21BCE7371

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ASSIGNMENT -6 DSA LAB

INPUT

1. SELECTION SORT

```java
public class Selection
{
    void selection(int a[])
    {
    int i, j, small;
    int n = a.length;
    for (i = 0; i < n-1; i++)
    {
        small = i;
        for (j = i+1; j < n; j++)
        if (a[j] < a[small])
            small = j;

    int temp = a[small];
    a[small] = a[i];
    a[i] = temp;
    }

}
void printArr(int a[])
{
    int i;
    int n = a.length;
    for (i = 0; i < n; i++)
    System.out.print(a[i] + " ");
}

    public static void main(String[] args) {
    int a[] = { 3, 46, 34, 5, 6, 7, 16, 24, 20, 36};
    Selection i1 = new Selection();
    System.out.println("\nBefore sorting array elements are - ");
    i1.printArr(a);
    i1.selection(a);
    System.out.println("\nAfter sorting array elements are - ");
    i1.printArr(a);
    System.out.println();
    }
}
```

OUTPUT

```
PS C:\Users\krish\Documents\java>  & 'C:\Progra
sh\AppData\Roaming\Code\User\workspaceStorage\2

Before sorting array elements are -
3 46 34 5 6 7 16 24 20 36
After sorting array elements are -
3 5 6 7 16 20 24 34 36 46
PS C:\Users\krish\Documents\java>
```

2. INSERTION SORT

INPUT

```java
public class Insert {
    void insert(int a[])
    {
        int i, j, temp;
        int n = a.length;
        for (i = 1; i < n; i++) {
            temp = a[i];
            j = i - 1;

            while (j >= 0 && temp <= a[j])
            {
                a[j + 1] = a[j];
                j = j - 1;
            }
            a[j + 1] = temp;
        }
    }

    void printArr(int a[])
    {
        int i;
        int n = a.length;
        for (i = 0; i < n; i++)
            System.out.print(a[i] + " ");
    }

    public static void main(String[] args) {
```

```java
        int a[] = { 3, 46, 34, 5, 6, 7, 16, 24, 20, 36 };
        Insert i1 = new Insert();
        System.out.println("\nBefore sorting array elements are - ");
        i1.printArr(a);
        i1.insert(a);
        System.out.println("\n\nAfter sorting array elements are - ");
        i1.printArr(a);
        System.out.println();
    }
}
```

OUTPUT

```
Windows PowerShell
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Install the latest PowerShell for new features and improvements! https://aka.ms/PSWi

PS C:\Users\krish\Documents\java>  & 'C:\Program Files\Java\jdk-18.0.1\bin\java.exe'
sh\AppData\Roaming\Code\User\workspaceStorage\2c70a5e9ead433afa7c9efeb6ea4f1c5\redha

Before sorting array elements are -
3 46 34 5 6 7 16 24 20 36

After sorting array elements are -
3 5 6 7 16 20 24 34 36 46
PS C:\Users\krish\Documents\java>
```