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"AMBULANCE DISPATCH MODULE FOR HIT-AND-RUN ACCIDENTS" UNDER THE "ALIGARH SMART CITY PROJECT"

SOFTWARE REQUIREMENTS SPECIFICATION FOR AMBULANCE DISPATCH MODULE FOR HIT-AND-RUN ACCIDENTS

26.1.24

1. Introduction

1.1 Purpose

Ambulance dispatch module for hit-and-run accidents resides in the "Aligarh Smart City Project". It aims at automating and streamlining the process of rescuing the hit-and-run victims from the accident site to the nearby hospital, thereby increasing the chances of survival and recovery.

1.2 Document Conventions

Each requirement statement is to have its own priority, which is listed next to the requirement itself. A priority of "High" indicates indicates that the given requirement is at top priority for the development team and is key to having a functional system. "Medium" priority requirements will be secondary; however, the development team still expects to

complete as many of the associated features as time allows in order to deliver a functionally equivalent system. Requirements labelled with a "low" priority are stretch goals and depend on the time available at the end of the development period. Most of these ~~features~~ requirements are additional features beyond the scope of the current feature set. They are documented for use in future development.

1.3 Intended Audience

This document is intended to help the developers and the project managers to build and verify their module's feature set. It is also intented for the testers and documentation writers for understanding the same.

1.4 Product Scope

The module will receive CCTV footage frame in realtime and will detect the incident of hit and run accidents. It would alert the nearby hospital for ambulance dispatchment if the person is left unrescued for 5 mins. If the hospital doesn't respond for hospital ambulance dispatchment within 5 mins another hospital is contacted. The module also receives acknowledgement regarding the pick-up of the victim from the accident site.

2 Overall Description

2.1 Product Perspective

The module is a new project which is a subsystem

of the "Aligarh Smart City Project" which inturn is a new project.

2.2 Product functions

- Detect hit-and-run victims, unrescued for 5 mins.
- Send alert to the nearby hospital for dispatching ambulance to the accident location.
- Receive acknowledgement from the hospital regarding ambulance dispatchment.
- Send alert to another nearby hospital for sending the ambulance, in the case when ambulance sending acknowledgement is not received within 5 minutes.
- Receive acknowledgement regarding the pick-up of the victim from the site.

2.3 User Classes and characteristics

2.3.1 User Application installed on the computers of the ~~Number Priority~~ staff responsible for dispatching ambulances.

Number	Priority	Description
UA-01	High	

2.3 User Classes and characteristics

User	Use description
User application software installed on the computers of the staff responsible for dispatching ambulances.	Uses the main software to receive alerts and location data for dispatching the ambulance. It also sends back the acknowledgement regarding:- • ambulance dispatched • patient rescued.

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2.4 Operating Environment

The product will work in a Windows 10 operating system environment

2.5 Design and Implementation Constraints

The performance of the module will depend upon the training efficiency that would be achieved

3 System Features

3.1 Functional Requirements

3.1.1 Hit and Run Victim Detection

Number	Priority	Description
HR01	High	Detect hit-and-run victim unrescued for 5 mins

3.1.2 Receive Acknowledgment Phase-1

Number	Priority	Description
AP1-01	High	Receive acknowledgement regarding ambulance dispatchment.

3.1.3 Alert Generation

Number	Priority	Description
AG-01	High	Send alert to hospital to dispatch ambulance.

3.1.4 Receive Acknowledgement phase-2

Number	Priority	Description
AP2-01	High	Receive acknowledgement regarding the pick-up of the victim from the accident site.

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3.1.5 Delay Mitigation

Number	Priority	Description
DM-01	Low	In case the dispatched ambulance does not reach the victim for some specified time interval, another hospital is redirected.

