American International University-Bangladesh (AIUB)

Data Structure Lab (Stack, Queue Related Lab Task)

********** Task 1 **********

In a hospital registration system, patients arrive one by one and are added to a waiting list based on the order of arrival. Each patient has a name, a unique ID, and a disease name. The system must allow adding new patients to the queue, but if a patient arrives who has a **Name like yours**, the system must **Reject** him/her and not add them to the list. After adding patients, the system should allow searching for patients based on a given disease name and display all patients who have that disease. This will help the medical staff quickly identify and group patients with similar illnesses. The system should also allow viewing all patients currently waiting in the queue with their full details. Implement this logic using a queue data structure and a class in C++ to manage the patient registration and search functionality.

********** Task 2 **********

In a small clinic's medicine storage system, new medicine boxes are stacked one over another as they arrive, with the most recently placed box at the top. Each medicine box has a medicine name, a batch number, and an expiry date. User should input all the details. The system allows staff to add new boxes, but if the medicine's **Expiry Date is today's date**, **it must not be added**. The staff can also search for medicine boxes based on a specific medicine name and view all boxes currently in the storage stack. Use proper data structure concept in C++ to implement this system for managing the medicine storage.