



**Fatima Jinnah Women University**  
Department of Software Engineering

# LAB 9

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**Name:** Raifa Khalid

**Reg. no:** 2020-BSE-024

**Section:** A

**Semester:** Third

**Course:** Operating System (LAB)

## EXAMPLE # 1

```
fjwu@ubuntu:~$ gedit threads.c
fjwu@ubuntu:~$ gcc threads.c -lpthread
fjwu@ubuntu:~$ ./a.out
Inside Thread
0
1
2
3
4
Inside Main Program
20
21
22
23
24
fjwu@ubuntu:~$
```

```
Open  threads.c
~/
#include <unistd.h>
#include <stdlib.h>
#include <stdio.h>
#include <pthread.h>
void *thread_function(void *arg);
int i,j;
int main()
{
    pthread_t a_thread;
    pthread_create(&a_thread,NULL,thread_function,NULL);
    pthread_join(a_thread,NULL);
    printf("Inside Main Program \n");
    for(j=20;j<25;j++)
    {
        printf("%d\n",j);
        sleep(1);
    }
}
void *thread_function(void *arg)
{
    printf("Inside Thread\n");
    for(i=0;i<5;i++)
    {
        printf("%d\n",i);
        sleep(1);
    }
}
```

## EXAMPLE # 2

```
Open threads.c Save
#include <unistd.h>
#include <stdlib.h>
#include <stdio.h>
#include <pthread.h>
#include <string.h>
void *thread_function(void *arg);
int i,j,n;
int main()
{
    char *m="5";
    pthread_t a_thread;
    void *result;
    pthread_create(&a_thread,NULL,thread_function,m);

    pthread_join(a_thread,&result);
    printf("Thread joined \n");
    for(j=20;j<25;j++)
    {
        printf("%d\n",j);
        sleep(1);
    }
    printf("thread returned %s\n",(char *)result);
}
void *thread_function(void *arg)
{
    int sum=0;
    n=atoi(arg);
    for(i=0;i<n;i++)
    {
        printf("%d\n",i);
        sleep(1);
    }
    pthread_exit("Done");
}
```

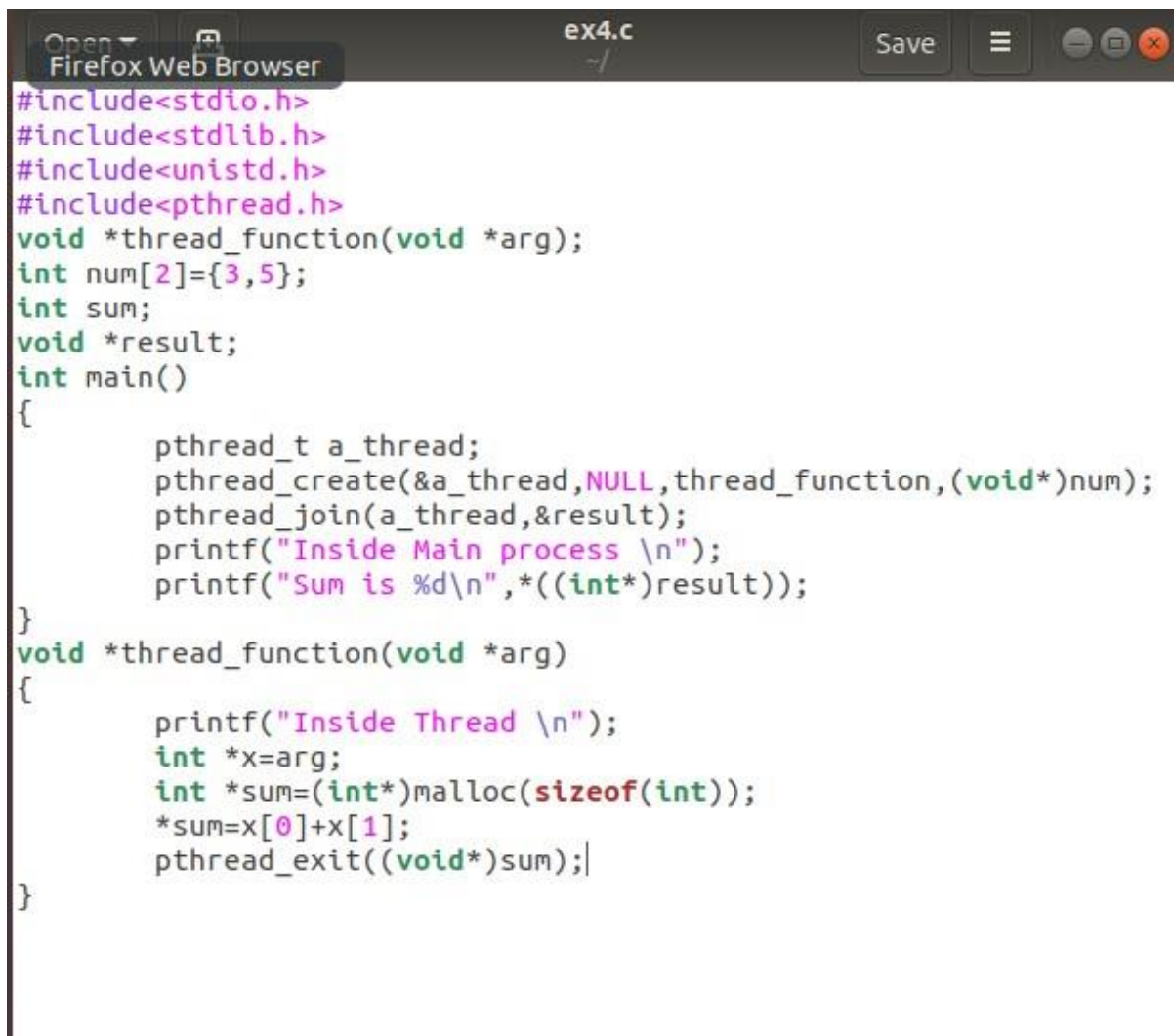
```
fjwu@ubuntu:~$ gedit threads.c
fjwu@ubuntu:~$ gcc threads.c -lpthread
fjwu@ubuntu:~$ ./a.out
0
1
2
3
4
Thread joined
20
21
22
23
24
thread returned Done
fjwu@ubuntu:~$
```

## EXAMPLE # 3

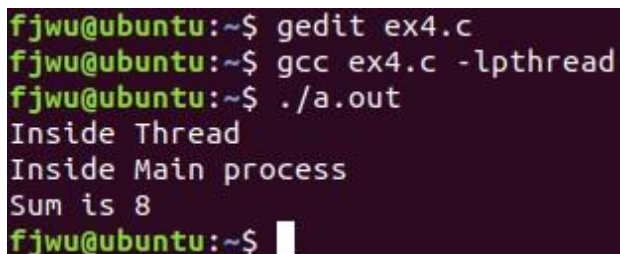
```
Open ▾ ex3.c Save ≡  
~/  
#include <stdio.h>  
#include <pthread.h>  
struct arg_struct  
{  
    int arg1;  
    int arg2;  
};  
void *arguments(void *arguments)  
{  
    struct arg_struct*args=arguments;  
    printf("%d\n",args->arg1);  
    printf("%d\n",args->arg2);  
    pthread_exit(NULL);  
}  
int main()  
{  
    pthread_t t;  
    struct arg_struct args;  
    args.arg1=5;  
    args.arg2=7;  
    pthread_create(&t,NULL,arguments,&args);  
    pthread_join(t,NULL);  
}
```

```
fjwu@ubuntu:~$ gedit ex3.c  
fjwu@ubuntu:~$ gcc ex3.c -lpthread  
fjwu@ubuntu:~$ ./a.out  
5  
7  
fjwu@ubuntu:~$
```

## EXAMPLE # 4



```
Open Firefox Web Browser ex4.c Save
#include<stdio.h>
#include<stdlib.h>
#include<unistd.h>
#include<pthread.h>
void *thread_function(void *arg);
int num[2]={3,5};
int sum;
void *result;
int main()
{
    pthread_t a_thread;
    pthread_create(&a_thread,NULL,thread_function,(void*)num);
    pthread_join(a_thread,&result);
    printf("Inside Main process \n");
    printf("Sum is %d\n",*((int*)result));
}
void *thread_function(void *arg)
{
    printf("Inside Thread \n");
    int *x=arg;
    int *sum=(int*)malloc(sizeof(int));
    *sum=x[0]+x[1];
    pthread_exit((void*)sum);
}
```



```
fjwu@ubuntu:~$ gedit ex4.c
fjwu@ubuntu:~$ gcc ex4.c -lpthread
fjwu@ubuntu:~$ ./a.out
Inside Thread
Inside Main process
Sum is 8
fjwu@ubuntu:~$
```