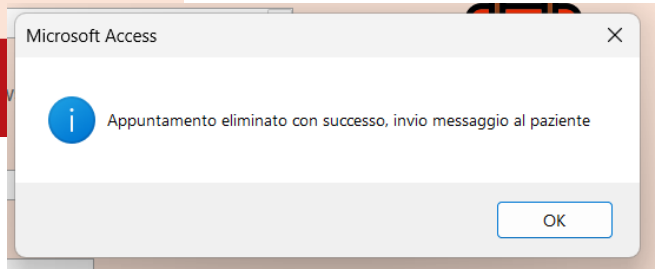
Reason: check

Status: ☑

Save appointment | Delete appointment

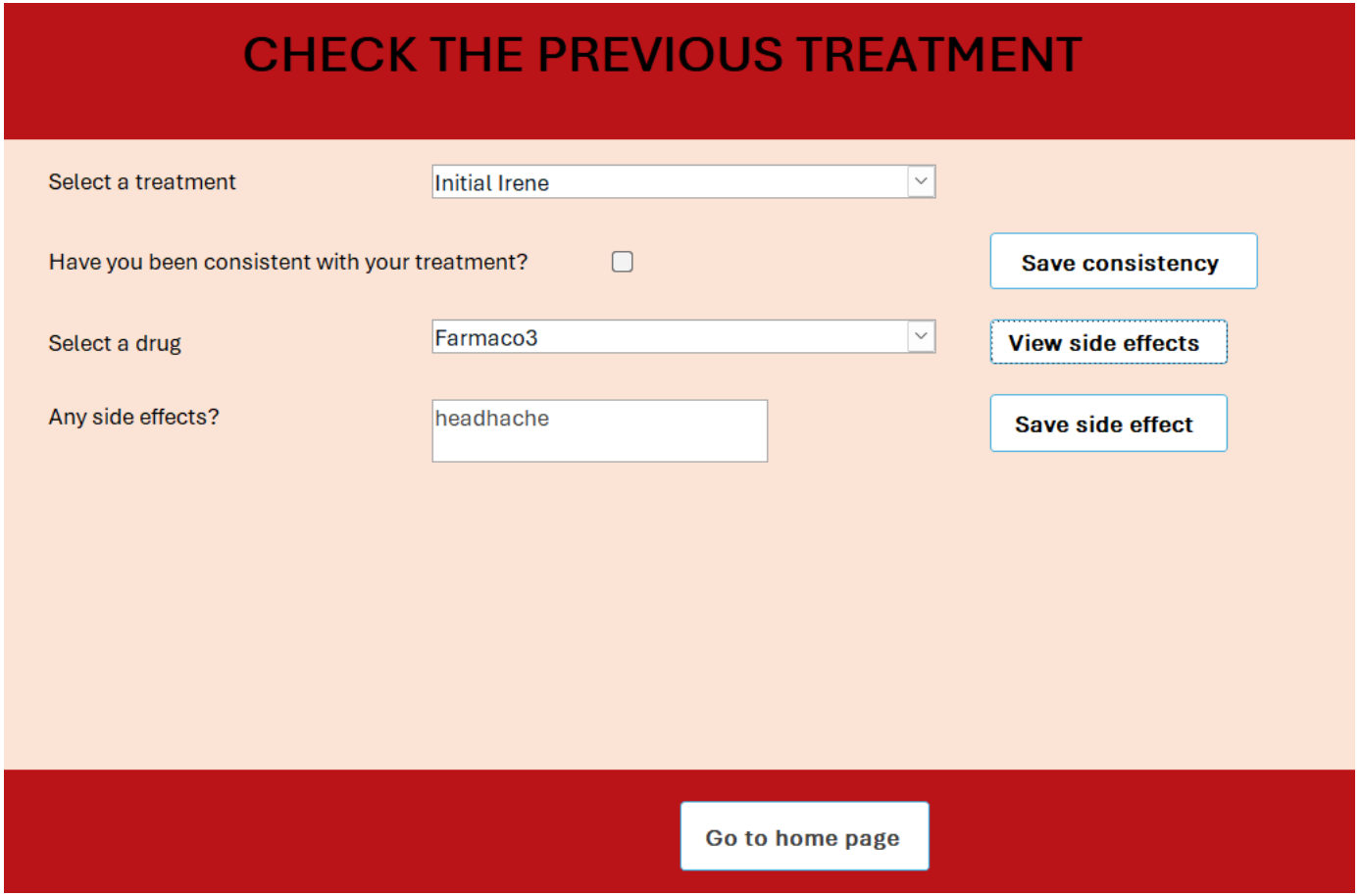