4. Non-functional Requirements

4.1 Performance Requirements

4.1.1 The module should ensure low latency in accident detection — High

4.1.2 Send alerts to nearby hospitals — High

4.1.3 Selection of ambulance with least arrival — High

4.1.4 Handle concurrent alerts — Medium

4.2 Safety Requirements

4.2.1 Location of the accident should not be modified — High

4.2.2 the module should be robust — High

5. Hardware Requirements

- Raspberry pi
- SD Card - 8GB
- Laptop or PC

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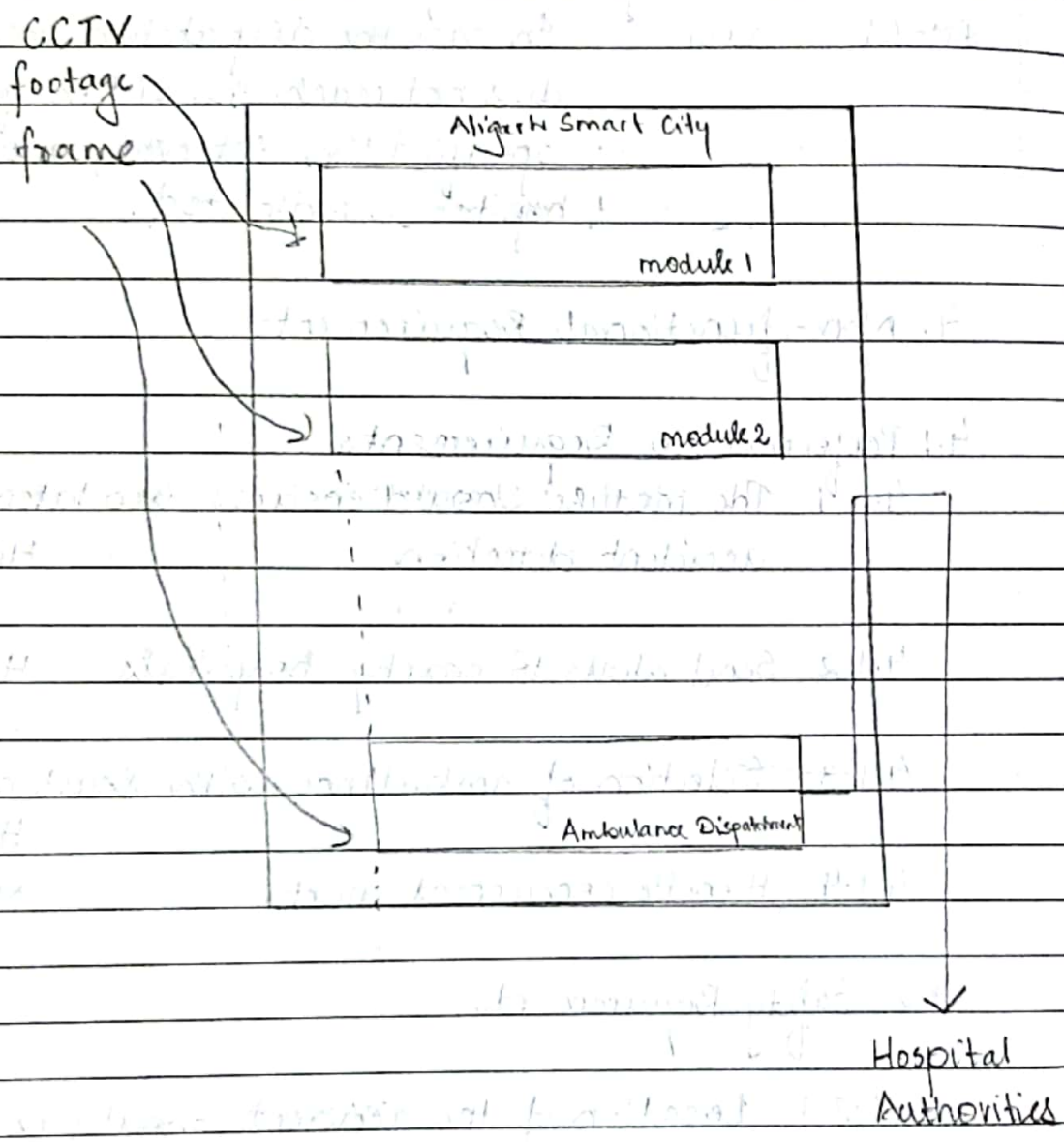
System Architecture



eye witness sends photograph to a known WA number or email.

