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20K-1044
BS-SE (5A)

LAB 8

Q1

```
ayaz@ayaz-VirtualBox:~$ gedit Q1.c
ayaz@ayaz-VirtualBox:~$ gcc Q1.c -o q -lpthread
ayaz@ayaz-VirtualBox:~$ ./q
Thread 1
Thread 2
Thread 3
Thread 1 returns : 0
Thread 2 returns : 0
Thread 3 returns : 0
```

```
ayaz@ayaz-VirtualBox: ~
File Edit View Search Terminal Help
ayaz@ayaz-VirtualBox:~$ cat Q1.c
#include <stdio.h>
#include <stdlib.h>
#include <pthread.h>

void* thread1()
{
    printf("\nThread 1\n");
}
void* thread2()
{
    printf("Thread 2\n");
}
void* thread3()
{
    printf("Thread 3\n");
}
int main()
{
    int r1,r2,r3;
    pthread_t x1,y1,z1;

    r1=pthread_create(&x1,NULL,thread1,NULL);
    r2=pthread_create(&y1,NULL,thread2,NULL);
    r3=pthread_create(&z1,NULL,thread3,NULL);
```

```
ayaz@ayaz-VirtualBox: ~  
File Edit View Search Terminal Help  
pthread_join(x1,NULL);pthread_join(y1,NULL);pthread_join(z1,NULL);  
  
    if(r1==0)  
    {  
        printf("Thread 1 returns : 0\n");  
    }  
    else  
    {  
        printf("Error");  
    }  
    if(r2==0)  
    {  
        printf("Thread 2 returns : 0\n");  
    }  
    else  
    {  
        printf("Error");  
    }  
    if(r3==0)  
    {  
        printf("Thread 3 returns : 0\n");  
    }  
    else  
    {  
        printf("Error");  
    }  
}  
ayaz@ayaz-VirtualBox:~$
```

Q2

```
student@student-lab:~$ gcc Q2.c -o obj1 -lpthread  
Q2.c: In function 'main':  
Q2.c:22:43: warning: cast to pointer from integer of different size [-Wint-to-pointer-cast]  
    pthread_create(&ttd[i],NULL,print_table,(void*)thr[i]);  
                                   ^  
Q2.c:22:31: warning: passing argument 3 of 'pthread_create' from incompatible pointer type [-Wincompatible-pointer-types]  
    pthread_create(&ttd[i],NULL,print_table,(void*)thr[i]);  
                                   ^~~~~~  
In file included from Q2.c:1:0:  
/usr/include/pthread.h:234:12: note: expected 'void * (*)(void *)' but argument is of type 'void * (*)(int)'  
    extern int pthread_create (pthread_t *__restrict __newthread,  
                             ^~~~~~  
student@student-lab:~$ ./obj1
```

Table of 5

$$1 * 5 = 5$$
$$2 * 5 = 10$$
$$3 * 5 = 15$$
$$4 * 5 = 20$$
$$5 * 5 = 25$$
$$6 * 5 = 30$$
$$7 * 5 = 35$$
$$8 * 5 = 40$$
$$9 * 5 = 45$$
$$10 * 5 = 50$$
$$11 * 5 = 55$$
$$12 * 5 = 60$$
$$13 * 5 = 65$$
$$14 * 5 = 70$$
$$15 * 5 = 75$$
$$16 * 5 = 80$$
$$17 * 5 = 85$$
$$18 * 5 = 90$$
$$19 * 5 = 95$$
$$20 * 5 = 100$$
$$21 * 5 = 105$$
$$22 * 5 = 110$$
$$23 * 5 = 115$$
$$24 * 5 = 120$$
$$25 * 5 = 125$$
$$26 * 5 = 130$$
$$27 * 5 = 135$$
$$28 * 5 = 140$$
$$29 * 5 = 145$$
$$30 * 5 = 150$$
$$31 * 5 = 155$$
$$32 * 5 = 160$$
$$33 * 5 = 165$$

```
2 c122143: warning: cast to pointer from
      objvoid create(8)[d1], NULL print lab
```

Table of 7

1	*	7	=	7
2	*	7	=	14
3	*	7	=	21
4	*	7	=	28
5	*	7	=	35
6	*	7	=	42
7	*	7	=	49
8	*	7	=	56
9	*	7	=	63
10	*	7	=	70
11	*	7	=	77
12	*	7	=	84
13	*	7	=	91
14	*	7	=	98
15	*	7	=	105
16	*	7	=	112
17	*	7	=	119
18	*	7	=	126
19	*	7	=	133
20	*	7	=	140
21	*	7	=	147
22	*	7	=	154

Table of 8

1	*	8	=	8
2	*	8	=	16
3	*	8	=	24
4	*	8	=	32
5	*	8	=	40
6	*	8	=	48
7	*	8	=	56
8	*	8	=	64
9	*	8	=	72
10	*	8	=	80
11	*	8	=	88
12	*	8	=	96
13	*	8	=	104
14	*	8	=	112
15	*	8	=	120
16	*	8	=	128
17	*	8	=	136
18	*	8	=	144
19	*	8	=	152
20	*	8	=	160
21	*	8	=	168
22	*	8	=	176
23	*	8	=	184

