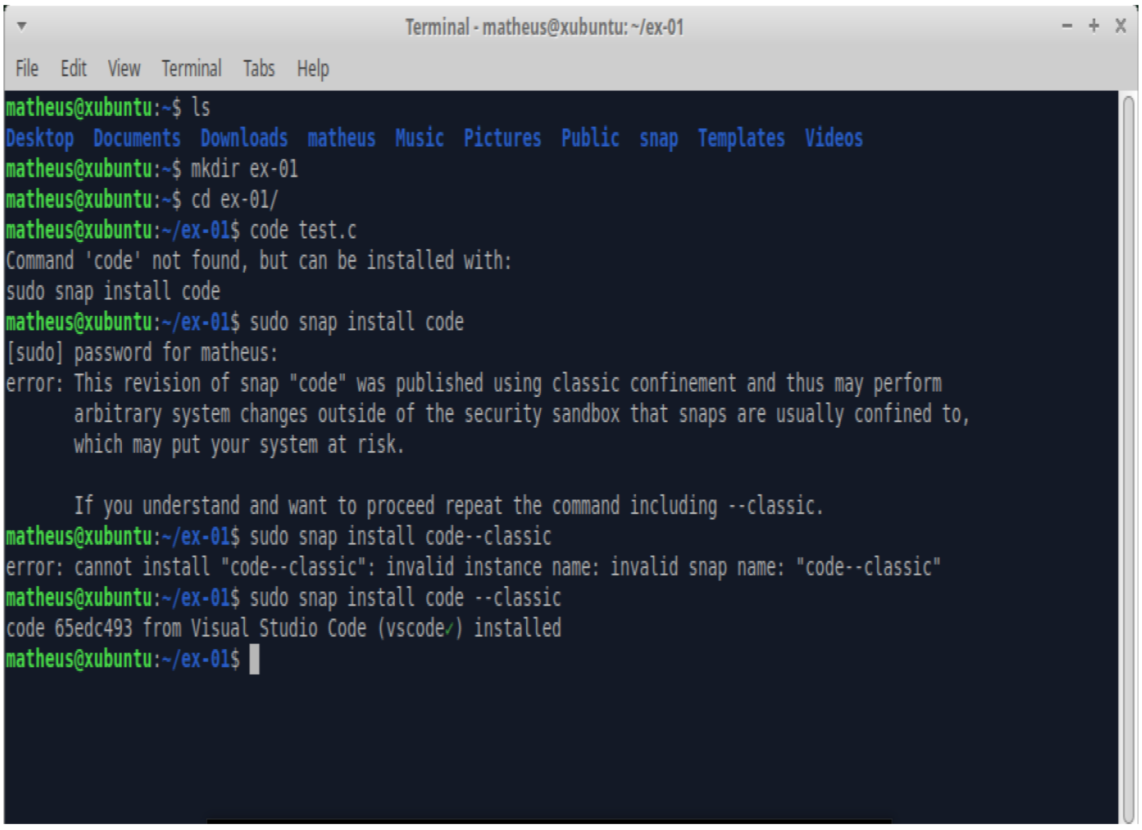
