Bahria University,

Karachi Campus

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LAB EXPERIMENT NO.

**8**

LIST OF TASKS

|  |  |
| --- | --- |
| TASK NO | OBJECTIVE |
| 1 | Explore HTOP, including its options. Attach outputs for the same. |
| 2 | Write a multithreaded C program for performing summation of numbers. |
| 3 | Write a program which make 4 threads. Each thread will print one table out of [5678] up to 1000. |
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Submitted On:

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(Date: 30/05/22)

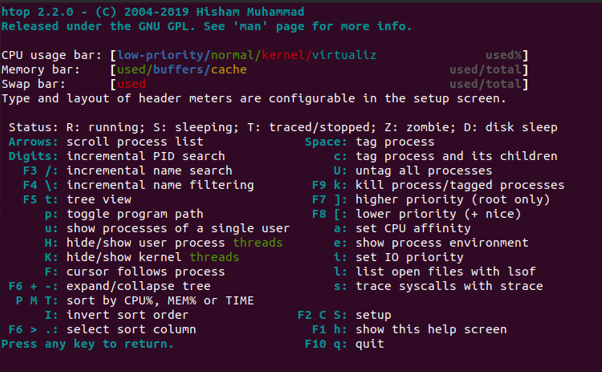
**Task 1: Explore HTOP, including its options. Attach outputs for the same.**

**Solution:**

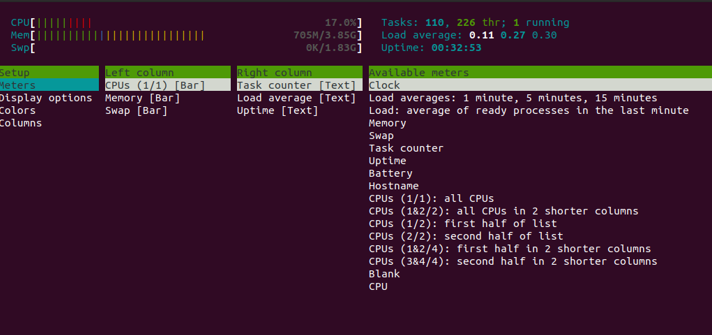




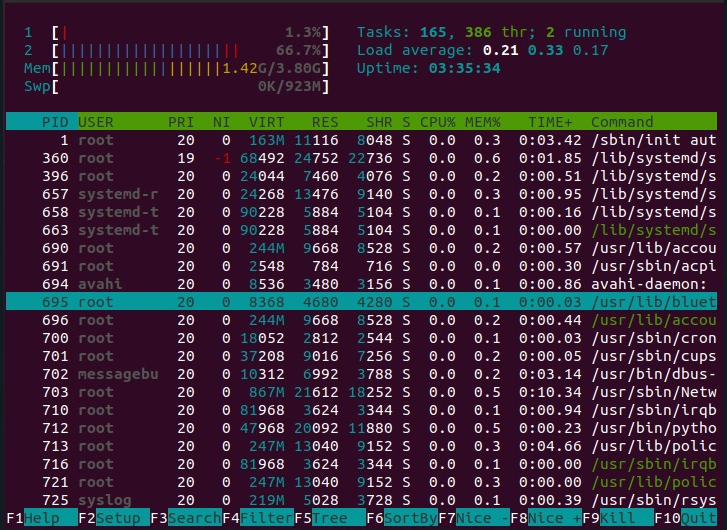
**Output:**



**F2 Setup:**



**F5 TREE:**



**Task 2: Write a multithreaded C program for performing summation of numbers.**

**Solution:**

#include <stdio.h>

#include <unistd.h>

#include <pthread.h>

int sum;

int array[2];

void \*AddNumbers(void \*arg);

void main()

{

pthread\_t thread1;

printf("Enter Number 1: \n");

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

printf("Enter Numnber 2: \n");

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

pthread\_create(&thread1, NULL, AddNumbers, array);

pthread\_join(thread1, NULL);

}

void \*AddNumbers (void \*arg)

{

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

int n1= arr[0];

int n2= arr[1];

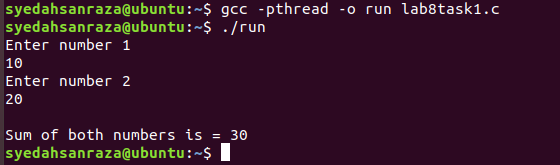
sum = n1 + n2;

