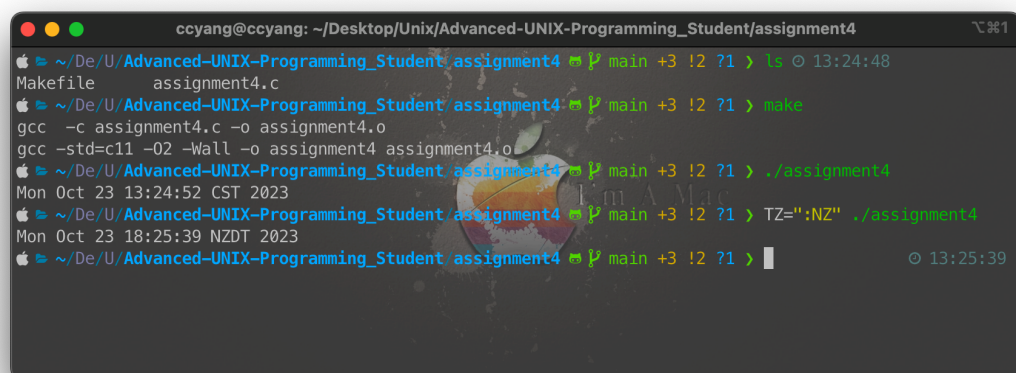


Unix Assignment4

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- Write a program that prints the current time of Asia/Taipei time zone using strftime.
- Change a time zone and show the output of the time zone you choose in your report.



```
ccyang@ccyang: ~/Desktop/Unix/Advanced-UNIX-Programming_Student/assignment4
~/De/U/Advanced-UNIX-Programming_Student/assignment4 main +3 !2 ?1 > ls 13:24:48
Makefile assignment4.c
~/De/U/Advanced-UNIX-Programming_Student/assignment4 main +3 !2 ?1 > make
gcc -c assignment4.c -o assignment4.o
gcc -std=c11 -O2 -Wall -o assignment4 assignment4.o
~/De/U/Advanced-UNIX-Programming_Student/assignment4 main +3 !2 ?1 > ./assignment4
Mon Oct 23 13:24:52 CST 2023
~/De/U/Advanced-UNIX-Programming_Student/assignment4 main +3 !2 ?1 > TZ=:NZ ./assignment4
Mon Oct 23 18:25:39 NZDT 2023
~/De/U/Advanced-UNIX-Programming_Student/assignment4 main +3 !2 ?1 > 13:25:39
```

We use `TZ=:NZ` to set the time zone to NZDT before execute `./assignment4`.

- Describe your implementation in your report.

```
4 int main(int argc, char *argv[]) {
5     time_t t = time(NULL);
6     struct tm tm;
7     char buffer[100] = {};
8
9     localtime_r(&t, &tm);
10    strftime(buffer, sizeof(buffer), "%a %b %d %X %Z %Y", &tm);
11
12    printf("%s\n", buffer);
13    return 0;
14 }
```

We use `time_t t = time(NULL)` in line 5 to get the current time and stores it in the variable `t` of type `time_t`. The variable `t` is the current time which means the number of seconds elapsed since January 1, 1970. The `struct tm tm` in line 6

defines a structure variable `tm` to store elements of time. In line 9, we use the `localtime_r(&t, &tm)` to convert the `time_t` value to local time and store the result in `tm`.

In line 10, we use `strftime(buffer, sizeof(buffer), "%a %b %d %X, %Z %Y", &tm)` to format the time elements in the `tm` according to the specified format and store the result in the `buffer`. Besides, `%a %b %d %X, %Z %Y` is the format string defining the output time format. Then we use `printf("%s\n", buffer)` to outputs the formatted time string, and return 0, which signifies successful execution.