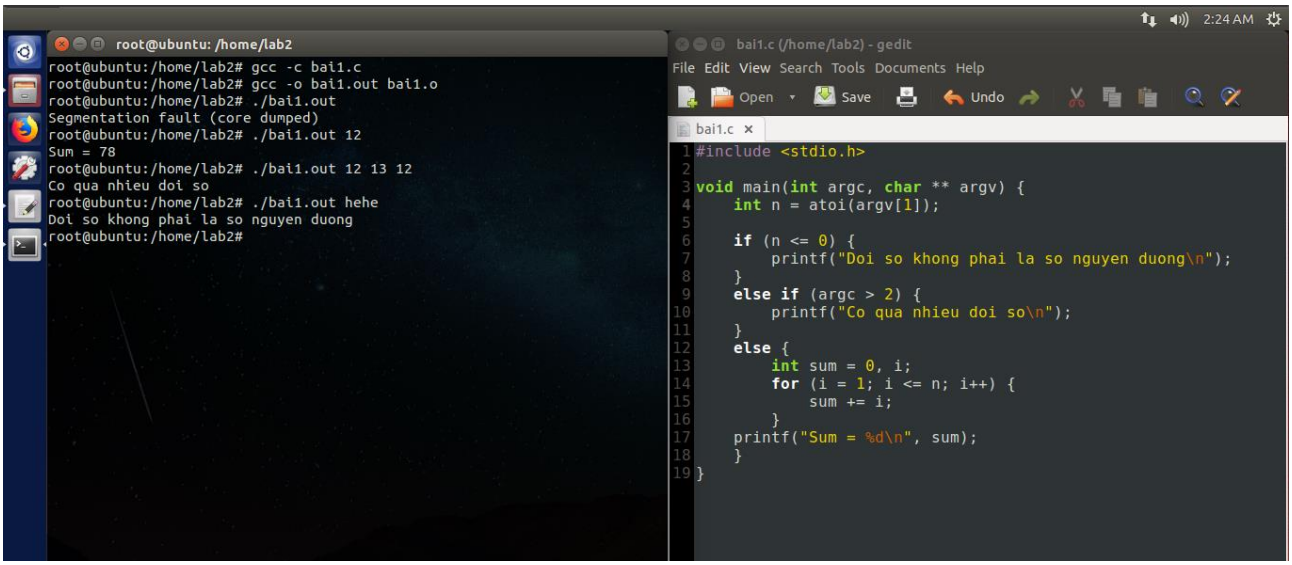
BÁO CÁO THỰC HÀNH

Buổi 2

Môn:	Nhập môn Hệ điều hành
Nhóm:	N3T01
Họ và tên:	Lưu Hữu Trí
MSSV:	52200167
Số bài hoàn thành:	5/5 (100%)

Câu 1:


