



**Dhaka University of Engineering & Technology, Gazipur**  
**Department of Computer Science and Engineering**

*Course Code: CSE 3512*

*Course Title: Algorithm Design and Analysis Sessional*

Date of Assignment:     /     /

Date of Submission:     /     /

**Assignment Name:**

1. Given an infinite stream of integers, return the element representing the k-th largest element in the stream. (Hint: Use Min-heap)
2. Suppose a hospital's emergency room is filled with individuals of various ages. Sort the patients efficiently so that the oldest patients receive care first. (Hint: Use Max-heap)
3. You are given k sorted arrays, each containing n integers. Write a function that efficiently merges these k sorted arrays into a single sorted array. (Hint: Use Min-heap)

**Submitted To**

**Dr. Md. Jakirul Islam**  
**Associate Professor**  
Dept. of CSE  
DUET, Gazipur

**Dr. Momotaz Begum**  
**Professor**  
Dept. of CSE  
DUET, Gazipur

**Mr. Khawja Imran Masud**  
**Assistant Professor**  
Dept. of CSE  
DUET, Gazipur

**Dr. Umme Fawzia Rahim**  
**Assistant Professor**  
Dept. of CSE  
DUET, Gazipur

**Submitted By**

Name:  
ID:  
Year/Semester: 3<sup>rd</sup> Year/1<sup>st</sup> Semester  
Section: A

\_\_\_\_\_  
Signature of Teacher