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Use-Case Diagram

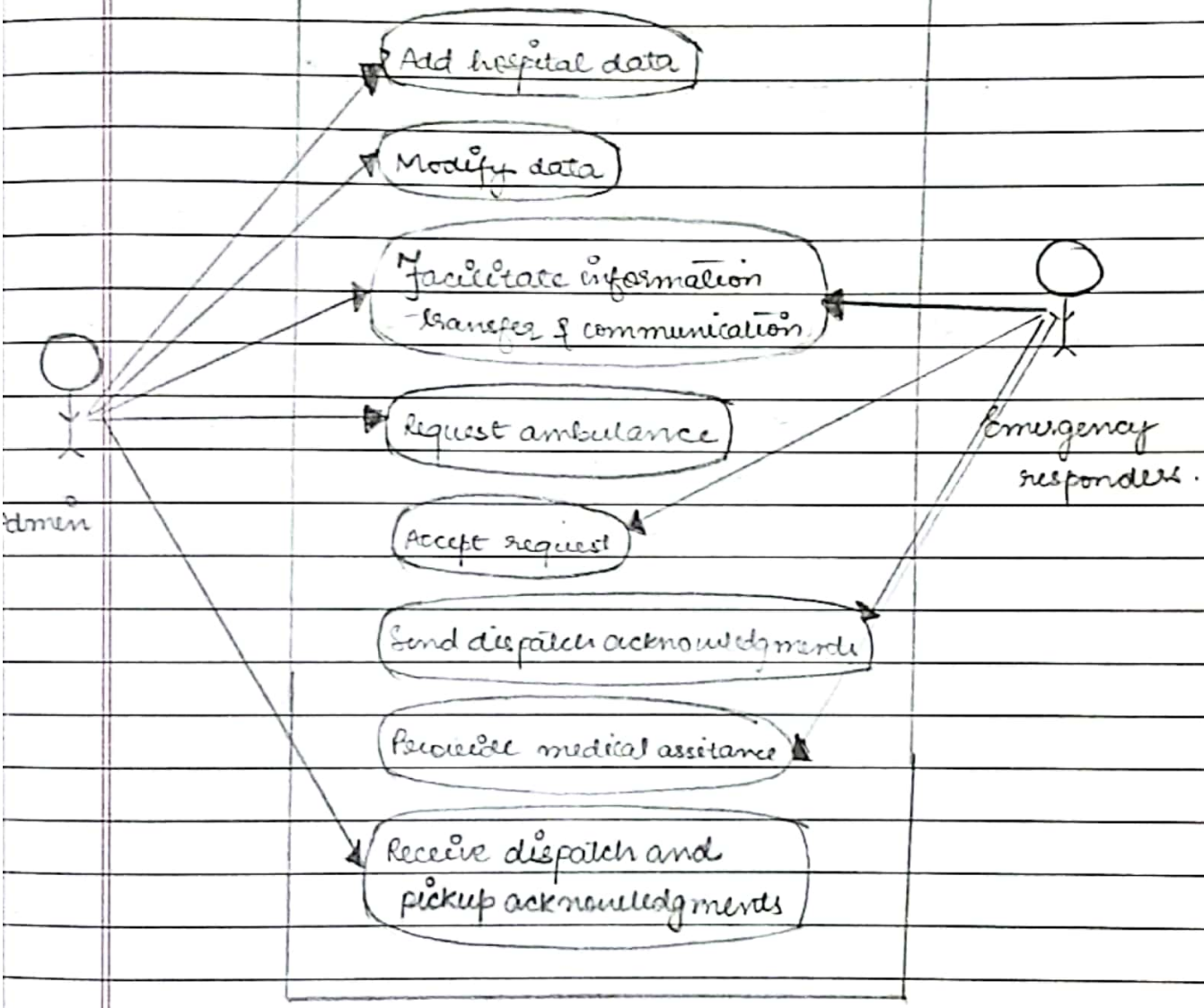

Fig: Use-case diagram.

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Flonechart

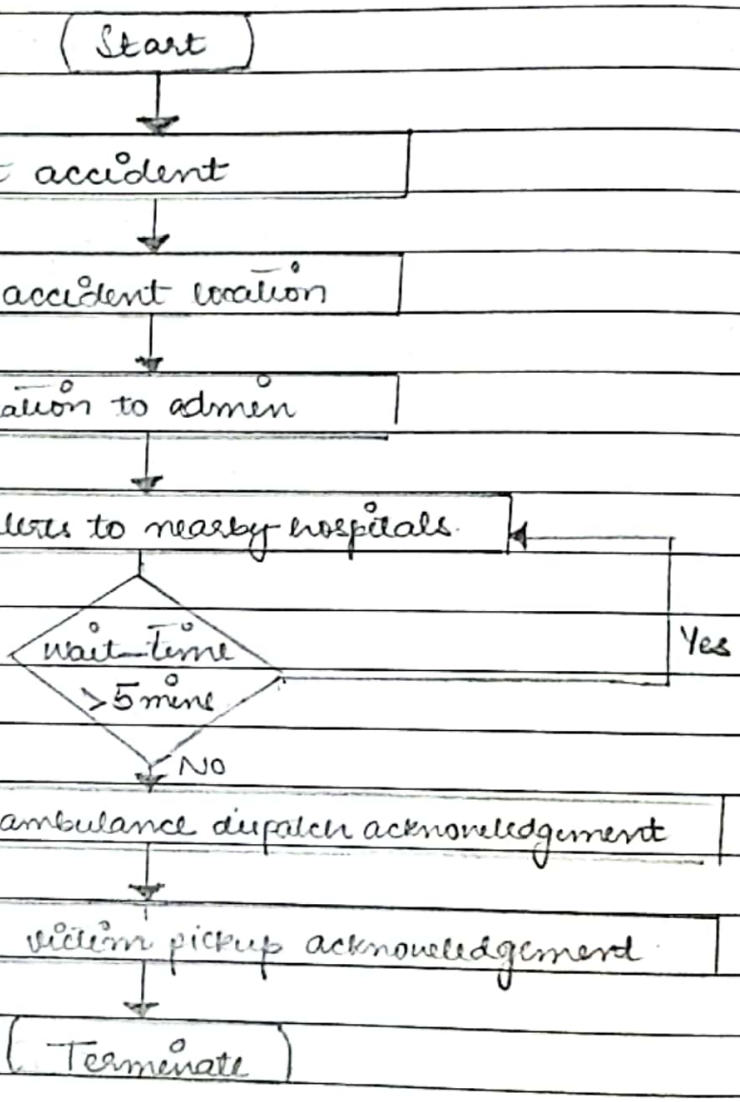

Fig : Flonechart

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