TeleHealth

Author: Sharanya Adiga, Anusree Pritha Ranjith, Hiten Kulkarni

Revision: A

Document approval

Name	Role	Signature / date

2 Change Log

Revision	Description of changes
A	Initial version

3 Purpose & Scope (of this document)

The purpose of this document is to describe all the use cases and also showcase the following for them:

- wireframes made in Basalmiq
- Non functional requirements
- Domain class models for each

4 References

Lecture PPTs, Example done in class.

5 Non functional Requirements

R-NF-1001

Security:

- Data Security: The telehealth platform must ensure the privacy and confidentiality of patient data. It should implement robust encryption protocols to protect sensitive information from unauthorised access.
- Access Control: The system should have strong authentication and authorization mechanisms to ensure that only authorised users, such as healthcare professionals and patients, can access and modify patient data.

R-NF-1002

User-Friendly:

- Intuitive Interface: The telehealth system should have a user-friendly interface that is easy to navigate and understand for both healthcare professionals and patients.
- Seamless User Experience: It should provide a seamless and smooth user experience, with clear instructions and prompts to guide users through the various functionalities of the platform.
- Accessibility: The system should be accessible to users with different levels of technical proficiency and support multiple devices and operating systems to cater to a wider user base

R-NF-1003

Compliance:

- Regulatory Compliance: The telehealth platform should adhere to relevant legal and regulatory requirements, such as data protection laws and healthcare regulations specific to the region where it is deployed.
- Standards Compliance: It should follow industry standards and best practices, ensuring interoperability with other healthcare systems and promoting seamless data exchange and integration

- Compliance with Regulations: The platform should adhere to relevant data protection and privacy regulations, such as HIPAA (Health Insurance Portability and Accountability Act), to ensure compliance and protect patient privacy.

R-NF-1004

Compatibility:

- Device Compatibility: The telehealth system should be compatible with a variety of devices, including smartphones, tablets, and computers, running different operating systems.
- Browser Compatibility: It should be compatible with popular web browsers, ensuring that users can access the platform regardless of their preferred browser.
- Integration: The telehealth system should have the capability to integrate with existing healthcare systems, such as electronic health record (EHR) systems, for seamless data sharing and collaboration.

R-NF-1005

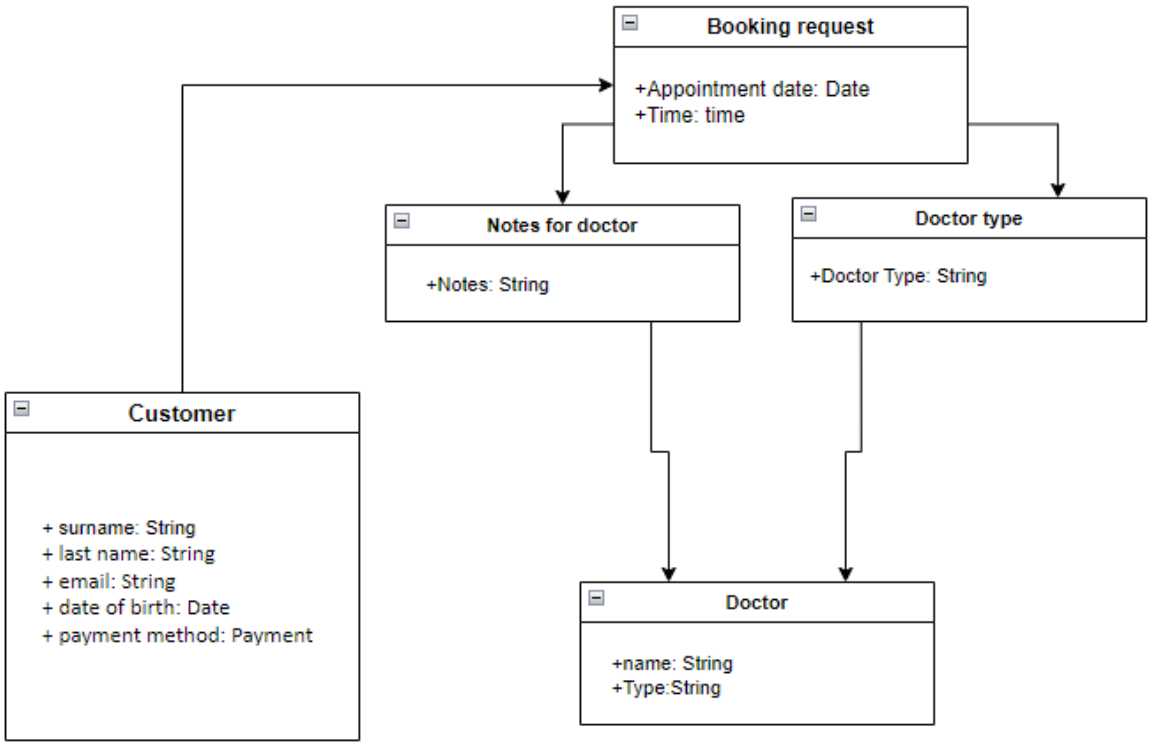
Scalability:

