Exam: DS Lab Exam

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Ans1:

Source code:

```
#include <stdio.h>
int main()
{
  int n, array[1000], i, j, t, flag = 0;

  printf("Enter number of elements\n");
  scanf("%d", &n);

  printf("Enter %d integers\n", n);

  for (i = 0; i < n; i++)
    scanf("%d", &array[i]);

  for (i = 1 ; i <= n - 1; i++) {
    t = array[i];

    for (j = i - 1 ; j >= 0; j--) {
      if (array[j] > t) {
        array[j+1] = array[j];
        flag = 1;
      }
      else
        break;
    }
```

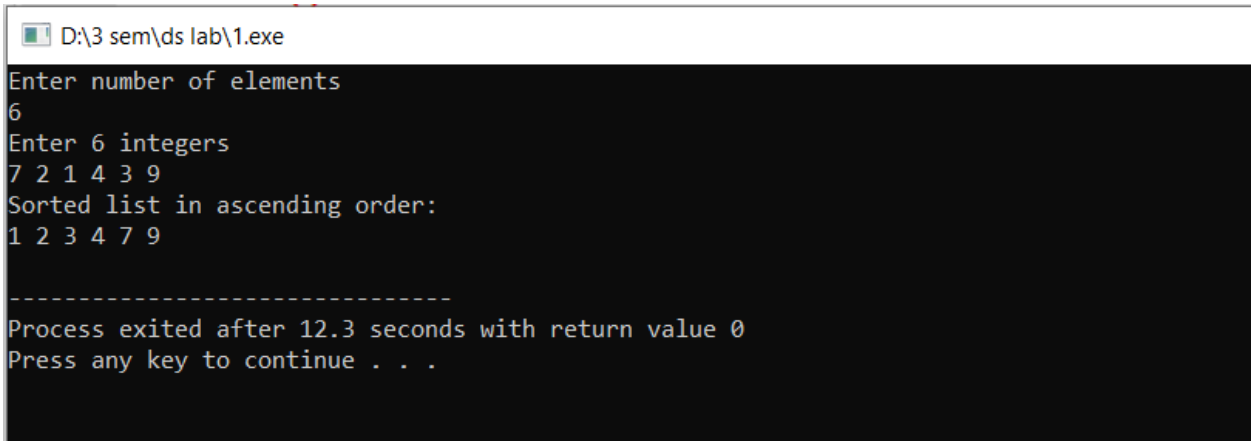
```
  if (flag)
    array[j+1] = t;
 }

 printf("Sorted list in ascending order:\n");

 for (i = 0; i <= n - 1; i++) {
  printf("%d ", array[i]);
 }printf("\n");

 return 0;
}
```

Output:



Ans2:

Source Code:

```
#include <stdio.h>
#include <stdlib.h>
#include <stdbool.h>
```

```
void BFS(int src, int V, int graph[V][V]){
   bool visited[V];
   int i=0;
   for (i = 0; i < V; ++i) visited[i] = false;

   int queue[V], front = 0, back = 0;

   visited[src] = true;
   queue[back++] = src;

   while (front < back) {
      int first = queue[front];
      printf("%d ",queue[front++]);

      for (i = 0; i < V; ++i) {
         if (graph[first][i] && !visited[i]) {
            visited[i] = true;
            queue[back++] = i;
         }
      }
   }
}


int main() {
   int V,i=0,j=0;
   printf("Enter Number of vertices: ");
   scanf("%d",&V);
   int graph[V][V];
```

```
    printf("Enter Adjacency matrix\n");
    for (i = 0; i < V; ++i) {
        for (j = 0; j < V; ++j) {
            scanf("%d",&graph[i][j]);
        }
    }
    BFS(0,V,graph);
    return 0;
}
```

Output: