Thread creation

**Program 1:**   
//Program to create a thread. The thread prints numbers from zero to n, where value of n is passed from the main process to the thread. The main process also waits for the thread to finish first and then prints from 20-24.   
  
#include <stdio.h>  
#include <unistd.h>  
#include <stdlib.h>  
#include <pthread.h>  
#include<string.h>  
void \*thread\_function(void \*arg);   
int i,n,j;  
int main() {  
char \*m="5";   
pthread\_t a\_thread;  //thread declaration  
void \*result;  
pthread\_create(&a\_thread, NULL, thread\_function, m); //thread is created  
pthread\_join(a\_thread, &result); //process waits for thread to finish . Comment this line to see the difference  
printf("Thread joined\n");  
for(j=20;j<25;j++)  
{  
printf("%d\n",j);  
sleep(1);  
}  
printf("thread returned %s\n",result);  
}  
void \*thread\_function(void \*arg) {    // the work to be done by the thread is defined in this function  
int sum=0;  
n=atoi(arg);  
  
for(i=0;i<n;i++)  
{  
printf("%d\n",i);  
sleep(1);  
}  
pthread\_exit("Done"); // Thread returns "Done"   
}

//program with while loop

#include <stdio.h>

#include <pthread.h>

#include <stdlib.h>

void \*thread1(int n)

{

int i=0;

while(i<=n)

/\*void \* thread2() \*/

{

printf("%d \n",i);

i++;

}

}

main()

{

//int status;

int j=20;

printf("enter n:");

scanf("%d",&n);

pthread\_t tid1;

pthread\_create(&tid1,NULL,thread1,n);

//pthread\_create(&tid2,NULL,thread2,NULL);

pthread\_join(tid1,NULL);

// pthread\_join(tid2,NULL);

printf("Thread joined\n");

/\*for(j=20;j<25;j++)

{

printf("%d\n",j); \*/

sleep(2);

while(j<=24)

{

printf("%d \n",j);

j++;

}

}

**Program 2:**  
  
//Program to create a thread. The thread is passed more than one input from the main process.  
//For passing multiple inputs we need to create structure and include all the variables that are to be passed in this structure.  
  
#include <stdio.h>  
#include <pthread.h>  
  
struct arg\_struct {   //structure which contains multiple variables that are to passed as input to the thread  
    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); //structure passed as 4th argument  
          
    pthread\_join(t, NULL); /\* Wait until thread is finished \*/  
}