root@ubuntu: /home/lab2
root@ubuntu:/home/lab2# gcc -c bai1.c
root@ubuntu:/home/lab2# gcc -o bai1.out bai1.o
root@ubuntu:/home/lab2# ./bai1.out
Segmentation fault (core dumped)
root@ubuntu:/home/lab2# ./bai1.out 12
Sum = 78
root@ubuntu:/home/lab2# ./bai1.out 12 13 12
Co qua nhieu doi so
root@ubuntu:/home/lab2# ./bai1.out hehe
Doi so khong phai la so nguyen duong
root@ubuntu:/home/lab2#
bai1.c (/home/lab2) - gedit
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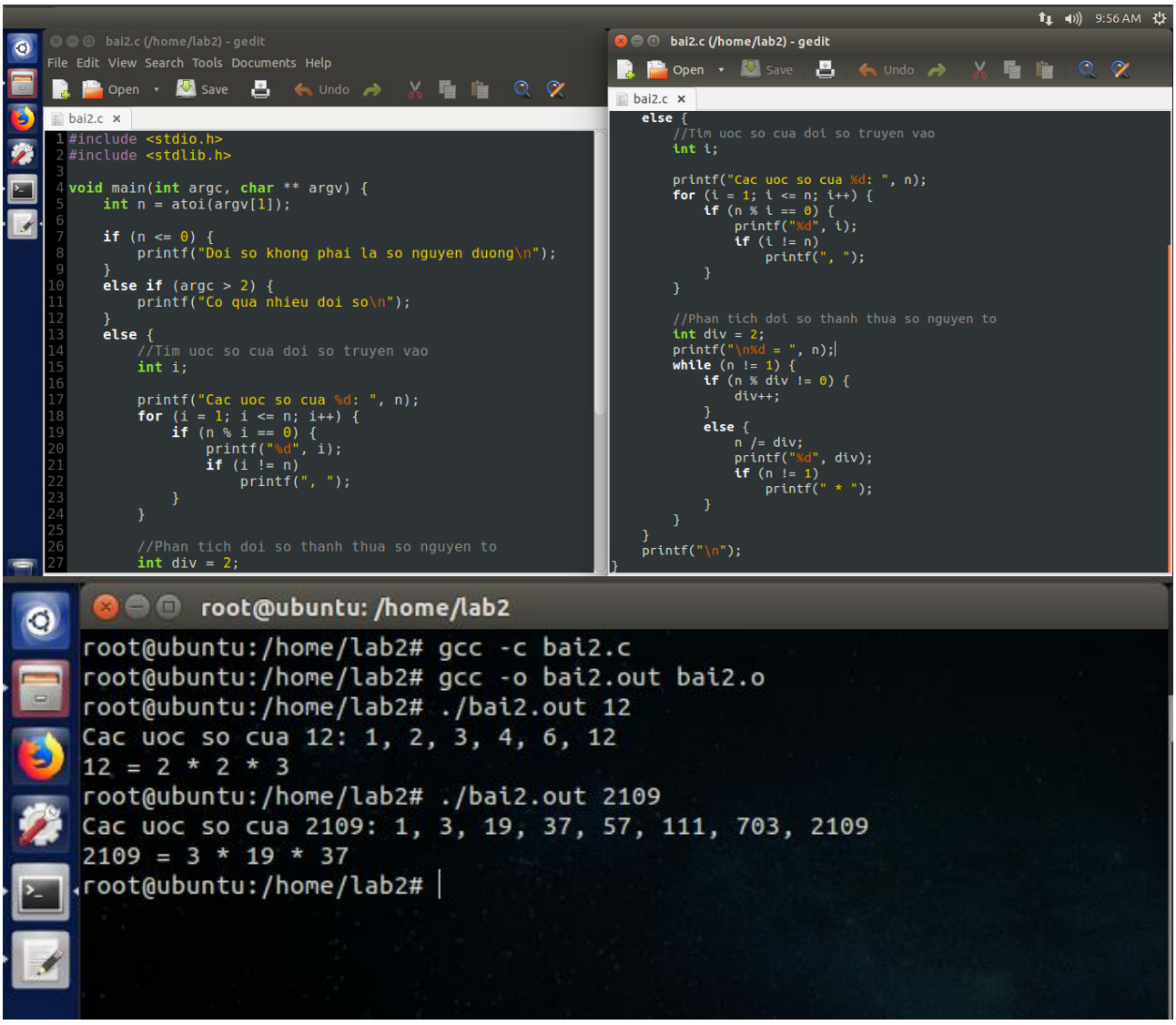
bai1.c
#include <stdio.h>
void main(int argc, char ** argv) {
int n = atoi(argv[1]);
if (n <= 0) {
printf("Doi so khong phai la so nguyen duong\n");
}
else if (argc > 2) {
printf("Co qua nhieu doi so\n");
}
else {
int sum = 0, i;
for (i = 1; i <= n; i++) {
sum += i;
}
printf("Sum = %d\n", sum);
}
}

