

Reality Check: Week 9

Word Problem (Question #1)

View the following C++ programming code and generate its output:

```
#include <iostream>
#define MAX 10
using namespace std;

class bubblesort{
    int arr[MAX],n;
    public:
    void getdata();
    void showdata();
    void sortLogic();
};

void bubblesort :: getdata(){
    cout<<"How many elements you require : ";
    cin>>n;
    for(int i=0;i<n;i++)
        cin>>arr[i];
}

void bubblesort :: showdata(){
    cout<<"\n--Display--\n";
    for(int i=0;i<n;i++)
        cout<<arr[i]<<" ";
}

void bubblesort :: sortLogic(){
    int temp;
    for(int i=0;i<n;i++){
        for(int j=0,exchange=0;j<n;j++){
            if(arr[j] > arr[j+1]){
                temp = arr[j];
                arr[j] = arr[j+1];
                arr[j+1] = temp;
                exchange++;
            }
        }
    }
}
```

```
        cout<<"\n arr[j] = "<<arr[j]<<"  arr[j+1] = "<<arr[j+1];
    }
}
cout<<endl;
if(exchange==0)
    break;
}
}

void main(){

    cout<<"\n*****Bubble Sort*****\n";
    bubsort obj;
    obj.getdata();
    obj.sortLogic();
    obj.showdata();

}
```

Word Problem (Question #2)

View the following C++ programming code and generate its output:

```
#include<iostream>
using namespace std;
int main()
{
    int i,j,n,loc,temp,min,a[30];
    cout<<"Enter the number of elements:";
    cin>>n;
    cout<<"\nEnter the elements\n";

    for(i=0;i<n;i++)
    {
        cin>>a[i];
    }

    for(i=0;i<n-1;i++)
    {
        min=a[i];
        loc=i;
        for(j=i+1;j<n;j++)
        {
            if(min>a[j])
            {
                min=a[j];
                loc=j;
            }
        }

        temp=a[i];
        a[i]=a[loc];
        a[loc]=temp;
    }
    cout<<"\nSorted list is as follows\n";
    for(i=0;i<n;i++)
    {
        cout<<a[i]<<" ";
    }
    return 0;    }
```

Word Problem (Question #3)

View the following C++ programming code and generate its output:

```
#include<iostream>
using namespace std;
class lsearch
{
    public:
    int data[10],n,key;
    void getdata();
    void display();
};
void lsearch :: getdata()
{
    cout<<"\nEnter the length of the array:";
    cin>>n;
    for(int i=0;i<n;i++)
    {
        cout<<"\nEnter the element in the "<<(i+1)<<" position of the array:";
        cin>>data[i];
    }
    cout<<"\nEnter the key to find the element in the array:";
    cin>>key;
}
void lsearch :: display()
{
    int flag=0;
    for(int i=0;i<n;i++)
    {
        if(key == data[i])
        {
            cout<<"\n\nThe element "<<key<<" is present in the position
"<<(i+1)<<" of the array";
            flag++;
        }
    }
    if(flag==0)
        cout<<"\nGiven key "<<key<<" is not present in the array";
}
```

```
void main()
{

    lsearch ob;
    ob.getdata();
    ob.display();

}
```

Word Problem (Question #4)

View the following C++ programming code and generate its output:

```
#include<iostream>
using namespace std;

class bsearch
{
public:
    int data[10],n,key,first,last,middle;
    void getdata();
    void display();
};

void bsearch :: getdata()
{
    cout<<"\nEnter the length of the array:";
    cin>>n;
    for(int i=0;i<n;i++)
    {
        cout<<"\nEnter the element at position"<< (i+1)<<" of the array:";
        cin>>data[i];
    }
    cout<<"\nEnter the key to find the element in the array:";
    cin>>key;
}

void bsearch :: display()
{
    first=0;
    last=n-1;
    middle=(first+last)/2;
    while(last>=first)
    {
        middle=(first+last)/2;
        if(key>data[middle])
            first=middle+1;
        else if(key<data[middle])
            last=middle-1;
        else
        {
            cout<<"\nKey "<<key<<" found in the given array";
```

```
        break;
    }
}

void main()
{

    bsearch ob;
    ob.getdata();
    ob.display();

}
```