Go to home page





INCONSISTENCY IN TREATMENT

DOCTOR

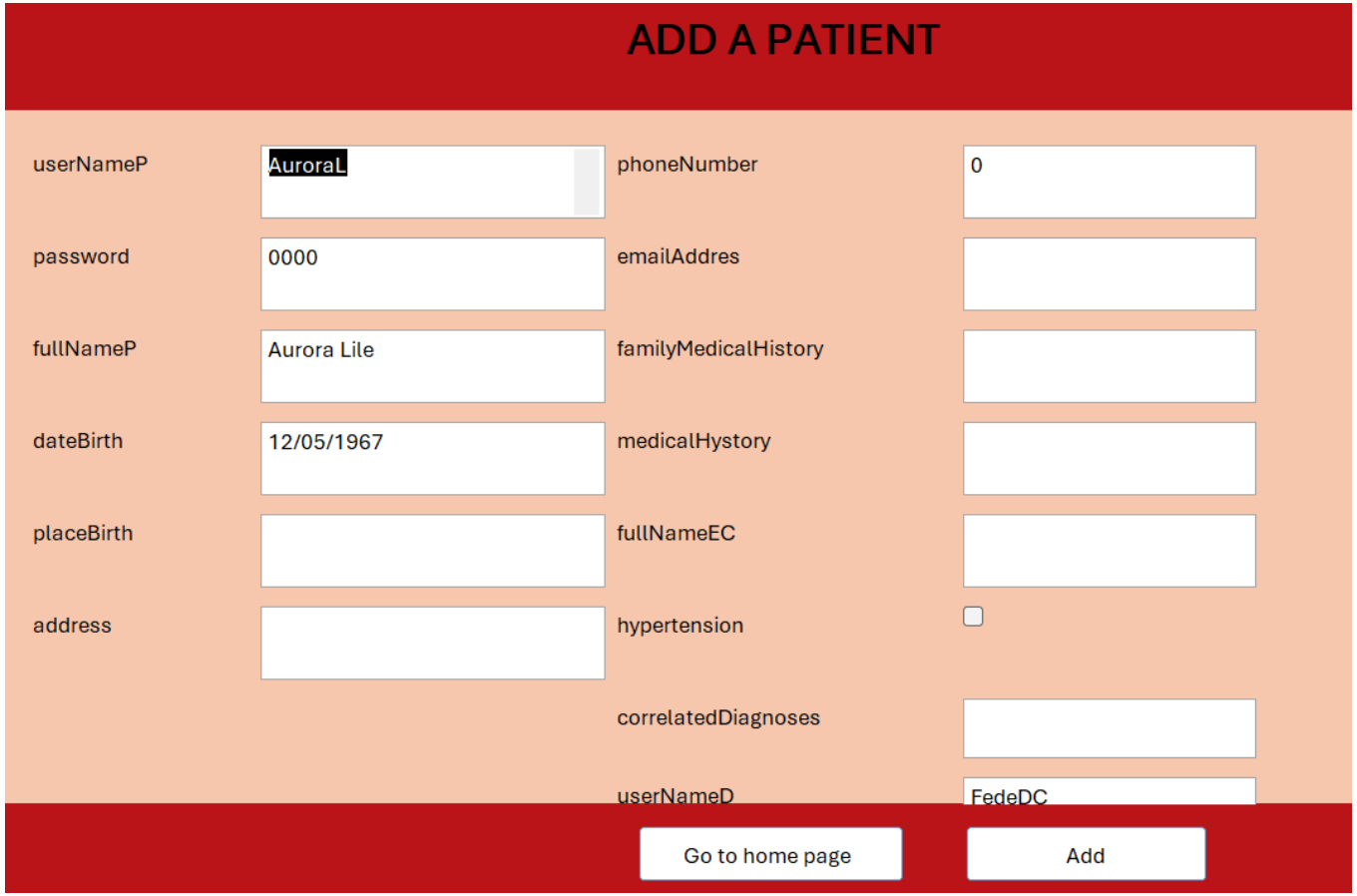


DEFINE A TREATMENT