Câu 2:


bai2.c (/home/lab2) - gedit
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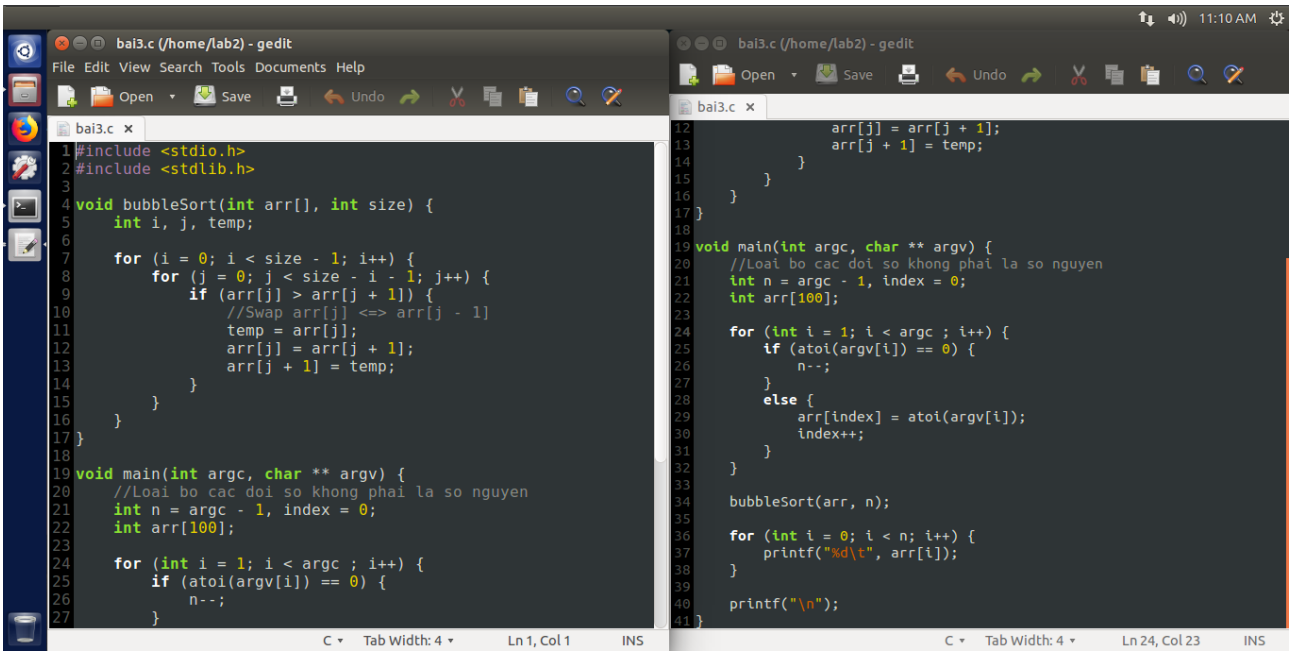
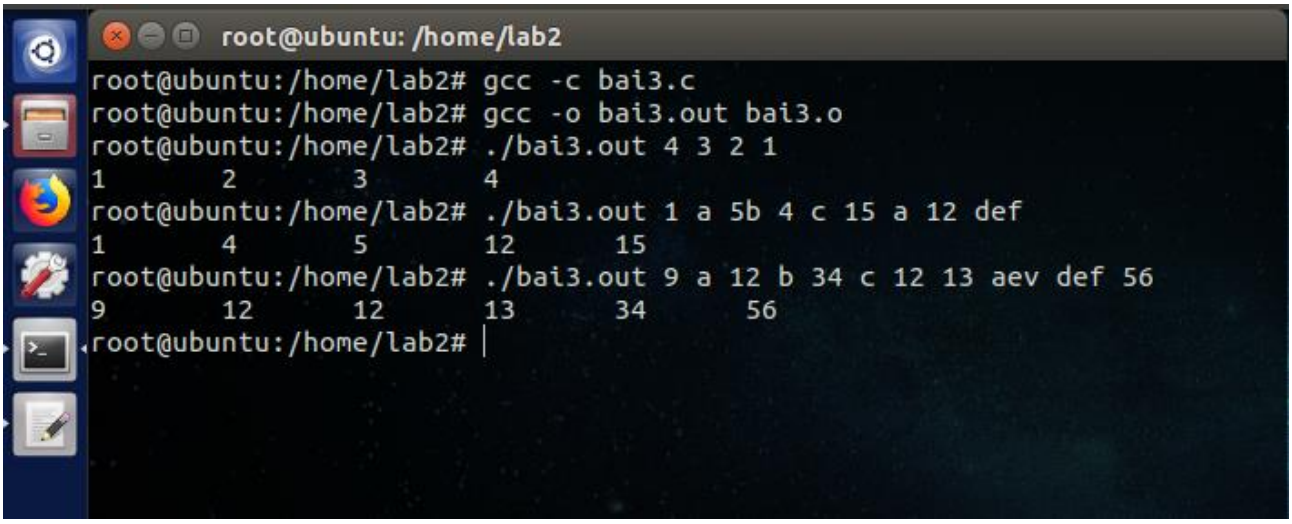
bai2.c
#include <stdio.h>
#include <stdlib.h>
void main(int argc, char ** argv) {
int n = atoi(argv[1]);
if (n <= 0) {
printf("Doi so khong phai la so nguyen duong\n");
}
else if (argc > 2) {
printf("Co qua nhieu doi so\n");
}
else {
//Tim uoc so cua doi so truyen vao
int i;
printf("Cac uoc so cua %d: ", n);
for (i = 1; i <= n; i++) {
if (n % i == 0) {
printf("%d", i);
if (i != n)
printf(", ");
}
}
//Phan tich doi so thanh thua so nguyen to
int div = 2;
printf("\n%d = ", n);
while (n != 1) {
if (n % div != 0) {
div++;
}
else {
n /= div;
printf("%d", div);
if (n != 1)
printf(" * ");
}
}
}
printf("\n");
}
root@ubuntu: /home/lab2
root@ubuntu:/home/lab2# gcc -c bai2.c
root@ubuntu:/home/lab2# gcc -o bai2.out bai2.o
root@ubuntu:/home/lab2# ./bai2.out 12
Cac uoc so cua 12: 1, 2, 3, 4, 6, 12
12 = 2 * 2 * 3
root@ubuntu:/home/lab2# ./bai2.out 2109
Cac uoc so cua 2109: 1, 3, 19, 37, 57, 111, 703, 2109
2109 = 3 * 19 * 37
root@ubuntu:/home/lab2#

