



Assignment

**Course:** Data Structure

**Year:** 2020



American International University-Bangladesh

Faculty of Science and Technology

Department of Computer Science

CSC 2105: Data Structure (Theory)

**Assignment-1 (Set B)**

**OBE Evaluation for CO1**

**CO1:** Distinguish between the unique properties/features of different data structures

|  |  |  |  |
| --- | --- | --- | --- |
| **Evaluation Criteria:** | Argument | Prompting | Overall Understanding |
| **Obtained Marks:** |  |  |  |

**Questions:** Consider the following array A[5]:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| A[0] | A[1] | A[2] | A[3] | A[4] |
| AAA | BBB | CCC |  |  |

Part-1:

Now, do the followings with necessary iterations of each step and illustrations (figures), also show the changes of ‘front’ and ‘rear’:

First consider the above array as a circular-queue:

1. Enqueue ‘DDD’
2. Dequeue an element
3. Dequque an element
4. Enqueue ‘EEE’, ‘FFF’, ‘GGG’, ‘HHH’, ‘III’, ‘JJJ’ consecutively.

**Answer**

1. **Enqueue ‘DDD’ :**

**Front**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| A[0] | A[1] | A[2] | A[3] | A[4] |
| AAA | BBB | CCC | DDD |  |

**Rear**

1. **Dequeue an element** **:**

**Front**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| A[0] | A[1] | A[2] | A[3] | A[4] |
|  | BBB | CCC | DDD |  |

**Rear**

1. **Dequque an element :**

**Front**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| A[0] | A[1] | A[2] | A[3] | A[4] |
|  |  | CCC | DDD |  |

**Rear**

1. **Enqueue ‘EEE’, ‘FFF’, ‘GGG’, ‘HHH’, ‘III’, ‘JJJ’ consecutively :**

**Front**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| A[0] | A[1] | A[2] | A[3] | A[4] |
| FFF | GGG | CCC | DDD | EEE |

**Rear**