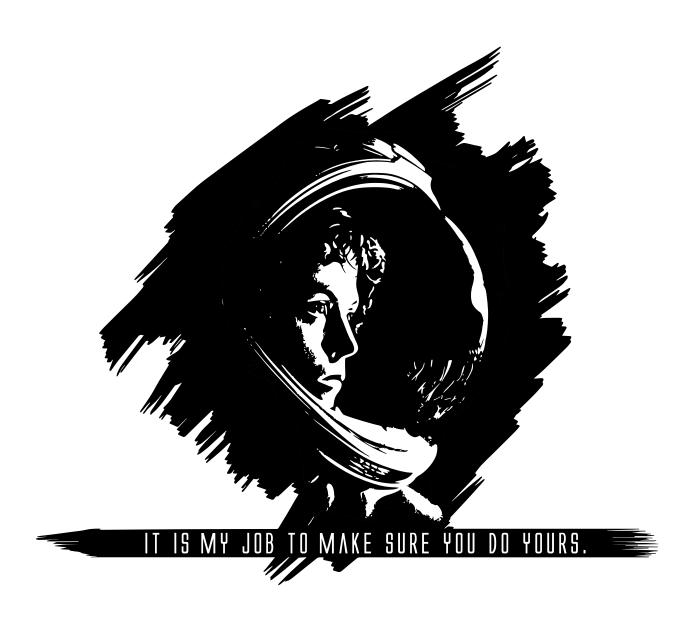


EXERCISES — Date format

version #



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1 Date format

Files to submit:

- date_format/date_format.c
- · date_format/date_format.h

Provided files:

· date_format/date_format.h

Main function: None

Authorized functions: You are only allowed to use the following functions:

- time(2)
- gmtime(3)
- strdup(3)
- strtok_r(3)
- malloc(3)
- calloc(3)
- free(3)
- sprintf(3)

Authorized headers: You are only allowed to use the functions defined in the following headers:

- · stddef.h
- · assert.h
- · errno.h
- err.h

1.1 Goal

Implement the following function:

```
char *date_format(const char *format);
```

This function takes as input a string representing a date format. It will contain M, D and Y in any order and at most once, separated by at most one of the following separation characters: ; ; , – _. These characters will not appear neither at the beginning nor the end of the string. No spaces will be present in the string. D and M should be on 2 characters and Y on 4 e.g. 01-01-2017.

For example:

```
char *format1 = "M-D-Y";
char *format2 = "D_M_Y";
char *format3 = "Y,D,M";
char *format4 = "M;Y;D";

// Your function will never be called with those:
char *format5 = "B;C;E";
char *format6 = "Y;D;M;Y;D;M";
char *format7 = "Y;:D,-_M";
char *format8 = ";Y;D;M;";
char *format9 = "Y , D , M";
```

If any error occurs, your function should return a NULL pointer. Errors include a missing separating character, a missing format (Y, D, M) or any common errors when using malloc etc.

The resulting string must be the current time, formatted as requested in the input format.

1.2 Example

```
char *output = date_format("Y,D,M");
printf("%s\n", output); // 2017,15,11
free(output);

output = date_format("M;Y:D");
printf("%s\n", output); // 11;2017:15
free(output);

output = date_format("Y;D"); // NULL
output = date_format("MYD"); // NULL
```

Be careful!

Your code will be compiled with -D_XOPEN_SOURCE=700. There should therefore be no errors when compiled this way.

It is my job to make sure you do yours.