Table of 5

1	*	5	=	5
2	*	5	=	10
3	*	5	=	15
4	*	5	=	20
5	*	5	=	25
6	*	5	=	30
7	*	5	=	35
8	*	5	=	40
9	*	5	=	45
10	*	5	=	50
11	*	5	=	55
12	*	5	=	60
13	*	5	=	65
14	*	5	=	70
15	*	5	=	75
16	*	5	=	80
17	*	5	=	85
18	*	5	=	90
19	*	5	=	95
20	*	5	=	100
21	*	5	=	105
22	*	5	=	110
23	*	5	=	115
24	*	5	=	120
25	*	5	=	125
26	*	5	=	130
27	*	5	=	135
28	*	5	=	140
29	*	5	=	145
30	*	5	=	150
31	*	5	=	155
32	*	5	=	160
33	*	5	=	165

Open ▾



Q2.c
~/

Save



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

void* print_table(int n){
    printf("\nTable of %d ", n);

    for(int i = 0; i < 1000; i++)
    {

        printf("\n%d * %d = %d ", i + 1, n , (i+1)*n);

    }
}

int main()
{

    pthread_t tid[4];
    int thr[4] = {5,6,7,8};

    for(int i = 0; i < 4; i++){
        pthread_create(&tid[i],NULL,print_table,(void*)thr[i]);

    }
    for(int i = 0; i < 4; i++)
    {

        pthread_join(tid[i],NULL);

    }

}
```

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INS

Q3

```
ayaz@ayaz-VirtualBox:~$ gedit Q3.c
ayaz@ayaz-VirtualBox:~$ ./q3
How many threads are there to be created?
5
I am thread 2541307648. Created new thread (2532980480) in iteration 1
Hello from thread 2532980480 - I was created in iteration 1
I am thread 2541307648. Created new thread (2524587776) in iteration 2
I am thread 2541307648. Created new thread (2516195072) in iteration 3
Hello from thread 2524587776 - I was created in iteration 2
Hello from thread 2516195072 - I was created in iteration 3
I am thread 2541307648. Created new thread (2507802368) in iteration 4
Hello from thread 2507802368 - I was created in iteration 4
I am thread 2541307648. Created new thread (2499409664) in iteration 5
Hello from thread 2499409664 - I was created in iteration 5
```

Q4

```
ayaz@ayaz-VirtualBox:~$ gedit Q4.c
ayaz@ayaz-VirtualBox:~$ gcc Q4.c -o q4 -lpthread
ayaz@ayaz-VirtualBox:~$ ./q4
Sum of 10 elemnt of array is: 55 ayaz@ayaz-VirtualBox:~$
```

```
cat Q4.c
#include<stdio.h>
#include<stdlib.h>
#include<pthread.h>

int arr[] = {1,2,3,4,5,6,7,8,9,10};
int arr_sum[4] = { 0 };
int count = 0;

void* sum_array(void* arg)
{
    int tp = count++;

    for (int i = tp * (16/ 4); i < (tp + 1) * (16 / 4); i++)
        arr_sum[tp] =arr_sum[tp]+ arr[i];
}

int main()
{
    pthread_t t[4];

    for (int i = 0; i < 4; i++)
        pthread_create(&t[i], NULL, sum_array, (void*)NULL);
```

```
    for (int i = 0; i < 4; i++)
        pthread_join(t[i], NULL);

    int total = 0;
    for (int i = 0; i < 4; i++)
        total=total+ arr_sum[i];

    printf("Sum of 10 elemnt of array is: %d ",total);
}
ayaz@ayaz-VirtualBox:~$
```

Q 5

```
Open ▾ [Icon] Save
```

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

void* handling(char* x)
{
    printf("\n Volunteers %s",x);
}

int main()
{
    pthread_t id[4];
    char *volenter[4]={"On day registration","announcment","sponsors","queries"};
    for(int i=0;i<100;i++)
    {
        srand(time(NULL));
        int num=1+rand()%4;
        switch (num)
        {
            case 1:
                pthread_create(&id[0],NULL,handling,(void*)volenter[0]);

            case 2:
                pthread_create(&id[1],NULL,handling,(void*)volenter[1]);

            case 3:
                pthread_create(&id[2],NULL,handling,(void*)volenter[2]);

            case 4:
                pthread_create(&id[3],NULL,handling,(void*)volenter[3]);
        }
    }
}
```

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Volunteers sponsors
Volunteers queries
Volunteers sponsors
Volunteers announcment
Volunteers sponsors
Volunteers announcment
Volunteers queries
Volunteers sponsors
Volunteers queries
Volunteers sponsors
Volunteers announcment
Volunteers queries
Volunteers announcment
Volunteers announcment
Volunteers queries
Volunteers sponsors
Volunteers announcment
Volunteers sponsors
Volunteers queries
Volunteers queries
Volunteers announcment
Volunteers sponsors
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