DOCTOR

ADD A PATIENT

DOCTOR



PROBLEMS

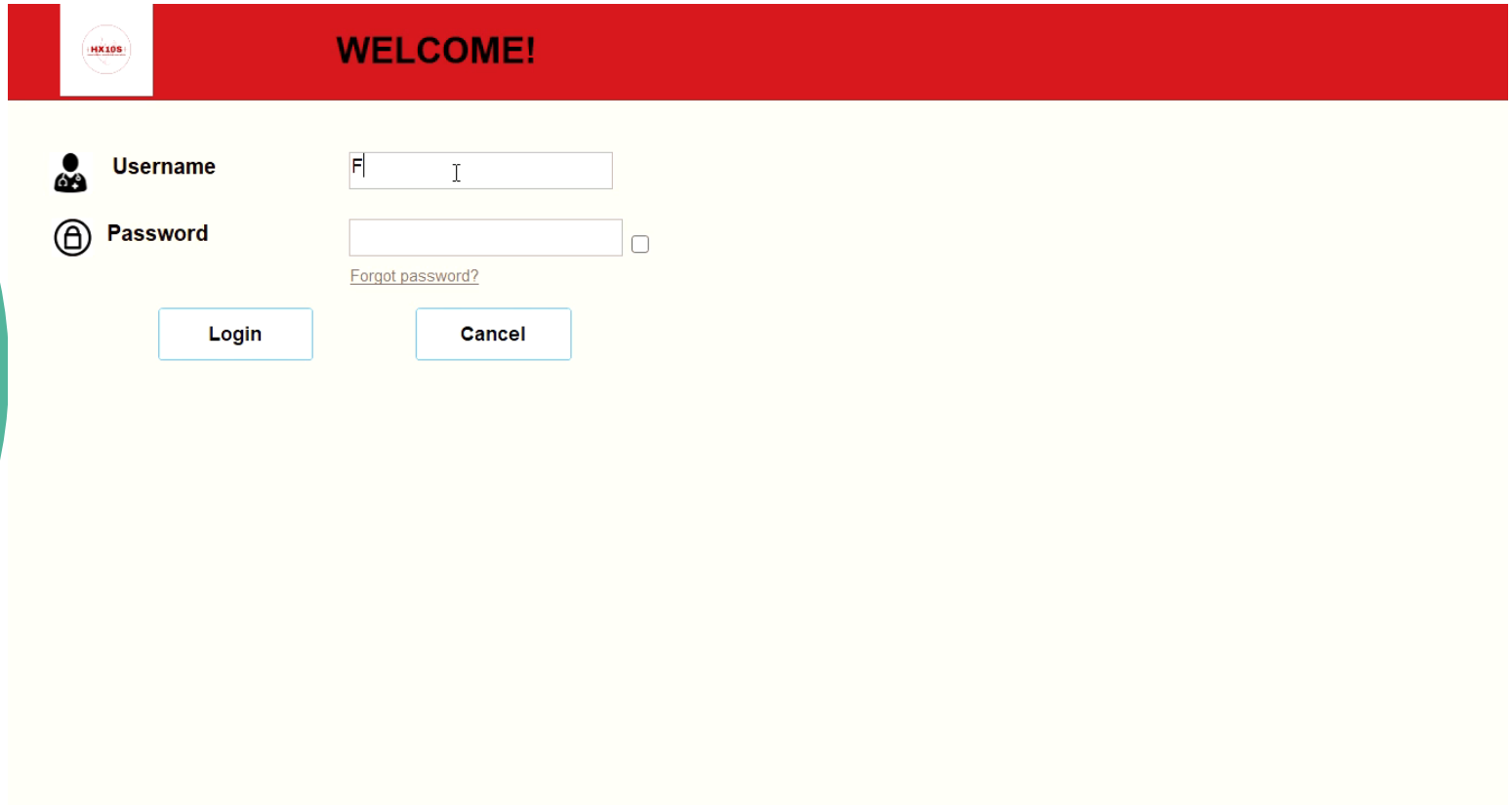
DOCTOR

EMERGENCY CONTACT

Call Technician

