

**CSE 232**  
**Systems Programming**  
**2023 Spring**  
**Assignment 7**

**Purpose of this Assignment**

Purpose of this assignment is to help students gain experience with C preprocessors.

Write a C program which prints the date and time of compilation when it is executed. You can use `__DATE__` and `__TIME__` macros in order to obtain the date and time of compilation.

Then, add a macro named “assert”. The purpose of this macro is to make sanity checks; to ensure some conditions never become false. If an unwanted condition becomes false, the macro aborts the program with an error message.

Assert should get a condition as a parameter. It should print an error message which contains the name of the file, line number of the assertion, and the condition which failed; and then it should stop the program. You can use `__FILE__` and `__LINE__` macros in order to obtain the file name and line number. You can use the `exit` function which is defined in `stdlib.h` in order to terminate the program.

```
int main(){  
    // Your code here to print compilation date & time  
    assert(5 < 0 );  
    printf("This string shouldn't be printed if the assertion fails.\n");  
    return 0;  
}
```

For the example code snippet above, your program should produce and output similar to the following:

This program has been compiled at Apr 2 2018 11:58:48

Assertion error in file lab7\_sol.c, line 11, condition "5 < 0"

Finally, write a shell script which writes your code in a file with the macros expanded (use gcc with the parameter -E in order to obtain that), compiles your program and runs it.