Câu 3:


bai3.c (/home/lab2) - gedit
File Edit View Search Tools Documents Help
Open Save Undo
bai3.c
#include <stdio.h>
#include <stdlib.h>
void bubbleSort(int arr[], int size) {
int i, j, temp;
for (i = 0; i < size - 1; i++) {
for (j = 0; j < size - i - 1; j++) {
if (arr[j] > arr[j + 1]) {
//Swap arr[j] <=> arr[j - 1]
temp = arr[j];
arr[j] = arr[j + 1];
arr[j + 1] = temp;
}
}
}
}
void main(int argc, char ** argv) {
//Loai bo cac doi so khong phai la so nguyen
int n = argc - 1, index = 0;
int arr[100];
for (int i = 1; i < argc ; i++) {
if (atoi(argv[i]) == 0) {
n--;
}
C Tab Width: 4 Ln 1, Col 1 INS
bai3.c (/home/lab2) - gedit
Open Save Undo
bai3.c
arr[j] = arr[j + 1];
arr[j + 1] = temp;
}
}
}
}
void main(int argc, char ** argv) {
//Loai bo cac doi so khong phai la so nguyen
int n = argc - 1, index = 0;
int arr[100];
for (int i = 1; i < argc ; i++) {
if (atoi(argv[i]) == 0) {
n--;
}
else {
arr[index] = atoi(argv[i]);
index++;
}
}
bubbleSort(arr, n);
for (int i = 0; i < n; i++) {
printf("%d\t", arr[i]);
}
printf("\n");
}
C Tab Width: 4 Ln 24, Col 23 INS