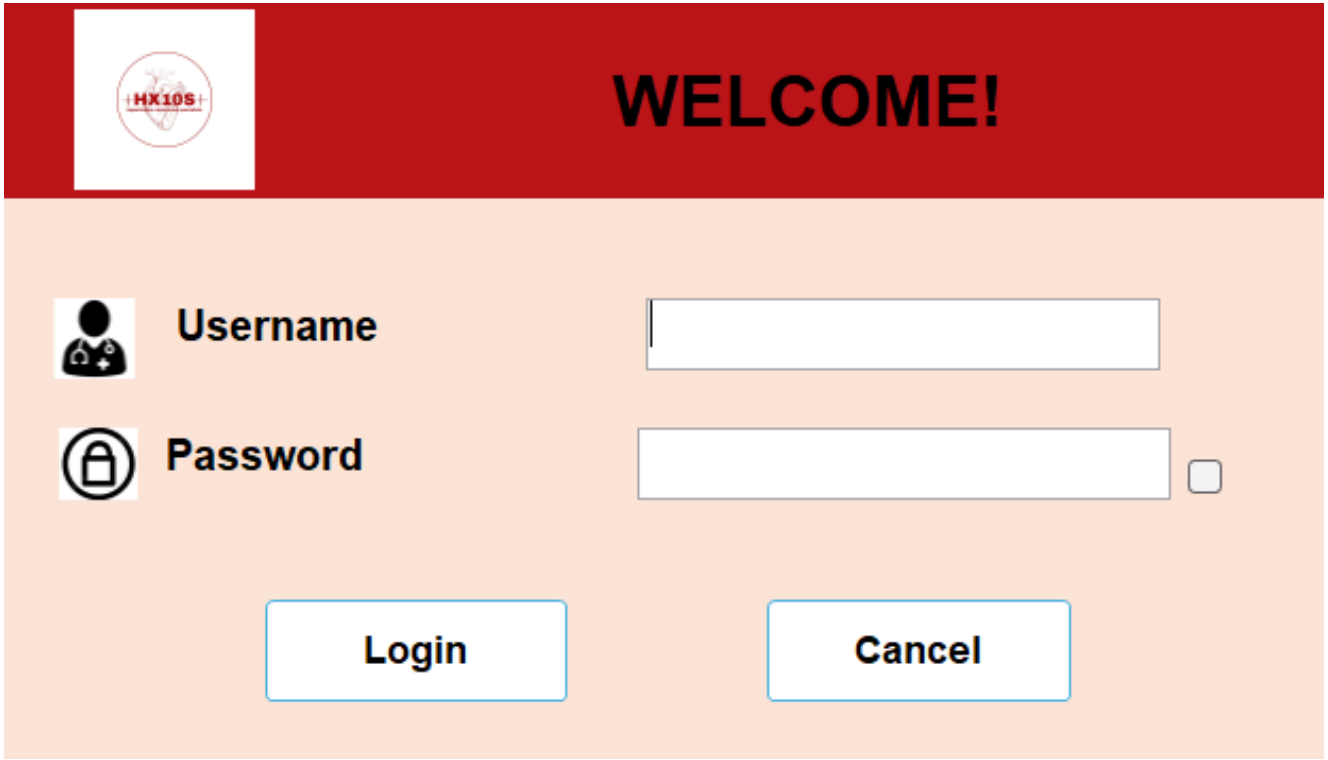
LIVE DEMONSTRATION

DOCTOR



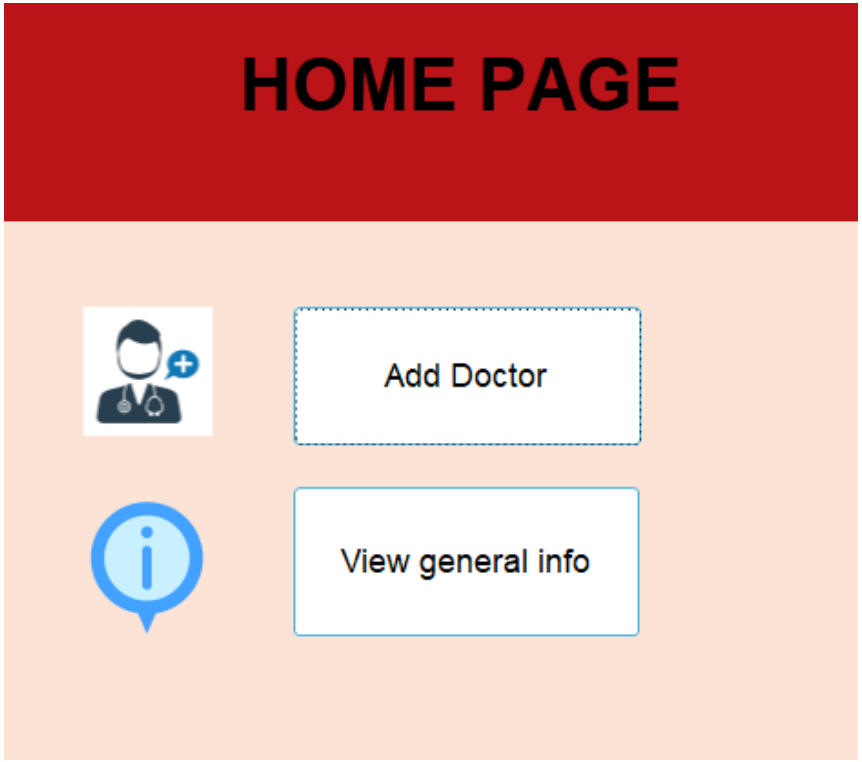
LOGIN

TECHNICIAN