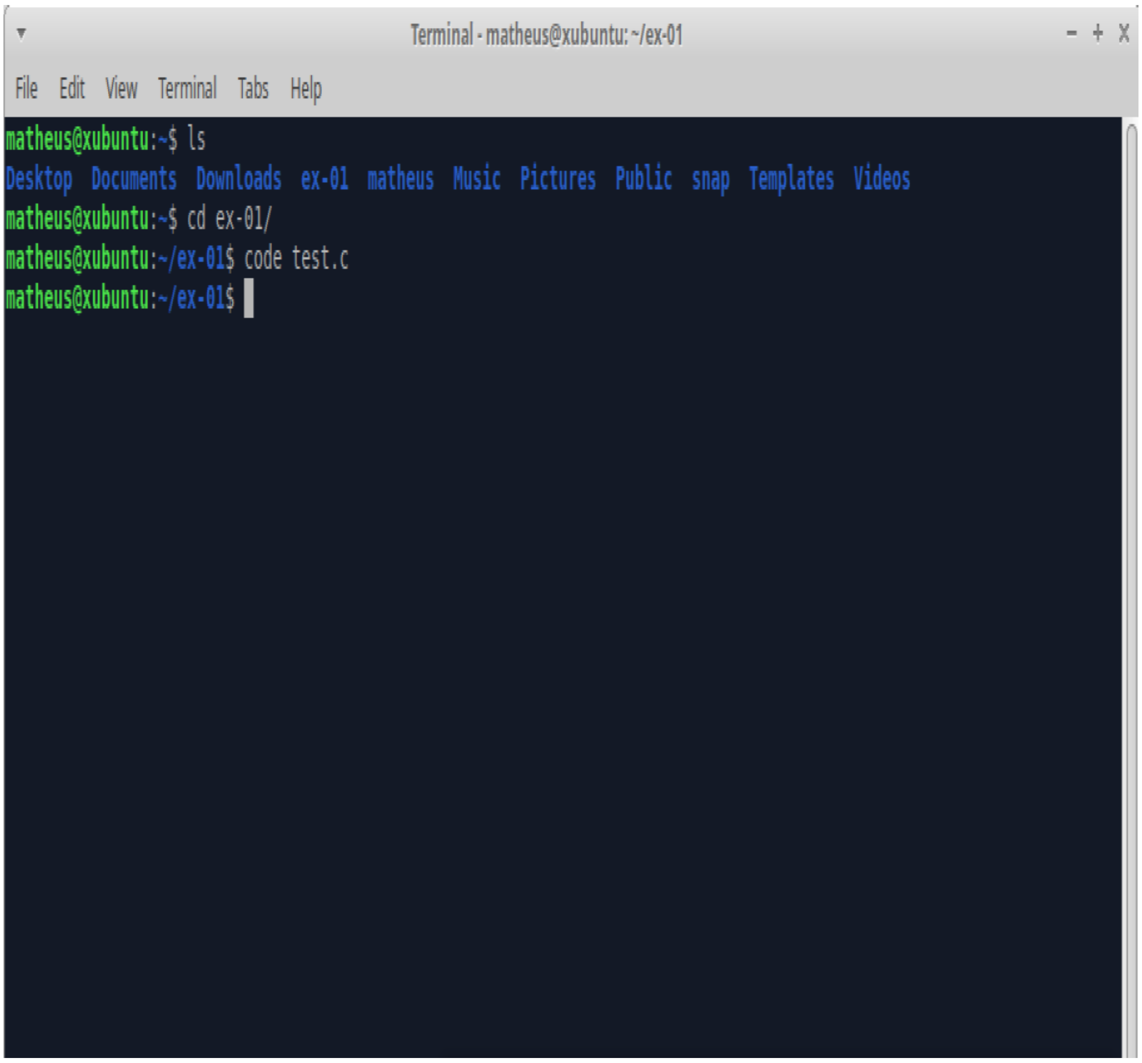
Exercício 2.

