```
Start here X linear and binary search.c X
           #include <stdio.h>
           #include <time.h>
     2
           int linears (int i);
     3
          int binaryS(int f, int 1);
     4
     5
          void sort();
     6
          int a[10], key;
     7
          void main()
     8
     9
           int i, b, choice;
    10
           clock t start, end;
           for (i=0; i<=9; i++)
    11
    12
    13
                a[i]=rand()%100;
    14
           printf("The array of random elements are\n");
    15
    16
           for(i=0;i<=9;i++)
    17
    18
                printf("%d\n",a[i]);
    19
    20
            printf("Enter the number to be searched\n");
    21
            scanf ("%d", &key);
    22
            printf("Enter 1 for linear search and 2 for binary search \n");
    23
            scanf ("%d", &choice);
            switch (choice)
    24
    25
    26
                case 1:
    27
                        start=clock();
    28
                       b=linears(0);
    29
                       end=clock();
    30
                        printf("Time taken:%f\n",(((double)(end-start))/CLOCKS PER SEC));
    31
                        if (b==-1)
    32
                       printf("Number not found\n");
    33
                       printf("Number %d found at position: %d\n", key, b+1);
    34
    35
                       break;
    36
               case 2:sort();
    37
                      start=clock();
    38
                      b=binaryS(0,9);
    39
                      end=clock();
    40
                      printf("Time taken:%f",(((double)(end-start))/CLOCKS PER SEC));
    41
                      if (b==-1)
```

```
Start here X
          linear and binary search.c X
                       end=clock();
     39
     40
                       printf("Time taken:%f",(((double)(end-start))/CLOCKS_PER_SEC));
     41
                        if(b==-1)
     42
                         printf("Number not found\n");
     43
     44
     45
                       else
     46
     47
                         printf("Number %d found at position: %d", key, (b+1));
    48
     49
     50
     51
           void sort()
     52
          = {
     53
                int i, j, c;
     54
                for(i=0;i<9;i++)
     55
     56
                    for (j=i+1; j<=9; j++)
     57
     58
                         if(a[j]<a[i])
     59
     60
                          c=a[i];
     61
                          a[i]=a[j];
     62
                          a[j]=c;
     63
     64
     65
     66
                printf("Sorted Array is:\n");
     67
                for(i=0;i<=9;i++)
     68
     69
                  printf("%d\n",a[i]);
     70
     71
     72
           int linears (int i)
     73
     74
                if (i==10)
    75
               return -1;
    76
                else if(a[i]==key)
    77
               return i;
    78
                else
    79
               linears (++i);
<
```

```
Start here X linear and binary search.c X
    62
                       a[j]=c;
    63
    64
    65
              printf("Sorted Array is:\n");
    66
    67
              for (i=0; i<=9; i++)
    68
    69
                printf("%d\n",a[i]);
    70
    71
         LI
    72
          int linears(int i)
    73
        = (
    74
              if(i==10)
    75
              return -1;
    76
              else if(a[i]==key)
    77
              return i;
    78
              else
    79
              linears (++i);
    80
    81
          int binaryS(int f, int 1)
    82
        B{
    83
              int m;
    84
              m=((f+1)/2);
    85
              if(key==a[m])
    86
    87
                  return m;
    88
    89
              else if(key>a[m])
    90
    91
                  return binaryS(++m,1);
    92
    93
              else if (key<a[m])
    94
             {
                  return binaryS(f, --m);
    95
    96
    97
              else if(f>l)
    98
    99
                  return -1;
   100
   101
   102
```

```
The array of random elements are
41
67
34
0
69
24
78
58
62
64
Enter the number to be searched
78
Enter 1 for linear search and 2 for binary search
Sorted Array is:
0
24
34
41
58
62
64
67
69
78
Time taken:0.000000Number 78 found at position:10
Process returned 30 (0x1E) execution time : 50.809 s
Press any key to continue.
```

"C:\web developement(html.css.js)\linear and binary search.exe"