

	COLLEGE OF COMPUTING AND INFORMATION SCIENCES		
	Lab Task # 10		
Course Title	Operating System	Total Marks	05
Date	9-11-21	Class ID	108185
Student Id	11403	Student Name	Sumaiya Saleh

Question 1:

Write a program given a large array of integers, search for a particular integer in it using 5 multi- threads.

Sample Array: 1, 5, 7, 10, 12, 14, 15, 18, 20, 22, 25, 27, 30, 64, 110, 220,23,657,43,2

Thread1:

Sample input: if key = 20

Key element found

Thread2:

Sample Input: if key = 202

Key not present

CODE:

```
#include<stdio.h>
#include<pthread.h>

int array[50],n,i,key;

void *thread1()
{
    int f=0;
    printf("Please enter your required range: \n");
    scanf("%d",&n);
    for(i=0;i<n;i++)
    {
        printf("Please Enter the number: \n");
        scanf("%d",&array[i]);
    }
    printf("Thread Number 1 \n");
    printf("Enter your key to be found: \n");
    scanf("%d",&key);
    for(i=0;i<n;i++)
    {
        if(array[i] == key)
```

```

        f=1;
    }
    if(f == 1)
    {
        printf("Key element found \n");
    }
    else{
        printf("Key not present\n");
    }
}
void *thread2()
{
    int f=0;
    printf("Thread Number 2 \n");
    printf("Enter your key to be found: \n");
    scanf("%d",&key);
    for(i=0;i<n; i++)
    {
        if(array[i] == key)
        {
            f=1;
        }
    }
    if(f == 1)
    {
        printf("Key element found \n");
    }
    else
    {
        printf("Key not present\n");
    }
}

void *thread3()
{
    int f=0;
    printf("Thread Number 3 \n");
    printf("Enter your key to be found: \n");
    scanf("%d",&key);
    for(i=0;i<n;i++)
    {
        if(array[i] == key)
            f=1;
    }
    if(f==1)
    {
        printf("Key element found \n");
    }
    else
    {
        printf("Key not present\n");
    }
}

```

```

}
void *thread4()
{
    int f=0;
    printf("Thread Number 4 \n");
    printf("Enter your key to be found: \n");
    scanf("%d",&key);
    for(i=0;i<n;i++)
    {
        if(array[i] == key)
            f=1;
    }
    if(f==1)
    {
        printf("Key element found \n");
    }
    else
    {
        printf("Key not present \n");
    }
}

void *thread5()
{
    int f=0;
    printf("Thread Number 5 \n");
    printf("Enter your key to be found: \n");
    scanf("%d",&key);
    for(i=0;i<n;i++)
    {
        if(array[i] == key)
            f=1;
    }
    if(f==1)
    {
        printf("Key element found \n");
    }
    else
    {
        printf("Key not present\n");
    }
}

int main()
{
    int n,i;
    pthread_t threadno1;
    pthread_t threadno2;
    pthread_t threadno3;
    pthread_t threadno4;
    pthread_t threadno5;

```

```

n=pthread_create(&threadno1,NULL,&thread1,NULL);
pthread_join(threadno1,NULL);

n=pthread_create(&threadno2,NULL,&thread2,NULL);
pthread_join(threadno2,NULL);

n=pthread_create(&threadno3,NULL,&thread3,NULL);
pthread_join(threadno3,NULL);

n=pthread_create(&threadno4,NULL,&thread4,NULL);
pthread_join(threadno4,NULL);

n=pthread_create(&threadno5,NULL,&thread5,NULL);
pthread_join(threadno5,NULL);
}

```

OUTPUT:

```

sumaiya@sumaiya-VirtualBox: ~/Desktop
sumaiya@sumaiya-VirtualBox:~/Desktop$ gcc -pthread -o lab lab.c
sumaiya@sumaiya-VirtualBox:~/Desktop$ ./lab
Please enter your required range:
7
Please Enter the number:
22
Please Enter the number:
555
Please Enter the number:
100
Please Enter the number:
99
Please Enter the number:
5
Please Enter the number:
710
Please Enter the number:
25
Thread Number 1
Enter your key to be found:
555
Key element found
Thread Number 2
Enter your key to be found:
1
Key not present
Thread Number 3
Enter your key to be found:
100
Key element found
Thread Number 4
Enter your key to be found:
66
Key not present
Thread Number 5
Enter your key to be found:
88
Key not present
sumaiya@sumaiya-VirtualBox:~/Desktop$

```