- Performance: The telehealth platform should be designed to handle a large number of concurrent users and maintain fast response times, even during peak usage periods.
- Infrastructure Scalability: The system should be scalable to accommodate increased user demand and data storage requirements over time. It should have the capability to scale its infrastructure resources, such as servers and bandwidth, to meet growing needs without compromising performance.
- Load Balancing: Load balancing techniques should be implemented to distribute user traffic evenly across multiple servers, ensuring optimal performance and preventing bottlenecks.

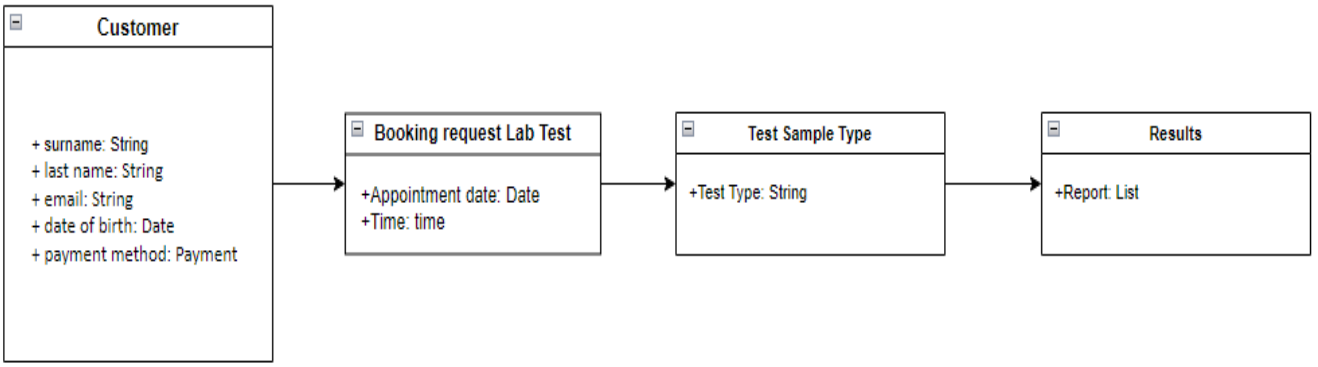
R-DC-1006

Domain Class Models

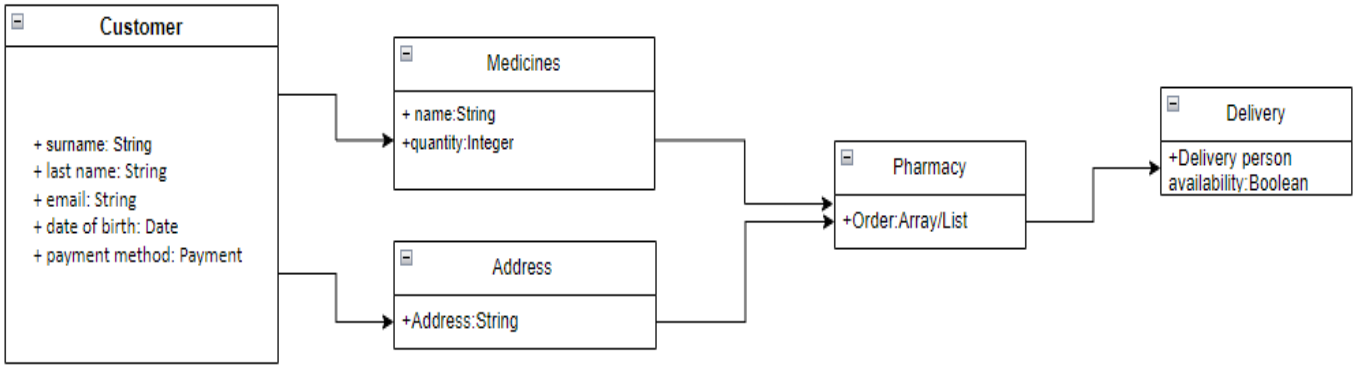
1.Consultation:



2.Lab test



3.Medicines



6 Use Cases

R-UC-1007

Consultation

Use Case ID	1
Title	Consultation
Level	☒Primary (user goal)
Short description	Patients can consult with Doctors/healthcare professionals remotely, using technology such as video calls, phone calls or online messaging. Allows patients to receive medical advice, diagnosis and treatment from the comfort of their own homes.
Actors	Doctor, Patient, Lab, Pharmacy, Phlebotomist
Main use case requirements	
MAIN-1	It provides secure and encrypted communication to protect patient privacy.
MAIN-2	It should support high quality video and audio capabilities for real time communication.
MAIN-3	It should enable patients to easily book consultations, receive appointment reminders and also provide necessary info ahead of the appointment.

MAIN-4	Training materials should be available for the patients to consult the doctor effectively.
MAIN-5	HIPAA Compliance; The platform must adhere to HIPAA regulations and provide encryption and data protection measures.
Main success scenario	
Step 1	Login to the Application.
Step 2	Research and identify the Doctor with respect to the need.
Step 3	Schedule an appointment.
Step 4	Payment has to be done.
Step 5	Confirm necessary technology requirements.
Step 6	Testing Equipment and connectivity
Step 7	At the appointed time join the consultation.
Step 8	Establishing Communication and discussing medical concerns.
Step 9	Visual Examination, Diagnosis and Treatment plan.
Step 10	Documentation and prescription.
Step 11	Follow-up, next steps and Closing the Consultation.
Step 12	User can view Medications/Prescriptions.

Variation of step 3:	
Step 3.1	Due to technical issues, Consultation might get cancelled or rescheduled.
Step 3.2	The patient will be alerted with the required message in the app.

R-UC-1008
Lab Check-up

Use Case ID	2
Title	Getting checked by Lab and getting your results
Level	☒Secondary (subfunction)
Short description	Whenever a user needs his blood sample checked so that he gets a detailed report, he can use the Lab function on the app to do it. He can book an appointment so that a professional from the Lab can go to his/her house, collect their blood and take it to the Lab for testing generally and also for specifications that have been mentioned by the user. They will then get their results as softcopy via email and also as hardcopy via post if the user requests it.
Actors	Primary:User,Secondary:The Lab worker,Phlebotomist
Main use case requirements	

MAIN-1	1. Pre-conditions: User has access to the website and has created an account, User has booked an appointment for blood sample testing, and Lab Professional is available to collect the blood sample. 2. Post-conditions: User receives the blood test results via email and post if requested, and the Lab system records the test results. 3. Non-functional requirements: · The Lab system must comply with all applicable regulations related to medical testing and data privacy. · The Lab system must have sufficient capacity to handle a high volume of blood sample tests. · The Lab system must ensure the accuracy and reliability of the test results.
Main success scenario:	
Step 1	User logs into the app and selects the "Lab" function.
Step 2	User provides any specific instructions for the blood test and confirms the appointment.
Step 3	User selects the type of test required and schedules an appointment for a Lab Professional to collect the blood sample.
Step 4	User selects the type of test required and schedules an appointment for a Lab Professional to collect the blood sample.
Step 5	Lab Professional collects the blood sample from the user's house and transports it to the Lab for testing.
Step 6	The Lab system tests the blood sample and generates the results.

Step 7	The Lab system sends the results to the user via email.
Step 8	The user can request a hardcopy of the results to be sent via post.
Variation of step 4:	
Step 1.1	If the user needs to cancel or reschedule the appointment, they can do so through the app.
Step 1.2	If there are any issues with the blood sample, such as contamination or insufficient quantity, the Lab system will contact the user to request another sample.

