**HOSPITAL MANAGEMENT SYSTEM**

**USING DATA STRUCTURE**

Submitted By

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HOSPITAL MANAGEMENT SYSTEM LAB REPORT

This Report Presented in Partial Fulfillment of the course **CSE124: Data Structure**

in the **Computer Science and Engineering Department**



**DAFFODIL INTERNATIONAL UNIVERSITY**

Dhaka, Bangladesh

**DECLARATION**

We hereby declare that this lab project has been done by us under the supervision of Name of the course teacher, course teacher’s Designation, Department of Computer Science and Engineering, Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere as lab projects.

SUBMITTED TO:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Course Teacher’s Name

Designation

Department of Computer Science and Engineering

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SUBMITTED BY

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**COURSE & PROGRAM OUTCOME**

The following course have course outcomes as following:

Table 1: Course Outcome Statements

|  |  |
| --- | --- |
| CO’s | Statements |
| CO1 | Define and Relate classes, objects, members of the class, and relationships among  them needed for solving specific problems |
| CO2 | Formulate knowledge of object-oriented programming and Java in problem solving |
| CO3 | Analyze Unified Modeling Language (UML) models to Present a specific problem |
| CO4 | Develop solutions for real-world complex problems applying OOP concepts while  evaluating their effectiveness based on industry standards. |

Table 2: Mapping of CO, PO, Blooms, KP and CEP

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| CO | PO | Blooms | KP | CEP |
| CO1 | PO1 | C1, C2 | KP3 | EP1, EP3 |
| CO2 | PO2 | C2 | KP3 | EP1, EP3 |
| CO3 | PO3 | C4, A1 | KP3 | EP1, EP2 |
| CO4 | PO3 | C3, C6, A3, P3 | KP4 | EP1, EP3 |

The mapping justification of this table is provided in section 4.3.1, 4.3.2 and 4.3.3.

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**Lab report:**

**Problem Statement:**

We are working on a project **Hospital Management System** that helps manage patient admissions, prioritize treatment based on urgency, and organize staff scheduling. Hospitals often handle multiple patients with different severity levels, requiring an efficient system to ensure that critical patients are attended to promptly. This project will develop a system that manages the patient queue based on their condition's priority level, tracks patient information, and organizes staff duties.

**Problem Description:**

Design a Data Structure to input a patient information in queue and sort them based on their prioritize treatment by their given information in the engineering project described above. The data structure should allow for efficiently input a data with their names, age & other necessary information, manipulate the data while maintaining their information & search the details of a patient if needed.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SN** | **Tasks** | **K/EP** | **CO** | **PO** |
| 1. | Design a data structure to input & searching a patient information in the engineering project described above. | K5/EP1,  EP6 | CO1 | PO3 |
| 2. | Show the relationships and dependencies between adding information, searching by name, update & delete the information. | K5/EP7 |
| 3. | (i) Which technique do you apply to implement this data structure based on memory-efficient or not that solve real-life issues. | K6/EP2 | CO2,  CO4 | PO2 |
| (ii) Based on your visualization, which traversal algorithm, do you apply to efficiently and manipulate the project. | K6/EP2 | CO4 | PO2 |

1. Patient admission
2. Allocated the patient to rooms