**OPERATING SYSTEM LAB 8**

**Q1.**

PROGRAM:

#include <stdlib.h>

#include <stdio.h>

#include <pthread.h>

#include <string.h>

void \*thread\_code(void\* param)

{

int n = \*((int\*)param);

int arr[n];

arr[0] = 0;

arr[1] = 1;

for (int i = 2; i < n; i++)

arr[i] = arr[i - 2] + arr[i - 1];

int \*sol = (int \*)calloc(n, sizeof(int));

memcpy(sol, arr, sizeof(int) \* n);

return sol;

}

void main()

{

int n;

printf("Enter no. of terms: ");

scanf("%d", &n);

void \*arr;

pthread\_t thread;

pthread\_create(&thread, 0, &thread\_code, (void\*)&n);

printf("Thread created!\n");

pthread\_join(thread, &arr);

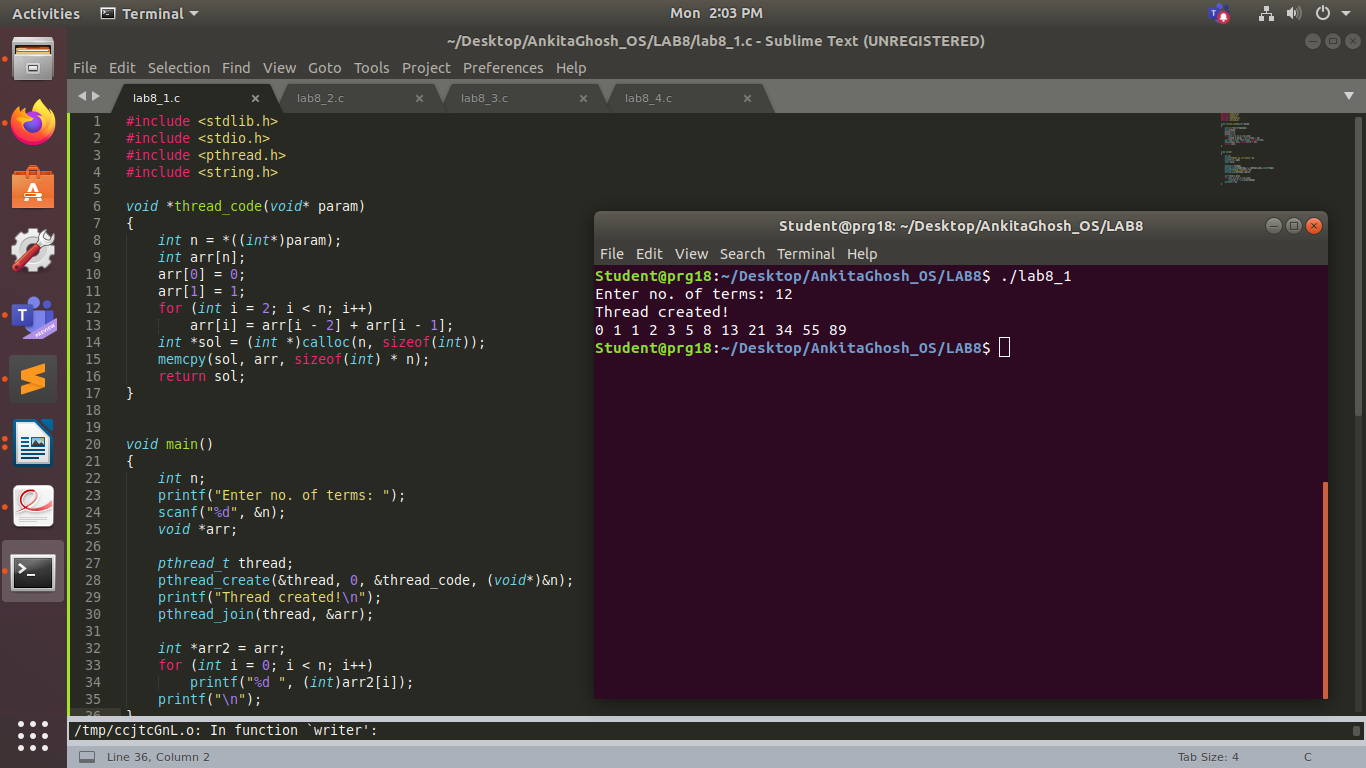
int \*arr2 = arr;

for (int i = 0; i < n; i++)

printf("%d ", (int)arr2[i]);

printf("\n");

}  
  
OUTPUT:



**Q2.**

PROGRAM:

#include <stdlib.h>

#include <stdio.h>

#include <pthread.h>

#include <string.h>

void\* thread\_code(void\* n)

{

int sum = 0;

int limit = \*((int\*)n);

for (int i = 1; i <= limit; i++)

sum += i;