R-UC-1009

Medicines

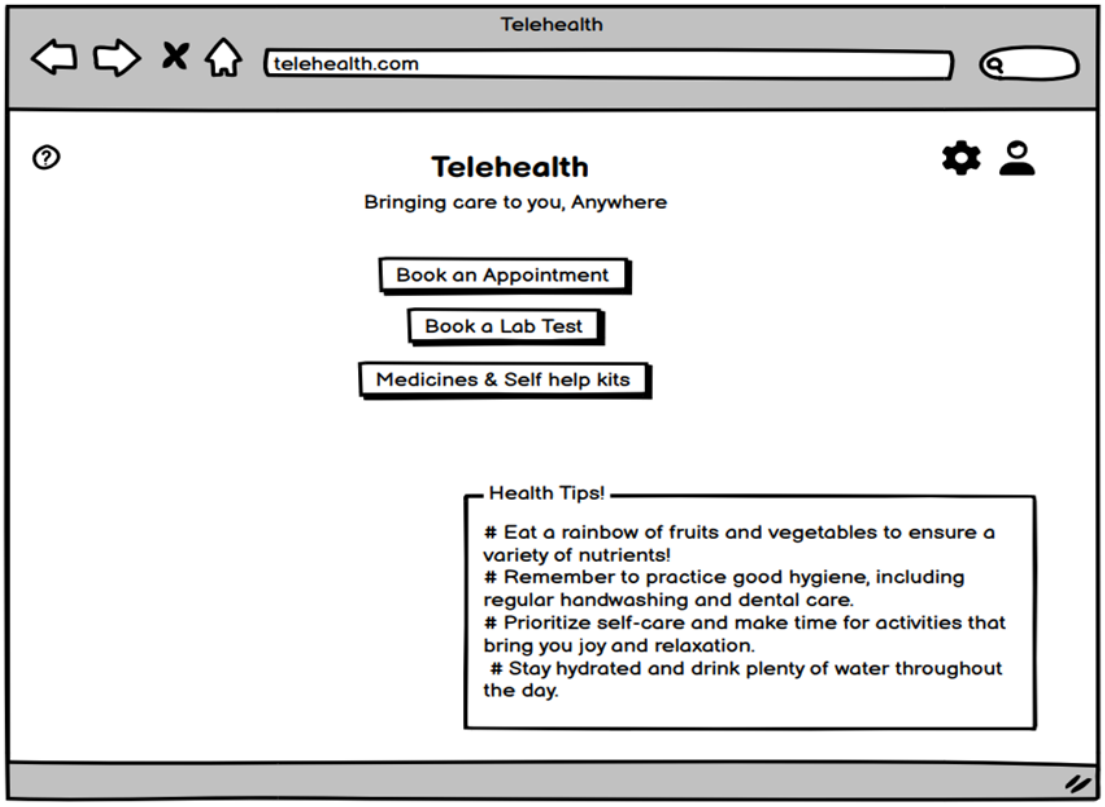
Use Case ID	3
Title	Medicines
Level	☒Secondary
Short description	Deals with provision and delivery of medicines and prescription of the patient's illness. Also includes the delivery of self-test kits of the customer by the phlebotomist.
Actors	Doctor , Patient , Phlebotomist, Pharmacy

Input parameters	The doctor gives the doctors letter along with prescriptions and the app offers options to collect the prescribed medicines
Output parameters	The output parameters are the following: 1. The medicines are collected from the pharmacy directly by the customer using the doctor's letter. 2. The medicines are delivered to the customer by delivery agents known as phlebotomists within a stipulated time. This is an additional feature of the app.
Main use case requirements	
MAIN-1	Different login credentials for the phlebotomist
Main-…	The phlebotomist must be within the geographical location of the labs and pharmacies
Main success scenario	
Step 1	User chooses option to opt for delivery of medicines
Step 2	User is assigned a based on location and pincode
Step 3	Phlebo arrives at pharmacy and delivers medicine to user
Variation of step 1: for example an error occurs or the user selects an option,…	
Step 1.1	The required self – test kit of the user is no longer present or does not deliver to the location
Step 1.2	The user will be alerted with the required message in the app

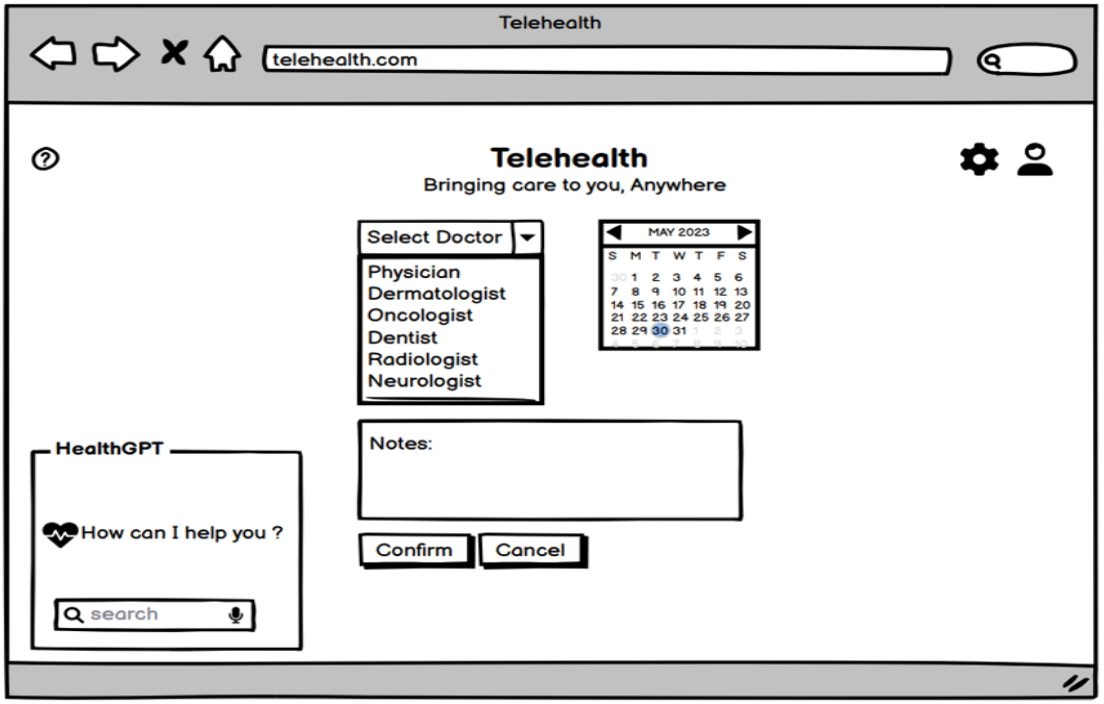
Variation 2	
Step 2.1	The phlebo has cancelled on the customer
Step 2.2	The customer will be provided with a replacement phlebotomist
Variation 3	
Step 3.1	Medicine is unavailable at the pharmacy
Step 3.2	Customers are notified of the unavailability via text message or email.

7. GUI Wireframes:

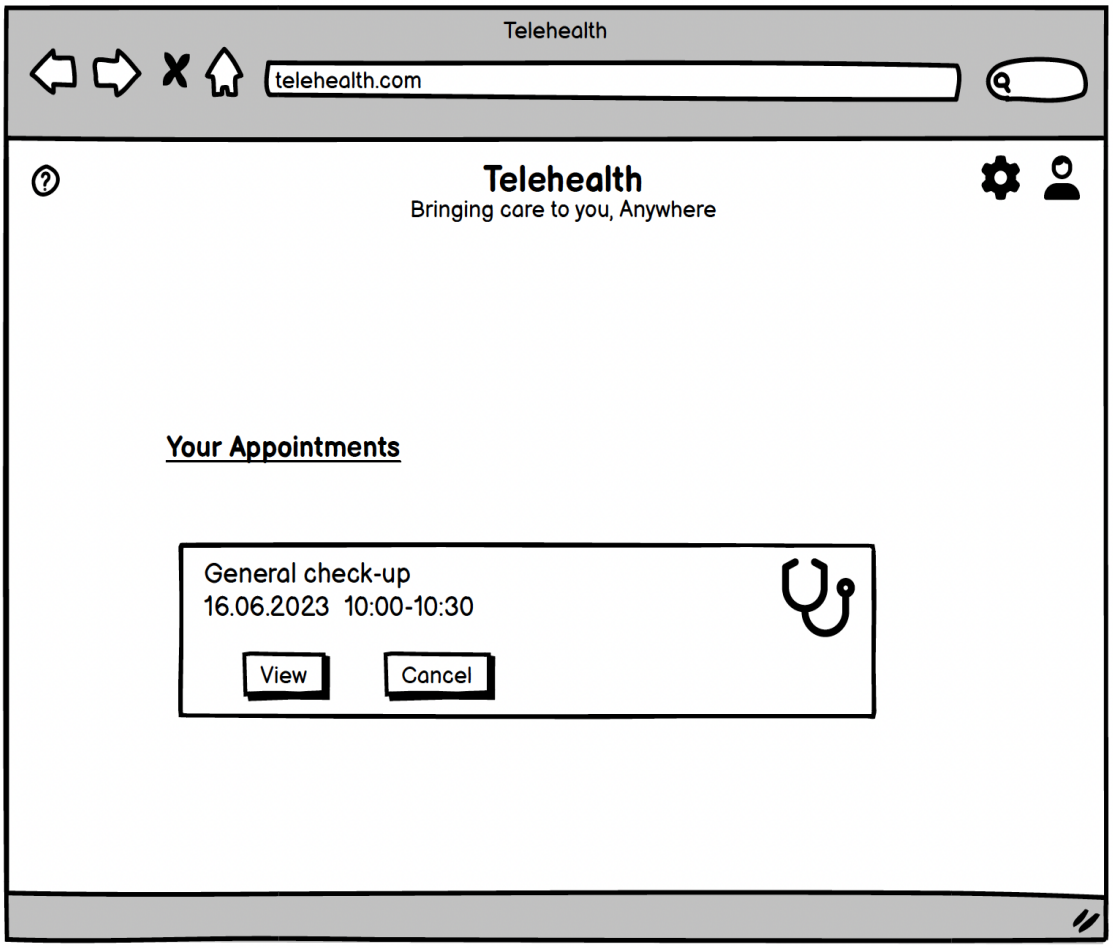
7.1 Landing Page:

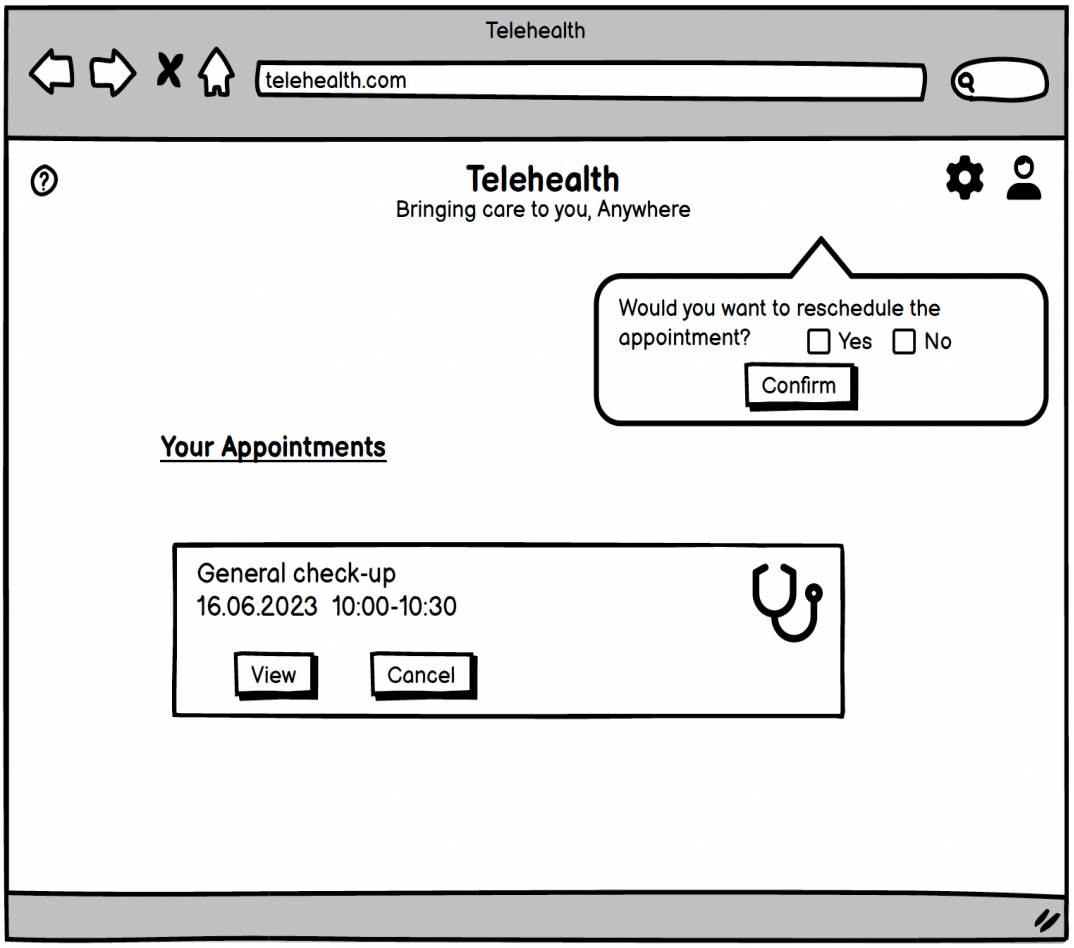


7.2 Booking Consultation:



7.3 Upcoming Appointments/Cancellation:





7.4 Consultation details: