

## Q1.a

```
AsifQ1A.cpp
1  #include <iostream>
2  using namespace std;
3  int main(){
4      int Array[10] = { 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 };
5      for(int i=0; i<10; i++){
6          cout<< Array[i] <<endl;
7      }
8  }
```

```
C:\Users\mujee\Downloads\AsifQ1A.exe
1
2
3
4
5
6
7
8
9
10
-----
Process exited after 4.619 seconds with return value 0
Press any key to continue . . .
```

## Q1.b

```
AsifQ1A.cpp  AsifQ1b.cpp
1  #include <iostream>
2  using namespace std;
3  int main(){
4      int Array[10] = { 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 };
5      int i=0;
6      while(i<10){
7
8          cout<< Array[i] <<endl;
9          i=i+1;
10     }
11
12 }
```

```
C:\Users\mujee\Downloads\AsifQ1b.exe
1
2
3
4
5
6
7
8
9
10
-----
Process exited after 3.978 seconds with return value 0
Press any key to continue . . .
```

**Q1.c**

```
AsifQ1A.cpp AsifQ1b.cpp AsifQ1c.cpp AsifQ1d.cpp AsifQ2.cpp AsifQ3.cpp
1  #include <iostream>
2  using namespace std;
3
4  int* insertX(int n, int arr[],
5             int x, int pos)
6  {
7      int i;
8      n++;
9      for (i = n; i >= pos; i--)
10         arr[i] = arr[i - 1];
11     arr[pos - 1] = x;
12
13     return arr;
14 }
15 int main()
16 {
17     int arr[100] = { 0 };
18     int i, x, pos, n = 10;
19     for (i = 0; i < 10; i++)
20         arr[i] = i + 1;
21     for (i = 0; i < n; i++)
22         cout << arr[i] << " ";
23     cout << endl;
24     x = 50;
25     pos = 5;
26     insertX(n, arr, x, pos);
27     for (i = 0; i < n + 1; i++)
28         cout << arr[i] << " ";
29     cout << endl;
30
31     return 0;
32 }
```

```
C:\Users\mujee\Downloads\AsifQ1c.exe
1 2 3 4 5 6 7 8 9 10
1 2 3 4 50 5 6 7 8 9 10
-----
Process exited after 4.35 seconds with return value 0
Press any key to continue . . .
```

Q1.d

```
AsifQ1A.cpp AsifQ1b.cpp AsifQ1c.cpp AsifQ1d.cpp AsifQ2.cpp AsifQ3.cpp
1  #include<bits/stdc++.h>
2  using namespace std;
3  int deleteElement(int arr[], int n, int x)
4  {
5      int i;
6      for (i=0; i<n; i++)
7          if (arr[i] == x)
8              break;
9      if (i < n)
10     {
11         n = n - 1;
12         for (int j=i; j<n; j++)
13             arr[j] = arr[j+1];
14     }
15
16     return n;
17 }
18 int main()
19 {
20     int arr[] = {11, 15, 6, 8, 9, 10};
21     int n = sizeof(arr)/sizeof(arr[0]);
22     int x = 6;
23
24     // Delete x from arr[]
25     n = deleteElement(arr, n, x);
26
27     cout << "Modified array is \n";
28     for (int i=0; i<n; i++)
29         cout << arr[i] << " ";
30
31     return 0;
32 }
```

```
C:\Users\mujee\Downloads\AsifQ1d.exe
Modified array is
11 15 8 9 10
-----
Process exited after 3.892 seconds with return value 0
Press any key to continue . . .
```

Q2.

```
AsifQ1A.cpp AsifQ1b.cpp AsifQ1c.cpp AsifQ1d.cpp AsifQ2.cpp AsifQ3.cpp
1  #include <iostream>
2  using namespace std;
3
4  int search(int arr[], int n, int x)
5  {
6      int i;
7      for (i = 0; i < n; i++)
8          if (arr[i] == x)
9              return i;
10     return -1;
11 }
12
13 int main(void)
14 {
15     int arr[] = { 2, 3, 4, 10, 40 };
16     int x = 40;
17     int n = sizeof(arr) / sizeof(arr[0]);
18     int result = search(arr, n, x);
19     (result == -1)? cout<<"Element is not present in array"
20                 : cout<<"Element is present at index " <<result;
21     return 0;
22 }
```

```
C:\Users\mujee\Downloads\AsifQ2.exe
Element is present at index 4
-----
Process exited after 4.134 seconds with return value 0
Press any key to continue . . .
```

### Q3.

```
AsifQ1A.cpp AsifQ1b.cpp AsifQ1c.cpp AsifQ1d.cpp AsifQ2.cpp AsifQ3.cpp
1 |
2 | #include <bits/stdc++.h>
3 | using namespace std;
4 | int binarySearch(int arr[], int l, int r, int x)
5 | {
6 |     if (r >= l) {
7 |         int mid = l + (r - l) / 2;
8 |         if (arr[mid] == x)
9 |             return mid;
10 |
11 |         if (arr[mid] > x)
12 |             return binarySearch(arr, l, mid - 1, x);
13 |
14 |         return binarySearch(arr, mid + 1, r, x);
15 |     }
16 |
17 |
18 |     return -1;
19 | }
20 |
21 | int main(void)
22 | {
23 |     int arr[] = { 2, 3, 4, 10, 40 };
24 |     int x = 10;
25 |     int n = sizeof(arr) / sizeof(arr[0]);
26 |     int result = binarySearch(arr, 0, n - 1, x);
27 |     (result == -1) ? cout << "Element is not present in array"
28 |                   : cout << "Element is present at index " << result;
29 |     return 0;
30 | }
```

```
C:\Users\mujee\Downloads\AsifQ3.exe
Element is present at index 3
-----
Process exited after 7.466 seconds with return value 0
Press any key to continue . . .
```