Criando diretório ex-01


Terminal - matheus@xubuntu: ~/ex-01
File Edit View Terminal Tabs Help

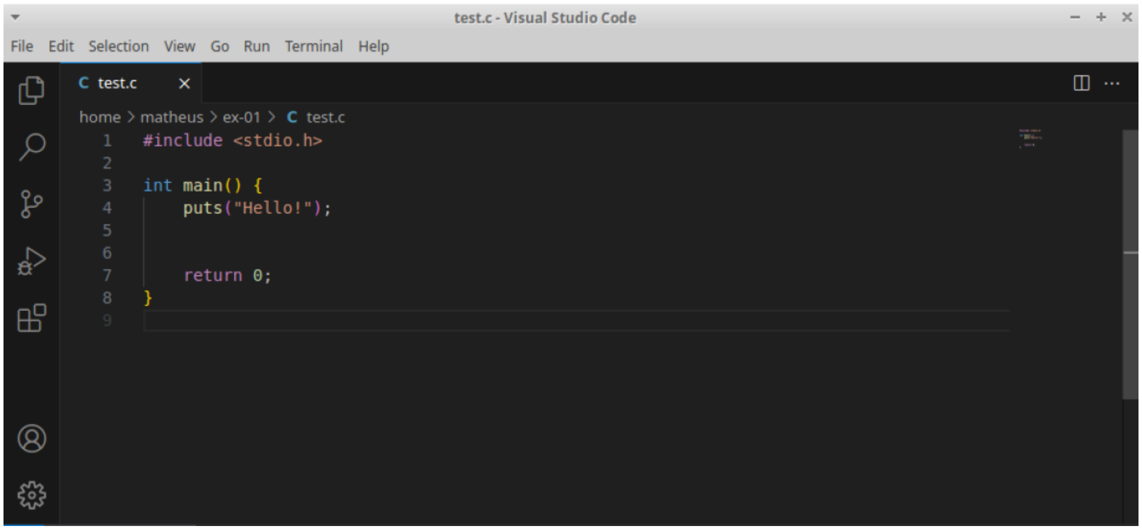
```
matheus@xubuntu:~$ ls
Desktop  Documents  Downloads  matheus  Music  Pictures  Public  snap  Templates  Videos
matheus@xubuntu:~$ mkdir ex-01
matheus@xubuntu:~$ cd ex-01/
matheus@xubuntu:~/ex-01$ code test.c
Command 'code' not found, but can be installed with:
sudo snap install code
matheus@xubuntu:~/ex-01$ sudo snap install code
[sudo] password for matheus:
error: This revision of snap "code" was published using classic confinement and thus may perform
       arbitrary system changes outside of the security sandbox that snaps are usually confined to,
       which may put your system at risk.

       If you understand and want to proceed repeat the command including --classic.
matheus@xubuntu:~/ex-01$ sudo snap install code--classic
error: cannot install "code--classic": invalid instance name: invalid snap name: "code--classic"
matheus@xubuntu:~/ex-01$ sudo snap install code --classic
code 65edc493 from Visual Studio Code (vscode✓) installed
matheus@xubuntu:~/ex-01$ 
```

*necessária instalação do Visual Studio Code (“sudo snap install code --classic”)


Terminal - matheus@xubuntu: ~/ex-01
File Edit View Terminal Tabs Help

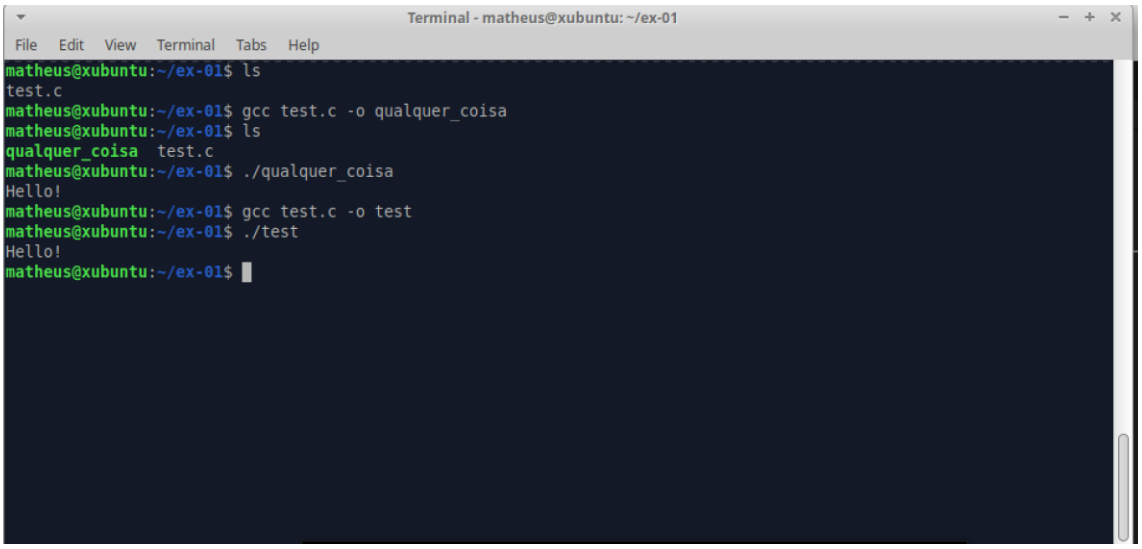
```
matheus@xubuntu:~$ ls
Desktop  Documents  Downloads  ex-01  matheus  Music  Pictures  Public  snap  Templates  Videos
matheus@xubuntu:~$ cd ex-01/
matheus@xubuntu:~/ex-01$ code test.c
matheus@xubuntu:~/ex-01$ 
```

Dentro do VS Code: (code test.c)


test.c - Visual Studio Code
File Edit Selection View Go Run Terminal Help
test.c
home > matheus > ex-01 > test.c

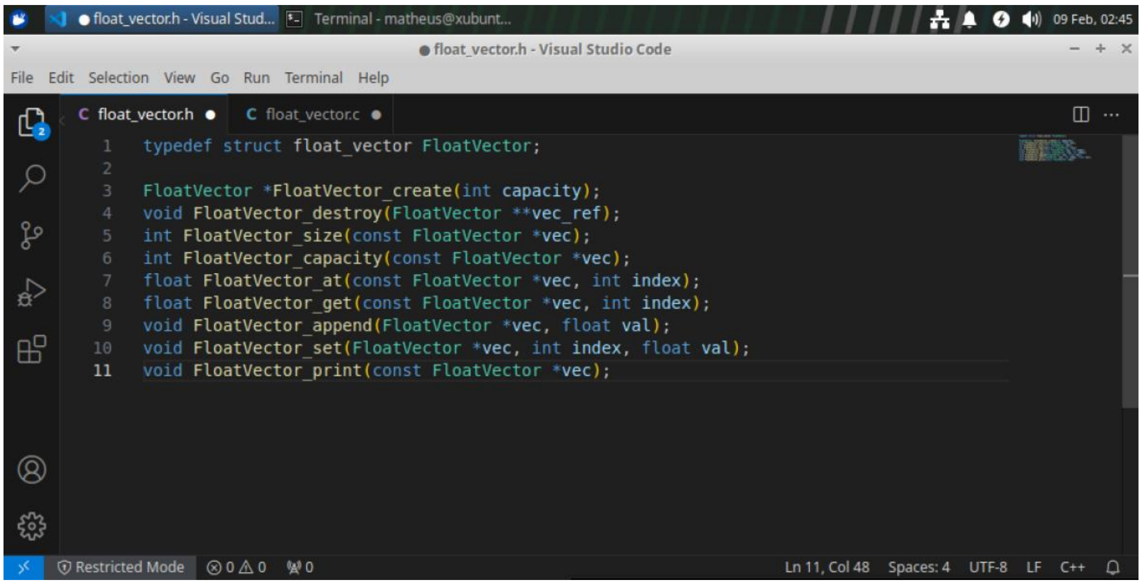
```c
#include <stdio.h>

int main() {
    puts("Hello!");


    return 0;
}

```

Compilando (gcc)


Terminal - matheus@xubuntu: ~/ex-01
File Edit View Terminal Tabs Help

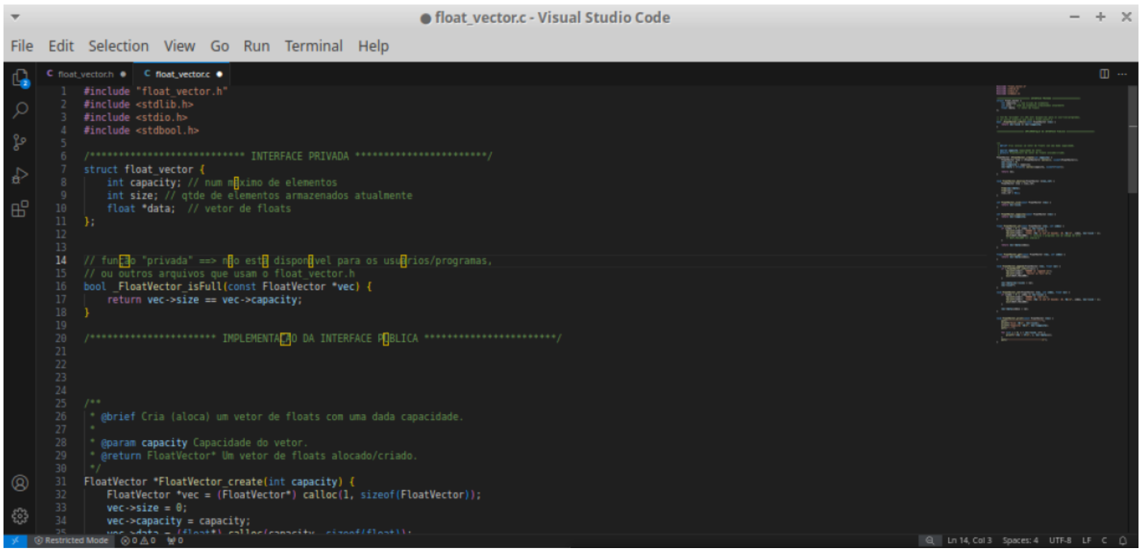
```
matheus@xubuntu:~/ex-01$ ls
test.c
matheus@xubuntu:~/ex-01$ gcc test.c -o qualquer_coisa
matheus@xubuntu:~/ex-01$ ls
qualquer_coisa  test.c
matheus@xubuntu:~/ex-01$ ./qualquer_coisa
Hello!
matheus@xubuntu:~/ex-01$ gcc test.c -o test
matheus@xubuntu:~/ex-01$ ./test
Hello!
matheus@xubuntu:~/ex-01$
```

.float_vector.h



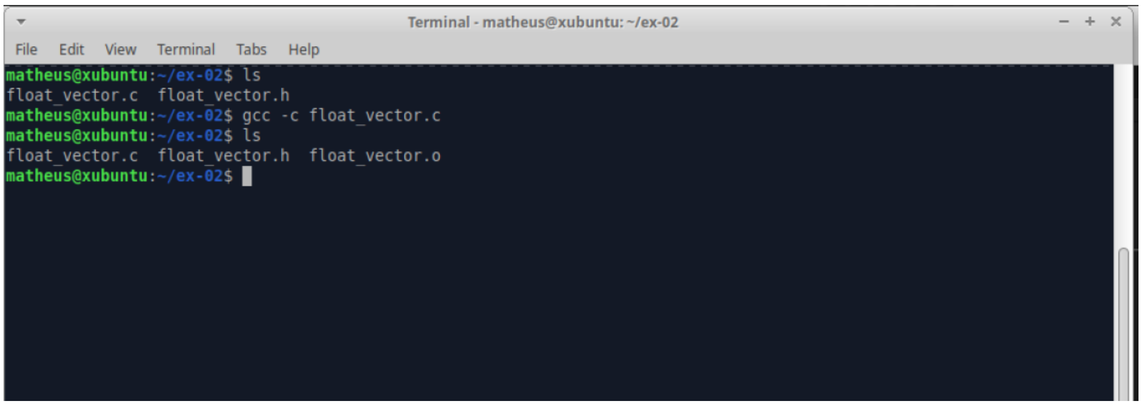
```c
typedef struct float_vector FloatVector;

FloatVector *FloatVector_create(int capacity);
void FloatVector_destroy(FloatVector **vec_ref);
int FloatVector_size(const FloatVector *vec);
int FloatVector_capacity(const FloatVector *vec);
float FloatVector_at(const FloatVector *vec, int index);
float FloatVector_get(const FloatVector *vec, int index);
void FloatVector_append(FloatVector *vec, float val);
void FloatVector_set(FloatVector *vec, int index, float val);
void FloatVector_print(const FloatVector *vec);
```

