

OPERATING SYSTEM

LAB TASK – 08

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QUESTION – 1

CODE:

```
Activities Text Editor Jun 26 9:56 PM thread.c ~/Desktop
1 #include <stdio.h>
2 #include <stdlib.h>
3 #include <unistd.h>
4 #include <pthread.h>
5
6 int arr[100], n, t, key, t=0;
7 void *thread1()
8 {
9     int t=0;
10    printf("Enter range of array: ");
11    scanf("%d",&n);
12    for(i=0;i<n;i++)
13    {
14        printf("Enter number %d: ",i+1);
15        scanf("%d",&arr[i]);
16    }
17    printf("\nThread1:\n");
18    printf("Enter a number to search in array: ");
19    scanf("%d", &key);
20    for(i=0;i<n;i++)
21    {
22        if(arr[i] == key)
23            t=1;
24    }
25    if (t == 1)
26    {
27        printf("Key Element Found!\n");
28    }
29    else
30    {
31        printf("Key Not Present.\n");
32    }
33 }
```

```
Activities Text Editor Jun 26 9:57 PM thread.c ~/Desktop
34 void *thread2()
35 {
36     int t=0;
37     printf("\nThread2:\n");
38     printf("Enter a number to search in array: ");
39     scanf("%d", &key);
40     for(i=0;i<n;i++)
41     {
42         if(arr[i] == key)
43             t=1;
44     }
45     if (t == 1)
46     {
47         printf("Key Element Found!\n");
48     }
49     else
50     {
51         printf("Key Not Present.\n");
52     }
53 }
54 void *thread3()
55 {
56     int t=0;
57     printf("\nThread3:\n");
58     printf("Enter a number to search in array: ");
59     scanf("%d", &key);
60     for(i=0;i<n;i++)
61     {
62         if(arr[i] == key)
63             t=1;
64     }
65     if (t == 1)
66     {
```

```
Activities Text Editor Jun 26 10:41 PM
thread.c ~/Desktop Save
67         printf("Key Element Found!\n");
68     }
69     else
70     {
71         printf("Key Not Present.\n");
72     }
73 }
74 void *thread4()
75 {
76     int t=0;
77     printf("\nThread4:\n");
78     printf("Enter a number to search in array: ");
79     scanf("%d", &key);
80     for(l=0;l<n;l++)
81     {
82         if(arr[l] == key)
83             t=1;
84     }
85     if (t == 1)
86     {
87         printf("Key Element Found!\n");
88     }
89     else
90     {
91         printf("Key Not Present.\n");
92     }
93 }
94 void *thread5()
95 {
96     int t=0;
97     printf("\nThread5:\n");
98     printf("Enter a number to search in array: ");
99     scanf("%d", &key);
```

```
Activities Text Editor Jun 26 10:42 PM
thread.c ~/Desktop Save
102         if(arr[l] == key)
103             t=1;
104     }
105     if (t == 1)
106     {
107         printf("Key Element Found!\n");
108     }
109     else
110     {
111         printf("Key Not Present.\n");
112     }
113 }
114 int main()
115 {
116     pthread_t t1;
117     pthread_t t2;
118     pthread_t t3;
119     pthread_t t4;
120     pthread_t t5;
121
122     pthread_create(&t1,NULL,&thread1,NULL);
123     pthread_join(t1,NULL);
124     pthread_create(&t2,NULL,&thread2,NULL);
125     pthread_join(t2,NULL);
126     pthread_create(&t3,NULL,&thread3,NULL);
127     pthread_join(t3,NULL);
128     pthread_create(&t4,NULL,&thread4,NULL);
129     pthread_join(t4,NULL);
130     pthread_create(&t5,NULL,&thread5,NULL);
131     pthread_join(t5,NULL);
132
133     exit(0);
134 }
```

OUTPUT:

```
Activities Terminal Jun 26 11:02 PM kamisha@kamisha11070-virtualbox: ~/Desktop
kamisha@kamisha11070-virtualbox:~/Desktop$ gcc thread.c -o thread -pthread
kamisha@kamisha11070-virtualbox:~/Desktop$ ./thread
Enter range of array: 7
Enter number 1: 5
Enter number 2: 67
Enter number 3: 12
Enter number 4: 90
Enter number 5: 2
Enter number 6: 53
Enter number 7: 71

Thread1:
Enter a number to search in array: 10
Key Not Present.

Thread2:
Enter a number to search in array: 71
Key Element Found!

Thread3:
Enter a number to search in array: 90
Key Element Found!

Thread4:
Enter a number to search in array: 55
Key Not Present.

Thread5:
Enter a number to search in array: 5
Key Element Found!
kamisha@kamisha11070-virtualbox:~/Desktop$
```