root@ubuntu: /home/lab2
root@ubuntu:/home/lab2# gcc -c bai3.c
root@ubuntu:/home/lab2# gcc -o bai3.out bai3.o
root@ubuntu:/home/lab2# ./bai3.out 4 3 2 1
1 2 3 4
root@ubuntu:/home/lab2# ./bai3.out 1 a 5b 4 c 15 a 12 def
1 4 5 12 15
root@ubuntu:/home/lab2# ./bai3.out 9 a 12 b 34 c 12 13 aev def 56
9 12 12 13 34 56
root@ubuntu:/home/lab2#

Câu 4:

bai4.c (/home/lab2/Bai4) - gedit

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bai4.c

```c
#include <stdio.h>
#include <stdlib.h>

void main(int argc, char ** argv) {
    if (argc > 4) {
        printf("Qua nhieu doi so");
    }
    else {
        printf("Sum %d = %d\n", atoi(argv[1]), sum(atoi(argv[1])));
        printf("Fac %d! = %d\n", atoi(argv[2]), fac(atoi(argv[2])));
        div_n(atoi(argv[3]));
    }
    printf("\n");
}
```

fac.c (/home/lab2/bai4) - gedit 9:55 AM

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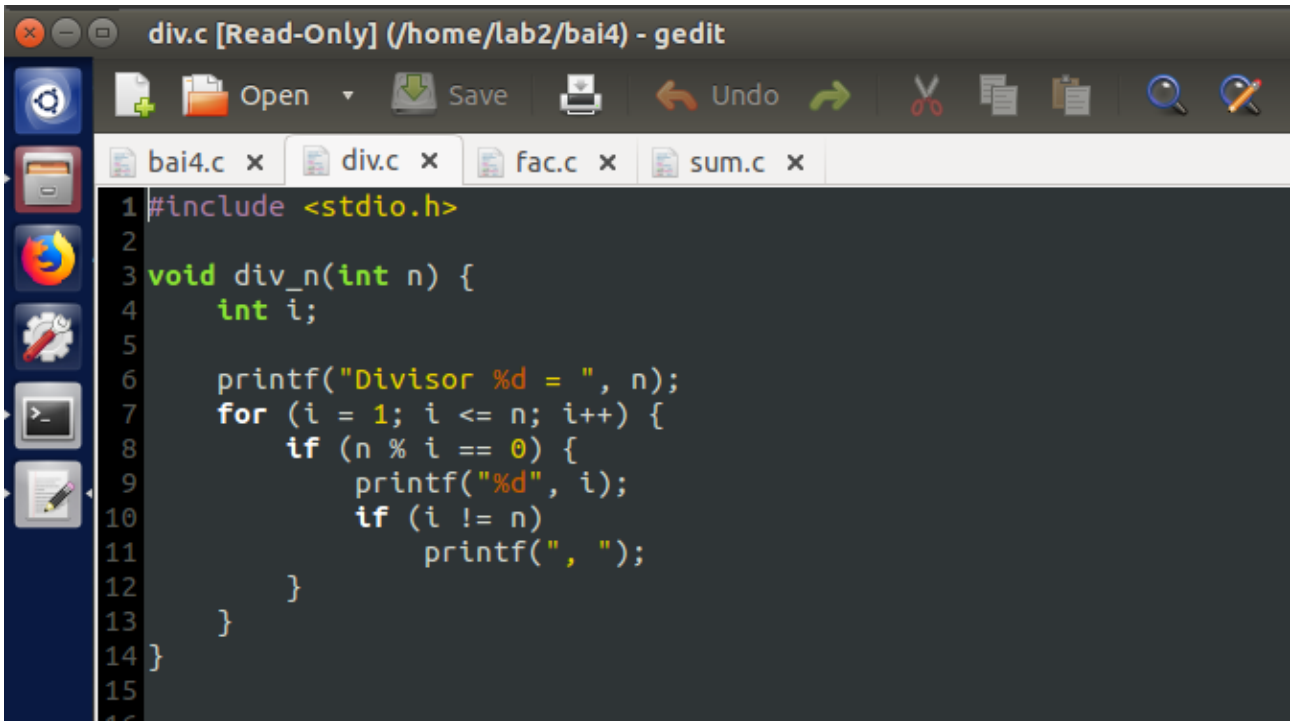
fac.c