HOMEPAGE

TECHNICIAN



ADD A DOCTOR

TECHNICIAN

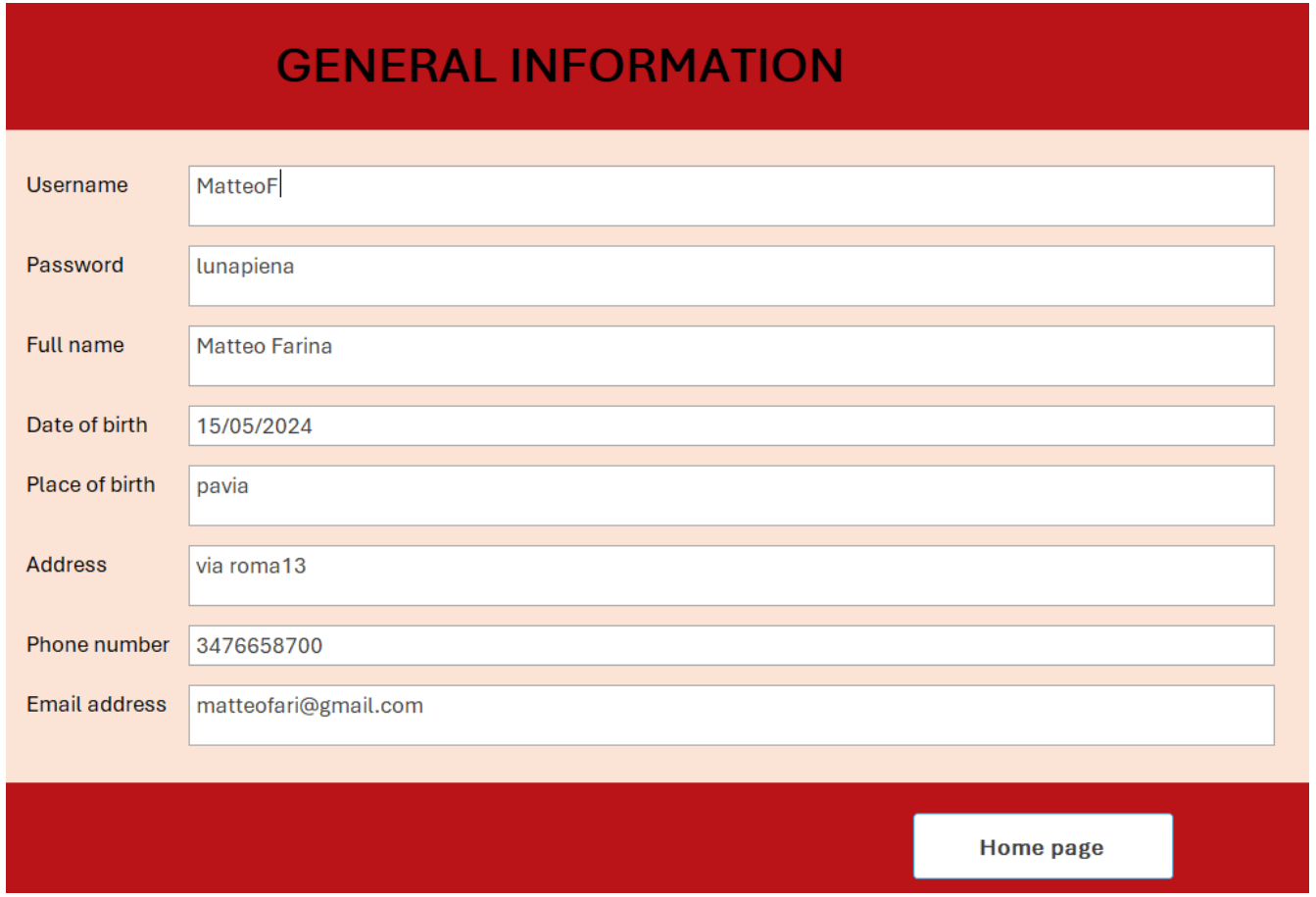
ADD A DOCTOR

Username	FedeDC
Password	1234
Full name	Federico De Carlo
Date of birth	
Place of birth	
Address	
Phone number	0
Email address	
Degree	
Hospital	
Unit	0