\*((int\*)n) = sum;

}

void main()

{

int n, num;

printf("Enter no. of elements: ");

scanf("%d", &n);

num = n;

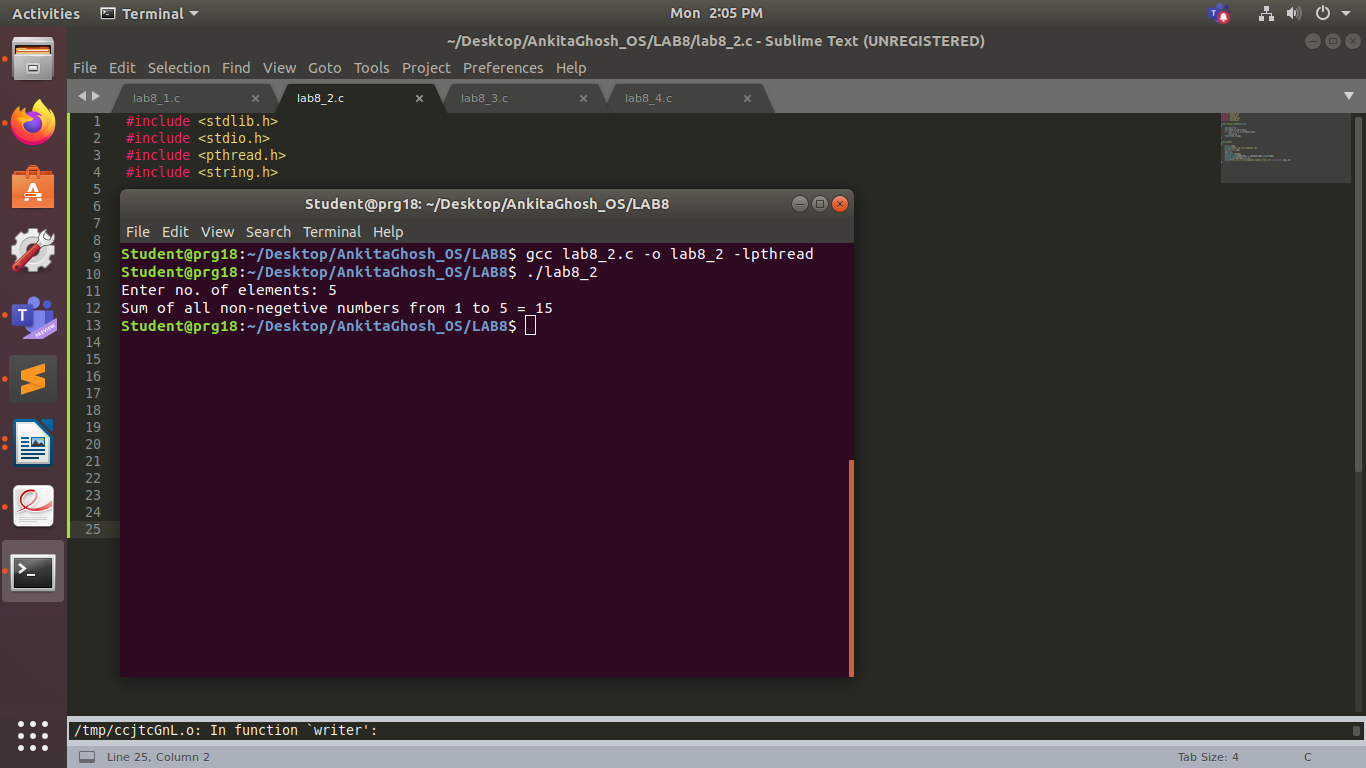
pthread\_t thread;

pthread\_create(&thread, 0, &thread\_code, (void\*)&n);

pthread\_join(thread, NULL);

printf("Sum of all non-negetive numbers from 1 to %d = %d\n", num, n);

}  
  
OUTPUT:



**Q3.**

PROGRAM:

#include <stdlib.h>

#include <stdio.h>

#include <pthread.h>

#include <string.h>

void \*prime(void\* arr)

{

int n1 = \*((int\*)arr);

int n2 = \*(((int\*)(arr + sizeof(int))));

printf("Prime numbers: ");

for (int i = n1; i <= n2; i++)

{

int flag = 0;

for (int j = 2; j <= i / 2; j++)

{

if ((i % j) == 0)

{

flag = 1;

break;

}

}

if (flag == 0)

printf("%d ", i);

}

printf("\n");

}

int main()

{

int arr[2];

printf("Enter lower limit: ");

scanf("%d", &arr[0]);

printf("Enter upper limit: ");

scanf("%d", &arr[1]);

