



# EXERCISES — Date format

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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:

```

// Valid formats.
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.*