UC Class Activity 5

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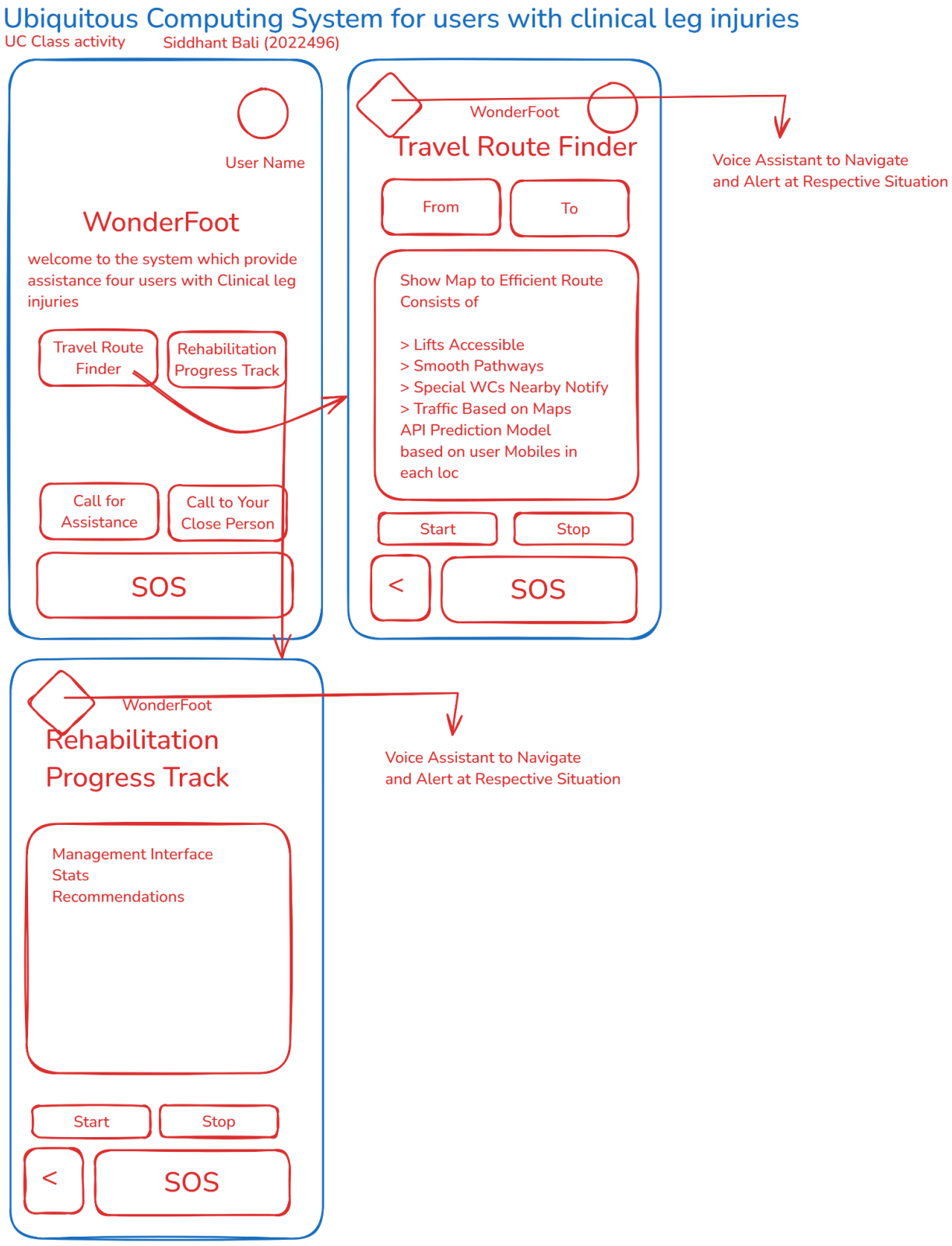
Ubiquitous Computing System for users with clinical leg injuries


Ubiquitous Computing System for users with clinical leg injuries
UC Class activity
Siddhant Bali (2022496)
User Name
WonderFoot
welcome to the system which provide assistance four users with Clinical leg injuries
Travel Route Finder
Rehabilitation Progress Track
Call for Assistance
Call to Your Close Person
SOS
WonderFoot
Travel Route Finder
From
To
Show Map to Efficient Route
Consists of
> Lifts Accessible
> Smooth Pathways
> Special WCs Nearby Notify
> Traffic Based on Maps
API Prediction Model
based on user Mobiles in each loc
Start
Stop
<
SOS
Voice Assistant to Navigate and Alert at Respective Situation
WonderFoot
Rehabilitation Progress Track
Management Interface
Stats
Recommendations
Start
Stop
<
SOS
Voice Assistant to Navigate and Alert at Respective Situation

Use Cases

1. **Efficient Travel Route Suggestion**
    - A user with a leg injury enters their destination, and the system suggests **accessible routes** with **lifts, ramps, and smooth pathways**, avoiding stairs.
    - The app provides **real-time voice navigation** and alerts about **traffic or obstacles**.
2. **Rehabilitation Progress Tracking**
    - The user logs their **daily walking patterns** and **pain levels** through **wearable sensors**.
    - The system provides **personalized recommendations** and **progress reports** for doctors or physiotherapists.

Stakeholders

- **Injured Individuals**: Primary users who need **route assistance** and **rehabilitation tracking**.
- **Physiotherapists & Doctors**: Use patient movement data for **better recovery planning**.
- **Caregivers & Family Members**: Monitor mobility status and receive **SOS alerts**.
- **Urban Planners**: Utilize **accessibility data** for **city infrastructure improvements**.

Key Features

- **Smart Route Planning**: Accessible **route suggestions** with **live traffic data**.
- **Wearable Sensor Compatibility**: Supports **smartwatches, insoles, and fitness trackers**.
- **SOS & Assistance Feature**: **Emergency call option** for caregivers and **voice alerts**.
- **Rehabilitation Monitoring**: Tracks **walking patterns, pain levels, and recovery progress**.

Sensing Modalities

- **GPS & Location Sensors**: Determine position for **optimal route recommendations**.
- **Accelerometer & Gyroscope**: Detect **gait stability and irregular walking patterns**.
- **Pressure Sensors (Smart Insoles)**: Monitor **foot pressure** to analyze rehabilitation progress.
- **Heart Rate & SpO2 Sensors**: Detect **fatigue levels** and **stress indicators**.