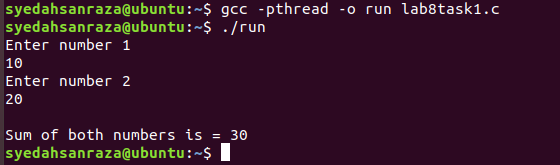
printf("\nSum of both numbers = %d \n", sum);

pthread\_exit(0);

}

**Output:**





**Task 3: Write a program which make 4 threads. Each thread will print one table out of [5678] up to 1000.**

**Solution:**

#include <stdio.h>

#include <unistd.h>

#include <pthread.h>

int num = 5;

int array[3];

void \* Tables(void \*arg);

void main()

{

pthread\_t thread1;

pthread\_t thread2;

pthread\_t thread3;

pthread\_t thread4;

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

{

array[i] = num;

num++;

}

num = 5;

pthread\_create(&thread1, NULL, Tables, array);

pthread\_join(thread1, NULL);

num++;

pthread\_create(&thread2, NULL, Tables, array);

pthread\_join(thread2, NULL);

num++;

pthread\_create(&thread3, NULL, Tables, array);

pthread\_join(thread3, NULL);

num++;

pthread\_create(&thread4, NULL, Tables, array);

pthread\_join(thread4, NULL);

}

void \*Tables(void \*arg)

{

for (int i = 1; i <= 1000; i++)

{

switch (num){

case 5:

printf("%d x %d = %d\n", array[0], i, array[0] \* i);

break;

case 6:

printf("%d x %d = %d\n", array[1], i, array[1] \* i);

break;

case 7:

printf("%d x %d = %d\n", array[2], i, array[2] \* i);

break;

case 8:

printf("%d x %d = %d\n", array[3], i, array[3] \* i);

break;

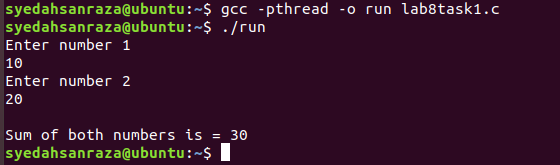
}

}

pthread\_exit(0);

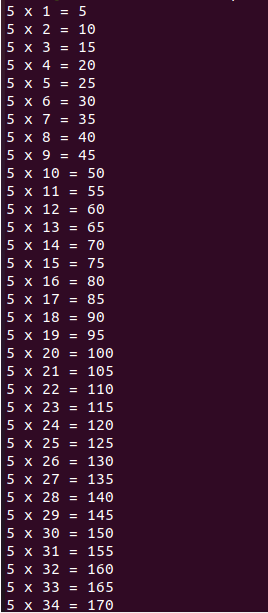
}

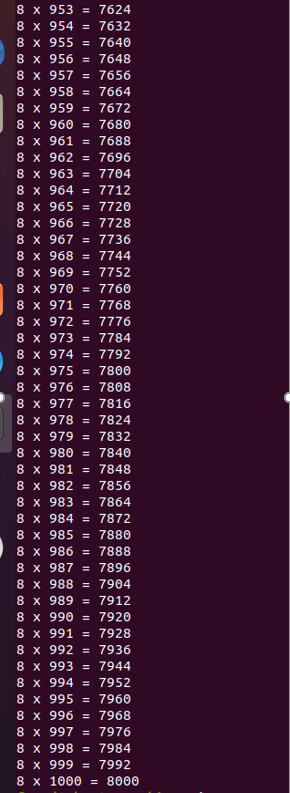
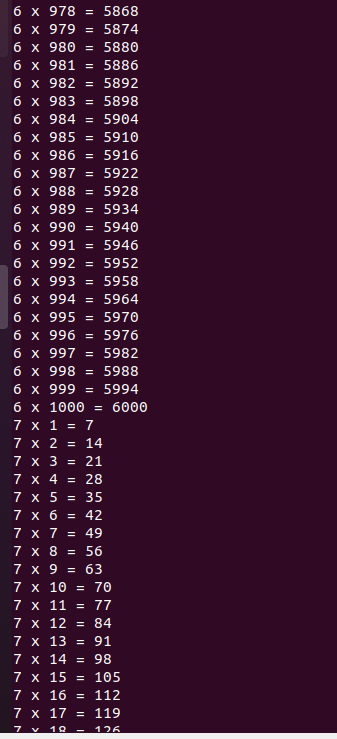
**Output:**



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