

---

TASK 2 - Understanding Design Patterns in C

---

**matrix.h**

```
#ifndef MAT
#define MAT

#define SUCCESS 0
#define DELETED 2
#define MATRIX_NOT_FOUND 3

typedef struct _matrix *matrix_t;

matrix_t *matrix_create(int n_i, int n_j, int* result); // for creating a new matrix
void matrix_del(matrix_t* matrix); // deleting the matrix

#endif
```

**matrix.c**

```
#include<stdio.h>
#include "matrix.h"

typedef struct _matrix{
    int i,j; //rows and columns
    float *value; // data
};

matrix_t *matrix_create(int n_i, int n_j, int* status);
{
    if(n_i > 0 && n_j > 0)
    {
        struct matrix_t *matrix = malloc(sizeof(*matrix));
        matrix->i=n_i;
        matrix->j=n_j;
        matrix->value = malloc( i * j * sizeof(float*));
        status = 0
        return status;
    }
    return NULL;
}
```

```
void matrix_del(matrix_t* matrix);
{
    if (matrix == NULL)
    {
        return MATRIX_NOT_FOUND;
    }
    else{
        free(matrix->value);
        free(matrix);
        return DELETE;
    }
}
```