Add Doctor

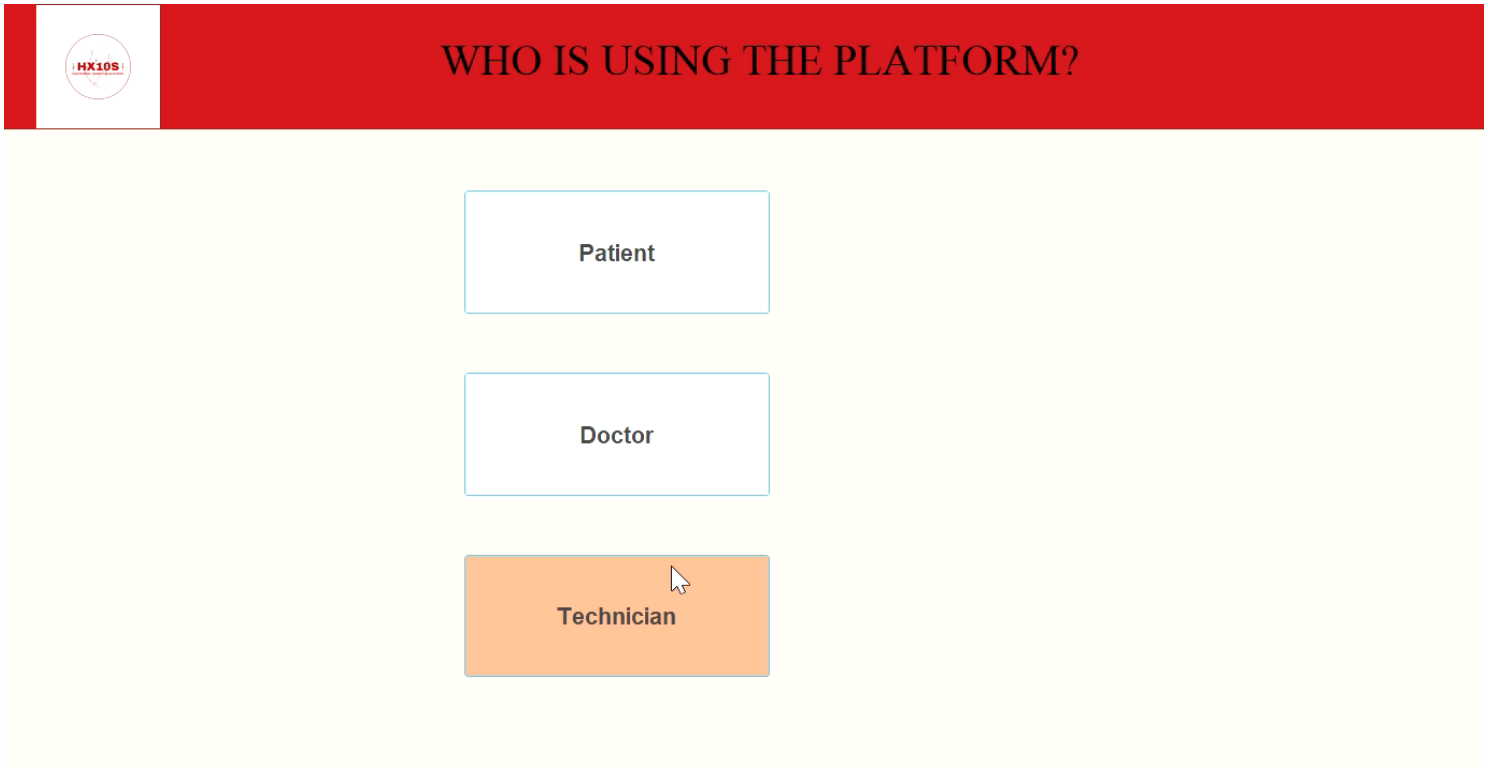
GENERAL INFORMATION

TECHNICIAN



LIVE DEMONSTRATION

TECHNICIAN



STRENGTHS

- **Improve Patient Engagement:** Increases patient involvement in managing their own health.

- **Easy to use:** user-friendly interfaces ensuring that patients of all ages and technical skill levels can operate it with ease.

- **Convenience:** Allows frequent and convenient monitoring without the need for regular hospital visits, hence being a solution to the long waiting lists.

- **Educational Programs:** Offers educational programs to help patients understand and manage their condition better.

LIMITATIONS

- **Accuracy and Reliability:** Home monitoring devices may be less accurate than hospital-grade equipment, leading to potential measurement errors.

- **Data Security and Privacy:** Raises concerns about the security and privacy of health data, as sensitive information could be vulnerable to breaches.

- **Cost:** The initial cost of the devices and technology can be high, potentially limiting access for some patients.

FUTURE PERSPECTIVES

- **Integration with AI and Machine Learning:** Implement advanced algorithms to to analyze data and provide predictive analytics and related graphigs about the trend of these data, offering personalized treatment recommendations.

- **Gamification and Incentives:** Incorporate gamification elements and reward systems to motivate patients to engage consistently with their health monitoring routines.

- **Community and Support Features:** Create community forums and support groups within the app to foster peer support and shared experiences among patients with hypertension.

- **Research and Development:** Use aggregated and anonymized data to support clinical research and contribute to the development of new treatments and management strategies for hypertension.

POLITECNICO
MILANO 1863

SCUOLA DI INGEGNERIA INDUSTRIALE
E DELL'INFORMAZIONE

THANK YOU FOR THE ATTENTION

Bertoldi Vasco – vasco.bertoldi@mail.polimi.it
Caridi Irene – irene.caridi@mail.polimi.it
De Carlo Federico – federico1.decarlo@mail.polimi.it
Facchini Elisa – elisa1.facchini@mail.polimi.it
Farina Matteo – matteo3.farina@mail.polimi.it
Lile Aurora – aurora.lile@mail.polimi.it