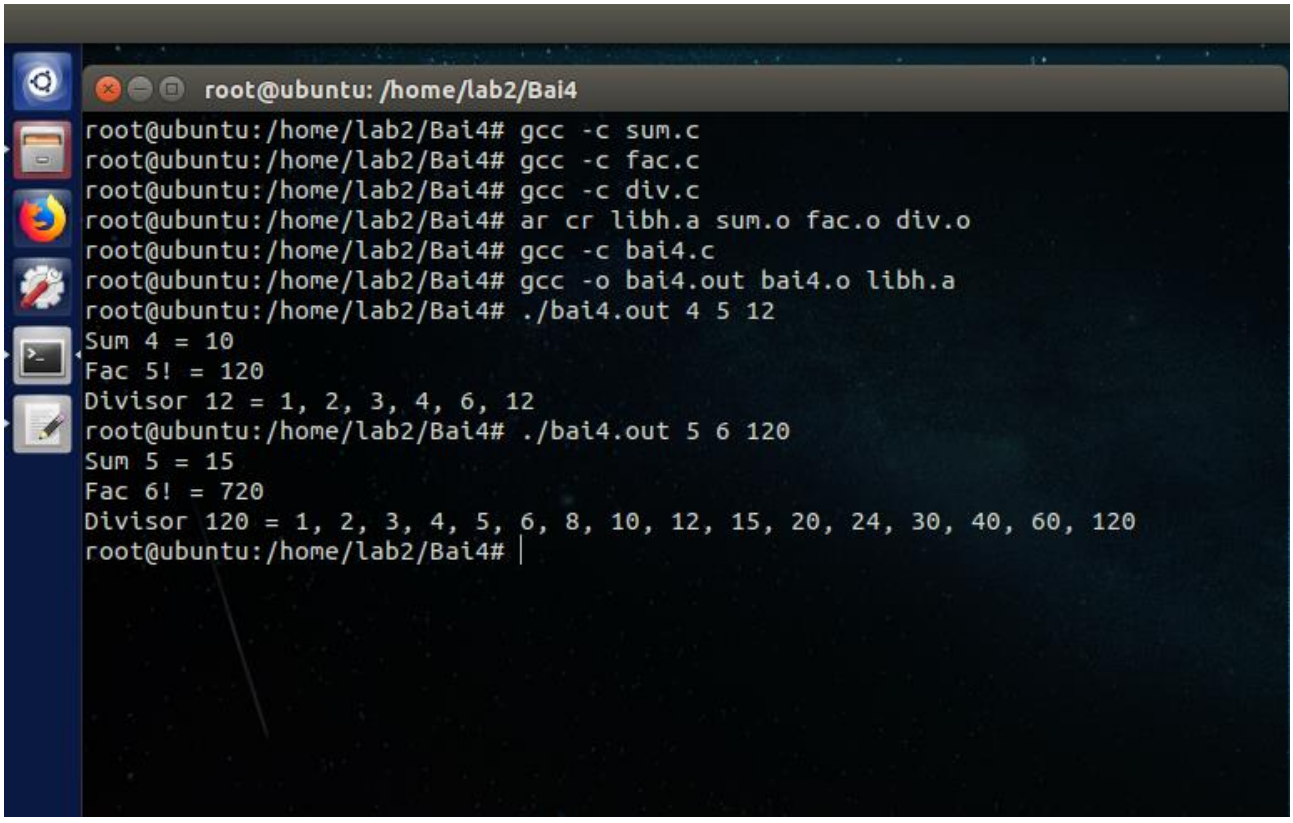
```c
#include <stdio.h>

int fac(int n) {
    int fac = 1, i;
    for (i = 1; i <= n; i++)
        fac *= i;

    return fac;
}
```