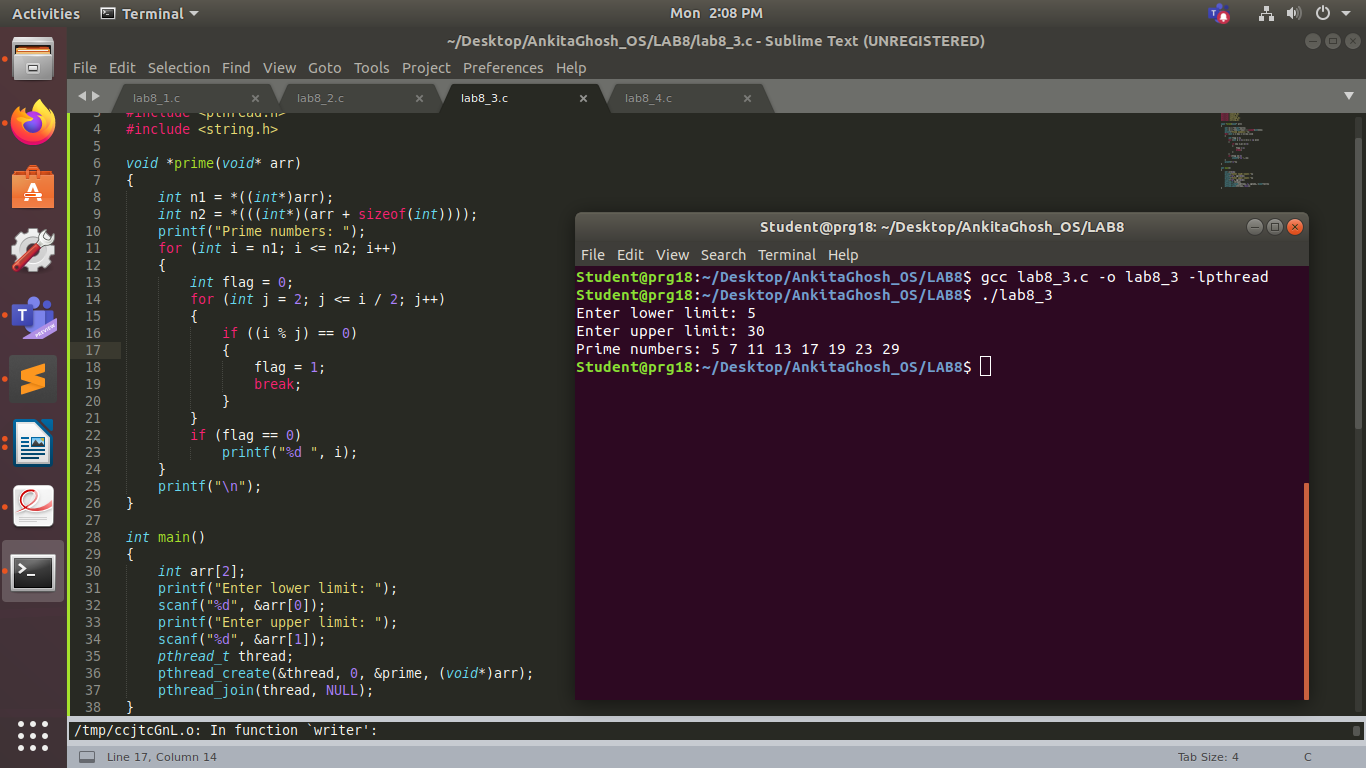
pthread\_t thread;

pthread\_create(&thread, 0, &prime, (void\*)arr);

pthread\_join(thread, NULL);

}

OUTPUT:



**Q4.**

PROGRAM:

#include <stdlib.h>

#include <stdio.h>

#include <pthread.h>

#include <string.h>

void \* even(void \*brr)

{

int \*arr = (int\*)brr;

int size = arr[0];

int sum = 0;

for (int i = 1; i <= size; i++)

if (arr[i] % 2 == 0)

sum += arr[i];

return (void \*) sum;

}

void \* odd(void \*brr)

{

int \*arr = (int\*)brr;

int size = arr[0];

int sum = 0;

for (int i = 1; i <= size; i++)

if (arr[i] % 2 != 0)

sum += arr[i];

return (void \*) sum;

}

int main()

{

int n, e, o;

printf("Enter size of array: ");

scanf("%d", &n);

int arr[n + 1];

arr[0] = n;

printf("Enter elements:\n");

for (int i = 1; i <= n; i++)

scanf("%d", &arr[i]);

pthread\_t t1, t2;

pthread\_create(&t1, 0, &even, (void \*)arr);

pthread\_create(&t2, 0, &odd, (void \*)arr);

pthread\_join(t1, (void\*) &e);

pthread\_join(t2, (void\*) &o);

printf("Sum of even numbers = %d\n", (int)e);

printf("Sum of odd numbers = %d\n", (int)o);

}

OUTPUT:

