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**Enrolment No - 2020ITB007**

**OS Lab**

**Assignment 3**

**Write a multithreaded program to check whether a given number is 1. odd or even. 2. prime number or not? 3. square number or not? You may write your code in any language that can interface properly with the pthreads library. C or C++ is probably the easiest.**

#include <stdio.h>

#include <stdlib.h>

#include <pthread.h>

#include <unistd.h>

void \*Evenodd(void \*n)

{

    int m;

    m = \*(int \*)n;

    if ((m) % 2 == 0)

        printf("Even Number\n");

    else

        printf("Odd Number\n");

}

void \*IsPrime(void \*n)

{

    int m;

    m = \*(int \*)n;

    int flag = 0;

    if (m == 1)

        printf("Is Not IsPrime\n");

    for (int i = 2; i \* i <= m; i++)

    {

        if (m % i == 0)

            flag = 1;

    }

    if (flag)

        printf("Not an Prime number\n");

    else

        printf("Prime Number\n");

}

void \*IsSquare(void \*n)

{

    int m;

    m = \*(int \*)n;

    for (int i = 0; i \* i <= m; i++)

    {

        printf("Square of number %d\n", i);

    }

    printf("Not a Square Number\n");

}

int main(int argc, char \*argv[])

{

    int \*n, m;

    void \*res1, \*res2, \*res3;

    printf("Enter Your Number\n");

    scanf("%d", &m);

    n = &m;

    pthread\_t t1, t2, t3;

    int s, r, t;

    //   Thread 1

    s = pthread\_create(&t1, NULL, Evenodd, n);

    if (s != 0)

        printf("pthread\_create");

    s = pthread\_join(t1, &res1);

    if (s != 0)

        printf("pthread\_join");

    printf("Thread 1 Return: %ld\n\n", (long)res1);

    // Thread 2

    r = pthread\_create(&t2, NULL, IsPrime, n);

    if (r != 0)

        printf("pthread\_create");

    s = pthread\_join(t2, &res2);

    if (r != 0)

        printf("pthread\_join");

    printf("Thread 2 Return: %ld\n\n", (long)res2);

    // Thread 3

    t = pthread\_create(&t3, NULL, IsSquare, n);

    if (t != 0)

        printf("pthread\_create");

    t = pthread\_join(t3, &res3);

    if (t != 0)

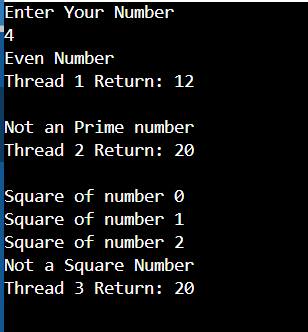
        printf("pthread\_join");

    printf("Thread 3 Return: %ld\n\n", (long)res3);

    exit(0);

}

**OUTPUT**

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