Open Save Undo

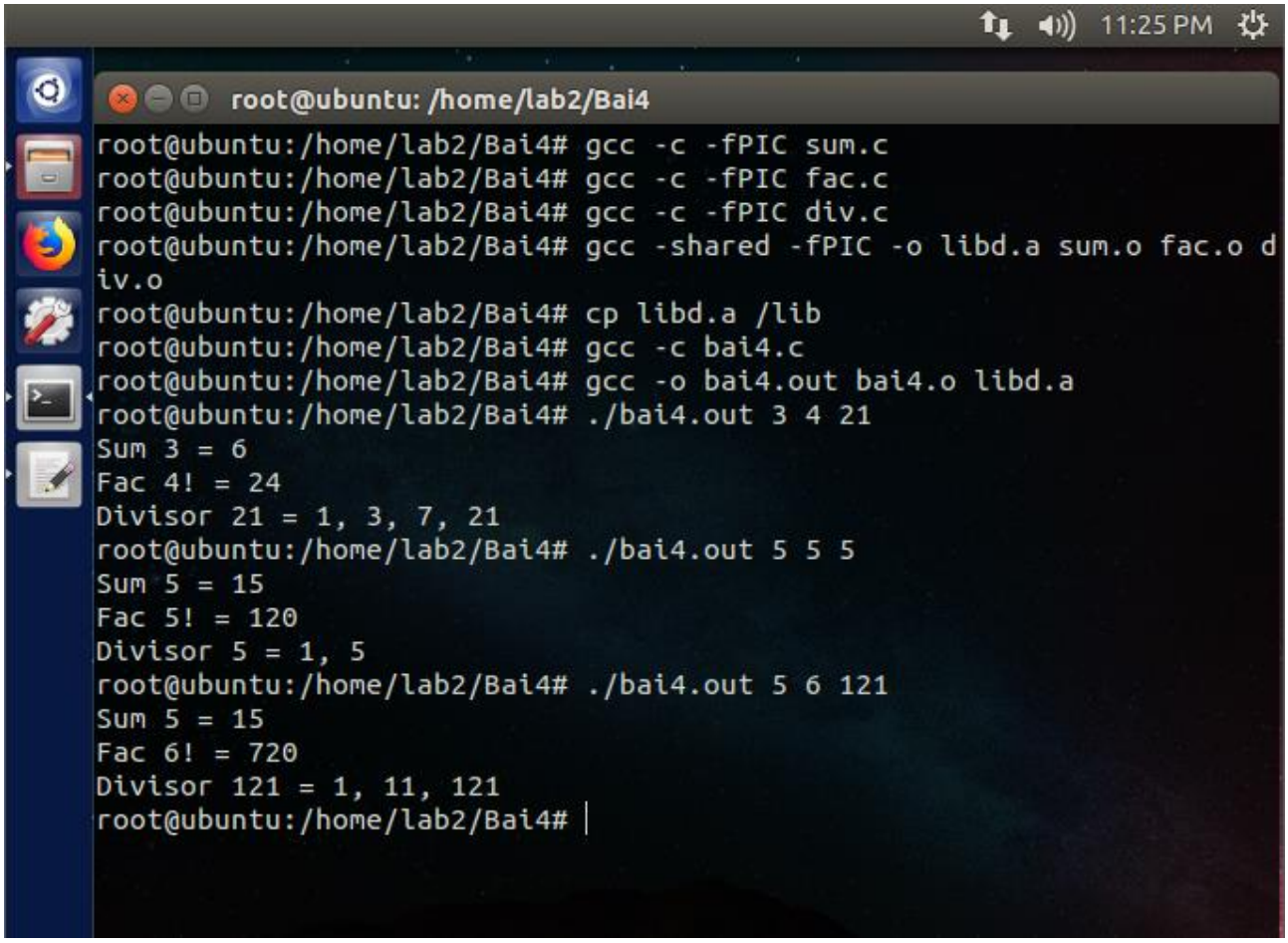
bai4.c div.c fac.c sum.c

```c
#include <stdio.h>

int sum(int n) {
    if (n == 1) return 1;
    return n + sum(n - 1);
}
```


