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

//1
double *temperatures = (double*) malloc(365*sizeof(double));
//2
    char *q = (char*) malloc(14*sizeof(char));
if( q != NULL)
 strcpy(q, "So many books");

//3
int **grades = (int**) malloc(2*sizeof(int*));
if( grades != NULL ){
 grades[0] = (int*) malloc(3*sizeof(int));
 grades[1] = (int*) malloc(3*sizeof(int));
}
if(grades[0] != NULL && grades[1] != NULL){
 grades[0][0] = 36;
 grades[0][1] = 24;
 grades[0][2] = 26;
 grades[1][0] = 81;
 grades[1][1] = 30;
 grades[1][2] = 74;
}
//4
float *zeros = (float*)calloc(4,sizeof(float));
//5
char **names = (char**) malloc(2*sizeof(char*));
int i;
if( names != NULL ){
 names[0] = (char*) malloc(4*sizeof(char));
 names[1] = (char*) malloc(5*sizeof(char));
}
if(names[0] != NULL && names[1] != NULL){
 strcpy(names[0], "Ali");
 strcpy(names[1], "Omar");
}
```

```
PS C:\Users\Dell> cd "c:\Users\Dell\OneDrive\Documents\Lbs C\lab 3\" ;
if ($?) { gcc test.c -o test } ; if ($?) { .\test }
```

```
#include <math.h>
#include <stdio.h>
#include <stdio.h>
#include <stdlib.h>
#include <stdio.h>
#include<stdio.h>
int main() {
    //1) //delete free(p)
char *p = "Hello world";
 printf("%d\n", *p);

//2) runtime error ; realloc could free the pointer p in which case
freeing it again will cause an error,
// or it could simply extend it in which case you're freeing it twice.
int* p = (int*) malloc(10 * sizeof(int));
p = (int*) realloc(p, 5 * sizeof(int));
free(p);

//3) compile time error: wrong cast from (int*) to (int**)
   // runtime error: not allocating enough for pointers but storing 2
pointers in p (allocated for 2 integers)
```

```
 int** p = (int**) malloc(2 * sizeof(int*));
p[0] = (int*) malloc(5 * sizeof(int));
p[1] = (int*) malloc(5 * sizeof(int));
free(p[0]);
free(p[1]);
free(p);

 }
PS C:\Users\Dell> cd "c:\Users\Dell\OneDrive\Documents\Lbs C\lab 3\" ;
if ($?) { gcc test.c -o test } ; if ($?) { .\test }
```

Link: https://github.com/Link20222/CSC_215_KSU_44_C-language/tree/main/HWs/3 (I will upload my codes in GitHub later)