| **Assignment # 10**  ***Session*: Spring 2022 *Total marks*: 100**  ***Name*** : ***\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Roll number* : \_\_\_\_\_\_\_\_\_\_\_\_\_** |
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***Submission:***

• *Email instructor or TA if there are any questions. You cannot look at others’ solutions or use others’ solutions, however, you can discuss it with each other. Plagiarism will be dealt with according to the course policy.*

*• Submission after due time will not be accepted.*

**There should be a Report explaining your code and highlighting results. Follow this naming convention for your report RollNumber\_Assignment#.pdf e.g BSEE21001\_Assignment7.pdf.**

**Note:** From this assignment onwards, you will create default and parameterized constructor/s and destructor for every class.

**TASK 1:**

Create a class Person. Attributes of Person will include cnic number, name, address, phone number etc.

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**TASK 2:**

Create a class Queue as shown below:

class Queue

{

private:

int\* array;

int head; //initialized to zero

int occupied; //initialized to zero

const int max\_length = 10;

public:

void add(int); //adds an element to array at the very next available position

int remove(); //removes an element from first index of array and shift all the elements to the left

bool isEmpty(); //checks if array is empty

bool isFull(); //checks if array is full

};

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**TASK 3:**

Convert the code of Task 2 to Templates in such a way that we can add/remove a Person in a Queue. Write a driver code to test its output and report your results.

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