Lab2.2

```c
main.c ×
#include<stdio.h>
int main(int argc,char **argv){
        int sum=0,i;
        if(argc>2) printf("co qua nhieu doi so\n");
        else if(argv[1]<0) printf("truyen vao so nguyen am\n");
        else{
                for(i=1;i<atoi(argv[1]);i++){
                        sum+=i;
                }
                printf("S = %i\n",sum);
        }|
        return 0;

}
```

```
vm@vm-virtual-machine: ~/home/baitap/Lab2.2/Bai1
vm@vm-virtual-machine:~/home/baitap/Lab2.2/Bai1$ gcc -c main.c
vm@vm-virtual-machine:~/home/baitap/Lab2.2/Bai1$ gcc -o main.out main.o
vm@vm-virtual-machine:~/home/baitap/Lab2.2/Bai1$ ./main.out  abc aa 3 5
co qua nhieu doi so
vm@vm-virtual-machine:~/home/baitap/Lab2.2/Bai1$ ./main.out 5
S = 10
vm@vm-virtual-machine:~/home/baitap/Lab2.2/Bai1$
```

Bài 2:

```c
#include<stdio.h>
#include <string.h>
int check(char x[])
{
    int i;
    for (i = 0; i < strlen(x); i++)
    {
        if ((x[i] >= 97 && x[i] <= 122) || (x[i] >= 65 && x[i] <= 90))
        {
            return 0;
        }
    }
    return 1;
}
int main(int argc,char **argv){
        int i;
        if(argc>2 || check(argv[1])==0){
                printf("Loi\n");
        }else{
                printf("Cac uoc so cua %s la ",argv[1]);
                int res=atoi(argv[1]);
                for(i=1;i<=res;i++){
                        if(res%i==0) printf("%i ",i);
                }

                printf("\n");
                printf("%i = ",res);
                int tmp=2;
                while(res!=1){
                        if(res%tmp==0 && res/tmp!=1){
                                printf("%i*",tmp);
                                res/=tmp;
                        }else if(res%tmp==0 && res/tmp==1){
                                printf("%i",tmp);
                                res/=tmp;
                        }else tmp+=1;
                }

        }
        printf("\n");
        return 0;

}
```

```
vm@vm-virtual-machine:~/home/baitap/Lab2.2/Bai2$ gcc -c main.c
vm@vm-virtual-machine:~/home/baitap/Lab2.2/Bai2$ gcc -o main.out main.o
vm@vm-virtual-machine:~/home/baitap/Lab2.2/Bai2$ ./main.out 12
Cac uoc so cua 12 la 1 2 3 4 6 12
12 = 2*2*3
vm@vm-virtual-machine:~/home/baitap/Lab2.2/Bai2$ ./main.out abc
Loi

vm@vm-virtual-machine:~/home/baitap/Lab2.2/Bai2$ 
```

Bài 3:

```c
main.c ×
#include <stdio.h>
#include <string.h>
int check(char x[])
{
    int i;
    for (i = 0; i < strlen(x); i++)
    {
        if ((x[i] >= 97 && x[i] <= 122) || (x[i] >= 65 && x[i] <= 90))
        {
            return 0;
        }
    }
    return 1;
}
//quick sort int array
void quickSort(int arr[], int left, int right)
{
    int i = left, j = right;
    int tmp;
    int pivot = arr[(left + right) / 2];
    while (i <= j)
    {
        while (arr[i] < pivot)
            i++;
        while (arr[j] > pivot)
            j--;
        if (i <= j)
        {
            tmp = arr[i];
            arr[i] = arr[j];
            arr[j] = tmp;
            i++;
            j--;
        }
    }
    if (left < j)
        quickSort(arr, left, j);
    if (i < right)
        quickSort(arr, i, right);
}
```

```c
void xuat(int arr[],int n){
    int i;
    for(i=0;i<n;i++){
        printf("%d ",arr[i]);
    }
    printf("\n");
}
int main(int argc, char **argv)
{
    int arr[10];
    int i,j=0;
    for (i = 1; i < argc; i++)
    {
        if (check(argv[i]) == 1)
        {
            arr[j++]=atoi(argv[i]);
        }
    }
    quickSort(arr, 0, j - 1);
    printf("Day tang la: ");
    xuat(arr,j);
    return 0;
}
```

```
vm@vm-virtual-machine: ~/home/baitap/Lab2.2/Bai3
vm@vm-virtual-machine:~$ cd home/baitap/Lab2.2/Bai3
vm@vm-virtual-machine:~/home/baitap/Lab2.2/Bai3$ gcc -c main.c
vm@vm-virtual-machine:~/home/baitap/Lab2.2/Bai3$ gcc -o main.out main.o
vm@vm-virtual-machine:~/home/baitap/Lab2.2/Bai3$ ./main.out 8 3 1 ab -12
Day tang la: -12 1 3 8
vm@vm-virtual-machine:~/home/baitap/Lab2.2/Bai3$ 
```

