**Homework 03 -- Questions 1 - 5**

1. Can we store a duplicate key in HashMap? How does HashMap handle collisions in Java?

2. Give some name of sorting algorithms. Among them which one you think is fastest?

3. How merge sort works? What is the time complexity for merge sort?

4. How can we traverse all the nodes of graph?

5. Write the applications of Breadth First Search (BFS) and Depth First Search (DFS).

**Programming Problems (6 – 10)**

Question 6:

Discussion:

Verification:

Question 7:

Discussion:

Verification:

Question 8:

Discussion:

Verification:

Question 9:

Discussion:

Verification:

Question 10:

Discussion:

Verification: