**Department of Computer Science and Engineering**

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| **Course Code:CSE220** | **Credits: 1.5** |
| **Course Name: Data Structure** | **Semester: Fall’18** |

**Lab 04  
Linked List**

1. **Topic Overview:**

Students will be able to create a linked list practically. They will have hands-on practice over the basic operations on linked list including array insert, remove, reverse, rotate, sort etc.

1. **Lesson Fit:**

The lab itself should be followed by theory knowledge on the linked list data structure.

1. **Learning Outcome:**

After this lecture, the students will be able to:

* 1. Create linked list.
  2. Perform operations on link list.

1. **Anticipated Challenges and Possible Solutions**
   1. Implementation of linked list:. Students may face problem in implementation

**Solutions: Discuss the constructor class in details**

* 1. Operations on linked list: The students may not be able to implement operations on the list

**Solutions**: Demonstrate a single operation on the list and discuss its code.

1. **Acceptance and Evaluation**

Students will be evaluated according to their progress in the lab as they complete each problem. Maybe some of the students will not be able to finish all the tasks; they will submit them later and give an oral justification to get their performance mark. There will be quiz based on the previous lab.

1. **Activity Detail**
   1. **Hour: 1**

**Discussion:** Quiz Problem

**Problem Task:** Students will solve the quiz program

* 1. **Hour: 2  
     Discussion:**A quick review of the previous lab and recap the theory and basic structure of linked list which is already demonstrated in the classroom.  
     **Problem Task:** Implement a single linked list and print the element
  2. **Hour: 3**

**Discussion:**

Check the previous task and discuss the algorithm of different operations on link list.

**Problem Task:** Implement operations on link list.

1. **Home tasks**

Unfinished tasks

**Task**

1. **Create a linked list using different constructors**
2. **Print the linked list**
3. **Insert into the linked list**
4. **Get the index of an element in the list**
5. **Remove an element from the list**
6. **Reverse the list**
7. **Rotate the list toward left and right direction.**