Lab 2.3

Bài 1:

```c
Ex3_1.c ×
#include<stdio.h>
int main(int argc, char **argv){
    printf("Sum %s = %d\n", argv[1], sum_n(atoi(argv[1])));
    printf("Fac %s! = %d\n", argv[2], fac_n(atoi(argv[2])));
    div_n(atoi(argv[3]));
    printf("\n");
}
```

```c
task3_1div.c ×

#include<stdio.h>
void div_n(int n)
{
    int i;
    printf("Divisors %d = ",n);
    for(i=1;i<=n;i++){
        if(n%i==0){
            printf("%d ",i);
        }
    }
}
```

```c
task3_1div.c ×    task3_1fac.c ×

#include<stdio.h>
int fac_n(int n)
{
    int fac=1,i;
    for(i=1;i<=n;i++)
    {
        fac*=i;
    }
    return fac;
}
```

```c
task3_1div.c ×    task3_1fac.c ×    task3_1sum.c ×

#include<stdio.h>
int sum_n(int n)
{
    int sum=0,i;
    for(i=1;i<=n;i++)
    {
        sum+=i;
    }
    return sum;
}
```

```
vm@vm-virtual-machine:~/home/baitap/Lab2.3/Bai1$ gcc -c task3_1div.c task3_1fac.c task3_1sum.c
vm@vm-virtual-machine:~/home/baitap/Lab2.3/Bai1$ ar cr libh.a task3_1div.o task3_1fac.o task3_1sum.o
vm@vm-virtual-machine:~/home/baitap/Lab2.3/Bai1$ gcc -c Ex3_1.c
vm@vm-virtual-machine:~/home/baitap/Lab2.3/Bai1$ gcc -o Ex3_1.out Ex3_1.o libh.a
vm@vm-virtual-machine:~/home/baitap/Lab2.3/Bai1$ ./Ex3_1.out 3 4 5
Sum 3 = 6
Fac 4! = 24
Divisors 5 = 1 5
vm@vm-virtual-machine:~/home/baitap/Lab2.3/Bai1$
```

Bài 2:

```
Ex3_2.c ×
#include<stdio.h>
int main(int argc, char **argv){
    printf("Sum %s = %d\n", argv[1], sum_n(atoi(argv[1])));
    printf("Fac %s! = %d\n", argv[2], fac_n(atoi(argv[2])));
    div_n(atoi(argv[3]));
    printf("\n");
}
```

```
Ex3_2.c ×    task3_1div.c ×
#include<stdio.h>
void div_n(int n)
{
    int i;
    printf("Divisors %d = ",n);
    for(i=1;i<=n;i++){
        if(n%i==0){
            printf("%d ",i);
        }
    }
}
```

```
Ex3_2.c ×    task3_1div.c ×    task3_1fac.c ×
#include<stdio.h>
int fac_n(int n)
{
    int fac=1,i;
    for(i=1;i<=n;i++)
    {
        fac*=i;
    }
    return fac;
}
```

```
Ex3_2.c ×    task3_1div.c ×    task3_1fac.c ×    task3_1sum.c ×

#include<stdio.h>
int sum_n(int n)
{
    int sum=0,i;
    for(i=1;i<=n;i++)
    {
        sum+=i;
    }
    return sum;
}
```

```
vm@vm-virtual-machine:~$ cd home/baitap/Lab2.3/Bai2
vm@vm-virtual-machine:~/home/baitap/Lab2.3/Bai2$ ls
Ex3_2.c  task3_1div.c  task3_1fac.c  task3_1sum.c
vm@vm-virtual-machine:~/home/baitap/Lab2.3/Bai2$ gcc -c task3_1div.c task3_1fac.c task3_1sum.c
vm@vm-virtual-machine:~/home/baitap/Lab2.3/Bai2$ gcc -shared -fPIC -o libd.a task3_1div.o task3_1fac.o task3_1sum.o
vm@vm-virtual-machine:~/home/baitap/Lab2.3/Bai2$ gcc -c Ex3_2.c
vm@vm-virtual-machine:~/home/baitap/Lab2.3/Bai2$ gcc -o Ex3_2.out Ex3_2.o libd.a
vm@vm-virtual-machine:~/home/baitap/Lab2.3/Bai2$ sudo cp libd.a /lib
[sudo] password for vm:
Sorry, try again.
[sudo] password for vm:
vm@vm-virtual-machine:~/home/baitap/Lab2.3/Bai2$ ./Ex3_2.out 3 4 5
Sum 3 = 6
Fac 4! = 24
Divisors 5 = 1 5
vm@vm-virtual-machine:~/home/baitap/Lab2.3/Bai2$
```