div.c [Read-Only] (/home/lab2/bai4) - gedit
Open
Save
Undo
bai4.c
div.c
fac.c
sum.c
#include <stdio.h>
void div_n(int n) {
int i;
printf("Divisor %d = ", n);
for (i = 1; i <= n; i++) {
if (n % i == 0) {
printf("%d", i);
if (i != n)
printf(", ");
}
}
}


root@ubuntu: /home/lab2/Bai4
root@ubuntu:/home/lab2/Bai4# gcc -c sum.c
root@ubuntu:/home/lab2/Bai4# gcc -c fac.c
root@ubuntu:/home/lab2/Bai4# gcc -c div.c
root@ubuntu:/home/lab2/Bai4# ar cr libh.a sum.o fac.o div.o
root@ubuntu:/home/lab2/Bai4# gcc -c bai4.c
root@ubuntu:/home/lab2/Bai4# gcc -o bai4.out bai4.o libh.a
root@ubuntu:/home/lab2/Bai4# ./bai4.out 4 5 12
Sum 4 = 10
Fac 5! = 120
Divisor 12 = 1, 2, 3, 4, 6, 12
root@ubuntu:/home/lab2/Bai4# ./bai4.out 5 6 120
Sum 5 = 15
Fac 6! = 720
Divisor 120 = 1, 2, 3, 4, 5, 6, 8, 10, 12, 15, 20, 24, 30, 40, 60, 120
root@ubuntu:/home/lab2/Bai4#

Câu 5:


11:25 PM
root@ubuntu: /home/lab2/Bai4
root@ubuntu:/home/lab2/Bai4# gcc -c -fPIC sum.c
root@ubuntu:/home/lab2/Bai4# gcc -c -fPIC fac.c
root@ubuntu:/home/lab2/Bai4# gcc -c -fPIC div.c
root@ubuntu:/home/lab2/Bai4# gcc -shared -fPIC -o libd.a sum.o fac.o d
iv.o
root@ubuntu:/home/lab2/Bai4# cp libd.a /lib
root@ubuntu:/home/lab2/Bai4# gcc -c bai4.c
root@ubuntu:/home/lab2/Bai4# gcc -o bai4.out bai4.o libd.a
root@ubuntu:/home/lab2/Bai4# ./bai4.out 3 4 21
Sum 3 = 6
Fac 4! = 24
Divisor 21 = 1, 3, 7, 21
root@ubuntu:/home/lab2/Bai4# ./bai4.out 5 5 5
Sum 5 = 15
Fac 5! = 120
Divisor 5 = 1, 5
root@ubuntu:/home/lab2/Bai4# ./bai4.out 5 6 121
Sum 5 = 15
Fac 6! = 720
Divisor 121 = 1, 11, 121
root@ubuntu:/home/lab2/Bai4#