**­**

|  |  |
| --- | --- |
| **Total Marks:** | **04** |
| **Obtained Marks:** |  |

**Software Engineering**

**Assignment # 01 Section-B**

**Last date of Submission: March 7th, 2025**

**Submitted To: Mr. Awais Nawaz**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Student Name: Ubaid Bin Waris**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Reg Number: 2212416**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Q.No.1: Case Study**

London Ambulance System Disaster. 1992 In October 1992. the London Ambulance Service suffered a disaster that brought their operations to a virtual standstill over 36 hours. and up to 20–30 people may have died as a result of ambulances arriving too late on the scene.

**What to do**

The London Ambulance Service (LAS) needs a new, more reliable, and efficient software system to manage emergency calls, allocate ambulances, track real-time vehicle status, and provide improved communication between paramedics, dispatch centers, and hospitals. The current system has faced significant challenges, such as delayed response times, system crashes, and communication breakdowns during emergencies. To address these issues, a structured software development process will be used to design a new system that meets the demands of a modern, large-scale emergency service.

**Instructions:**

1. Due date & time for the assignment is 7th Mar 2025 till 5:00 PM.
2. You have to submit in both hard and soft form as well.

**Solution**

**Sake holders**

* Emergency call Handler
* Ambulance live location tracker
* Ambulance staff
* Patients
* Hospitals
* Doctors and Paramedical staff
* Insurance companies
* IT & Development team
* Telecommunication
* Government & Regulatory Bodies
* Customer Support Team

**Project Initiation & Feasibility Study**

* Identify the **core problems** (response time, system crashes, miscommunication).
* Involve **stakeholders** early (Paramedics, Dispatchers, Hospitals, IT Team, Government).
* Choose a **cloud-based, high-availability system** to ensure scalability.

**Requirement Gathering**

* Define a Product Backlog with high-priority features:
  + "As a dispatcher, I want to see ambulance locations in real-time to assign the nearest one."
  + "As a paramedic, I want to update patient status, route to the hospital."
* Implement Scrum Roles (Scrum Master, Development Team, Product Owner).

**Iteration / Increment (Sprints)**

Each sprint delivers functional improvements while gathering feedback.

**Sprint 1:**

* Develop **real-time GPS tracking** for ambulances.
* Implement **user authentication & role-based access** for dispatchers, paramedics, and hospitals.

**Sprint 2:**

* Create an **automated dispatch system** based on proximity and traffic data.
* Set up an **emergency response dashboard** for dispatch centers.

**Sprint 3:**

* Implement **mobile connectivity** for paramedics to send patient status updates in real time.
* Enable **hospital integration** for quicker ER preparation.

**Sprint 4:**

* Optimize **system performance** to handle peak emergency calls.
* Conduct **stress testing** to ensure reliability under high loads.

**Deployment & Testing**

* **Beta testing** with selected ambulance teams.
* Collect real-time feedback, fix **bugs**, and optimize for better response time.

**Maintenance & Continuous Improvement**

* Regular **system updates & security patches** to prevent failures.
* Introduce **AI-powered dispatch predictions** to improve response times.
* Scale for **future demands** (integrating drones, AI-driven diagnosis).