.float_vector.c

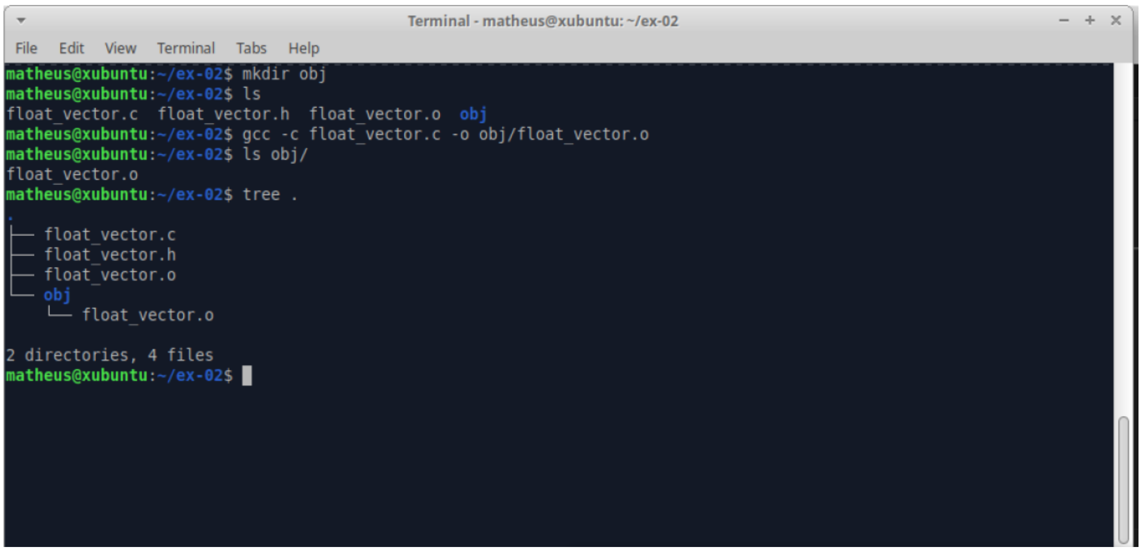


```c
#include "float_vector.h"
#include <stdlib.h>
#include <stdio.h>
#include <stdbool.h>

/*************************** INTERFACE PRIVADA ***********************/
struct float_vector {
    int capacity; // num m�ximo de elementos
    int size; // qtde de elementos armazenados atualmente
    float *data;  // vetor de floats
};


// fun��o "privada" ==> n�o est� dispon�vel para os usu�rios/programas,
// ou outros arquivos que usam o float_vector.h
bool _FloatVector_isFull(const FloatVector *vec) {
    return vec->size == vec->capacity;
}

/********************** IMPLEMENTA��O DA INTERFACE P�BLICA **********************/




/**
 * @brief Cria (aloca) um vetor de floats com uma dada capacidade.
 *
 * @param capacity Capacidade do vetor.
 * @return FloatVector* Um vetor de floats alocado/criado.
 */
FloatVector *FloatVector_create(int capacity) {
    FloatVector *vec = (FloatVector*) calloc(1, sizeof(FloatVector));
    vec->size = 0;
    vec->capacity = capacity;
```

Compilação tipo abstrato de dados


Terminal - matheus@xubuntu: ~/ex-02
File Edit View Terminal Tabs Help

```
matheus@xubuntu:~/ex-02$ ls
float_vector.c  float_vector.h
matheus@xubuntu:~/ex-02$ gcc -c float_vector.c
matheus@xubuntu:~/ex-02$ ls
float_vector.c  float_vector.h  float_vector.o
matheus@xubuntu:~/ex-02$ 
```


Terminal - matheus@xubuntu: ~/ex-02
File Edit View Terminal Tabs Help

```
matheus@xubuntu:~/ex-02$ mkdir obj
matheus@xubuntu:~/ex-02$ ls
float_vector.c  float_vector.h  float_vector.o  obj
matheus@xubuntu:~/ex-02$ gcc -c float_vector.c -o obj/float_vector.o
matheus@xubuntu:~/ex-02$ ls obj/
float_vector.o
matheus@xubuntu:~/ex-02$ tree .
.
├── float_vector.c
├── float_vector.h
├── float_vector.o
└── obj
    └── float_vector.o

2 directories, 4 files
matheus@xubuntu:~/ex-02$ 
```