TOPIC- **HEALTHCARE**

**CASE STUDY:** Assign queue to prioritize people with more severe injuries as compared to people with normal simple symptoms as it is a “first come, first serve basis”

**Problems**

**Problem 1**: The longer the people with more serious problems wait, the worse their symptoms get.

**Problem 2**: Incomplete Patient Information at check-in. When patients arrive without essential documentation. Staff must spend additional time verifying or waiting for patients to find their necessary documents causing more hassle for them and the other patients waiting for their turn.

**Problem 3:** Lack of coordination between healthcare workers in different departments may cause delays in the system, which makes the waiting time even longer.

**Problem 4**: Patients may be unsatisfied due to the long waiting time, which may cause some tension between the angry patient and the healthcare workers as they may not cooperate easily.

**Solutions**

**Solution 1**: Ask them to rate the severity of their pain and state their symptoms from this information to allow medical workers to determine if they are a high or low priority patient.

**Solution 2**: Implement an online system where patients can upload necessary documents and fill out forms before their visit and send reminders before the appointment to ensure patients bring all required documents.

**Solution 3**: Create a communication application for healthcare workers within the hospital that allows for immediate and clear communication between doctors and nurses separate from messaging apps like whatsapp or messenger as they may be used for casual talking friends and family. Doctors may need to ask assistance from a nurse that specializes in some departments like dementia patients so they will text in the nurse chat.

**Solution 4**: Let patients know their estimated waiting times and when their turn will be. (those with more serious injuries will have faster queuing timings)

**Methodology**:

The approach that we plan to use is the **waterfall approach** where we need requirements,specifications,design,coding,testing,integration,maintenance.

**Requirement**: Make sure everyone comes to the group meeting and that everyone works together as a team without any disagreements.

**Specifications:** We plan to create a software which helps to decrease the time of queuing. e.g.( from 30 mins to 10 mins) Minimum waiting time 10 mins( 1 min= 10 seconds in scratch terms of timing), maximum waiting times 3h. So that people with serious problems would have the priority could go and get their treatment first and faster.

**Design:** App that could be easily accessible to all ages from age 10 - 80. It could also be accessed on all devices like the computer and on the mobile phone. We would be using UX design. We plan to make it in the design of hospitality using mostly white, green and blue.

**Coding:** We use scratch to code which we would be using to make the application.

**Testing:** We would be testing to see if our application is usable and if it actually helps with fastening the queue times so that it can make the customer satisfied with the service at the hospital.

**Integration**: Improves by getting user feedback so that as the application progresses it would keep getting updated for the users need.

**Maintenance:** We will update and add on to our software to keep it up to date so hospital patient satisfaction stays up

**Apps/Software that we have used**

**Microsoft Project** - We use Microsoft projects to plan our schedule so that it is neater and coordinated and we have an exact duration to finish the project. (timeline)

**Scratch** - we use scratch to come up with the app to come up with our codes. (for eg. We plan to use scratch to create radio buttons so that we can ask them to rate the severity of their pain. we can also use the cat(sprite) to create a video on how to use the app and the different functions like moving the sprite making a chat bubble so that it can better explain the purpose and functionality of the app.

**GitHub**- We use GitHub to coordinate our codes better and import all our files (Our Scratch and presentation slides, schedule and report)

**Google and Chat-GPT**: we used them to research the industries and the problems they may face

**Company Values**: Compassion, Integrity and collaborations.

**Innovations**: Our innovation is to have communication tools and have queue customization via app. For communication tools, using automated messages to inform the patients on any delays at the hospital and patients have the option to reschedule their appointment. People who come for normal health checkups and mild symptoms have the option of coming back to the hospital when they are free. For queue customization, having a mobile app or kiosk can allow patients to track their position in queue, get real-times updates, and provide estimated wait times. It allows them to choose the most convenient time for appointments and reduce the chance of unnecessary waiting time.

**Group Roles**

**Project Manager: Ricardo**

**Developers: All of us**

**Designers: All of us**

**Documentation Lead: Shannon**