Telehealth Application

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Project initialisation

Project was started on 8th September 2021.

The initial 4 months from September 2021 to January 2022 was reserved for research for application flow, which includes UI/UX design, with the remaining period was assigned to the software development for

- doctor and patients' portals,
- backend scheduling and administrating servers,
- setting up of databases,
- https servers,
- communication servers, which include an encrypted communication systems utilising WebRTC (Web Real Time Communication) and it's supporting technologies.

Application summary

Two main web applications are written and deployed on an encrypted web server. These applications are browser based, and had been designed to be used on mobile and desktop-based browsers.

Development progress

Recent changes were made to change the application flow for Patient's request (see flowchart)

Current committed progress

- *Scheduling* – Includes a cancellation process with refunds for Patient, and reinstatement of appointments and clinics for doctors.
- *Messaging* – A completed internal messaging system is included. This system will not be interfaced with external email system to ensure privacy
- *Video* – Includes embedded Patient Information screen
- *Consultation* – Defaults to 15 minutes, with options to extend
- *Billing* – Interfaces with Stripe payment system

Upcoming implementations
Immediate

- Implementation of Electronic Prescription through the framework given by Australian Digital Health Agency
- Introductory text for landing page
- Server hardening (implementation of security and encryption frameworks)
- SMS notifications

Secondary implementations
- Native applications for Android/iOS
- Admin Panel/Content Management
- Search Engine Optimisation
- UI/UX enhancements
- Analytics

Consultation summary

<u>Doctors</u>
Doctors will be able to create slots for online clinic sessions in two ways.

1. By having an immediate online clinic at the click of a button, and selection of the duration of session time. If there is an upcoming session, the doctor will be prompted to combine the two sessions together.
2. By selecting ADD ONLINE CLINIC on Appointments page. This will enable user to create future session schedules.

Email reminders will be sent if requested.
An SMS notification will be sent to Administrating doctor to respond to unanswered requests

<u>Patients</u>
Patients will be able to request for immediate video consultation with doctors from their Dashboard screen.
Upon request, the patient is able to provide a brief description of their medical symptoms, and include a snapshot picture of the affected area.
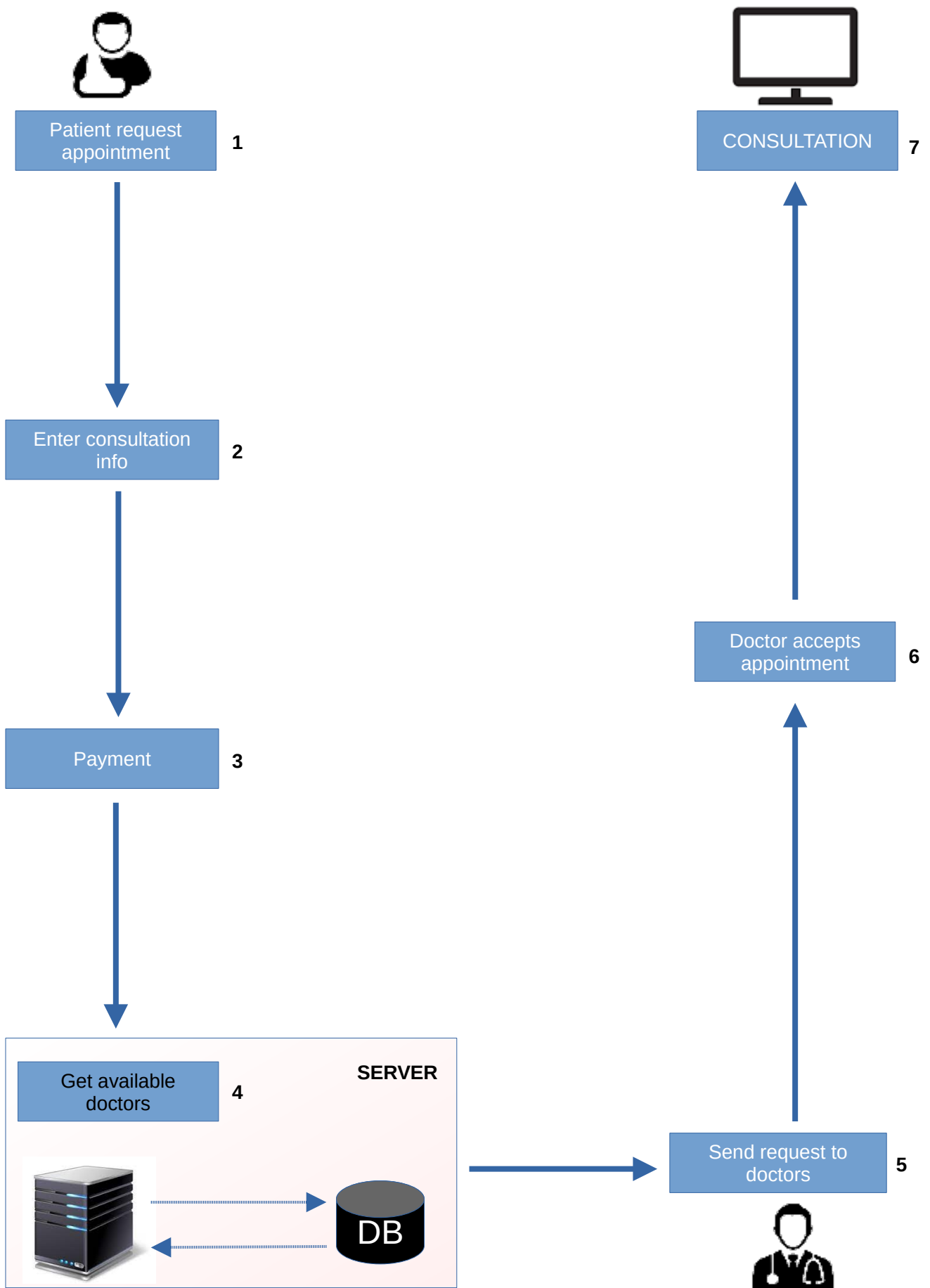User will then be prompted for payment, and upon successful payment, a request will be sent to all available doctors. If the system is unable to assign any doctors to the patient, a notification will be sent to the administrating doctor to respond within a reasonable period of time.

Potential future implementation/expansion of usage

The system is currently capable of handling an open/multi-clinic implementations. The next rollout will be able to utilise a single portal for registered doctors to provide online clinics.

Upcoming implementations could also allow individual clinics to embed the portal into their own system/website, by allowing them to connect through a single API key for security. Potentially, the portal could be customised to their current colour theme.

Modified system flowchart (customised to clinic implementation)

Patient request appointment **1**

Enter consultation info **2**

Payment **3**

SERVER

Get available doctors **4**

DB

Send request to doctors **5**

Doctor accepts appointment **6**

CONSULTATION **7**

Previous system flowchart

Patient request appointment

Payment request

6

Payment confirmed

1

5

7

SERVER

Get available doctors

2

DB

CONSULTATION

3

4

Send request to doctors

Doctor accepts appointment

Doctors set appointment session slots

DB

Save session slots