

**Assignment  $N + 1$ . Due by the Final Exam, 9:00 am, Saturday December 11**

1. To save your time and avoid trivial programming mistakes, you can prepare files containing "frames" of programs and common programming patterns, for example:

A. File header with appropriate information, such as your name, date, course, reminder to document your work properly, and whatever else you find appropriate.

B. Standard "frames" for the main program:

```
int main()          int main(int argc, char* argv[])
{                  {
    return(0);      return(0);
}                  {
```

C. Typical "#include's":

```
#include <stdio.h>    /* for C input/output */
#include <iostream.h> /* for C++ input/output */
#include <fstream.h>  /* for C++ file i/o */
#include <math.h>     /* for math functions in both C/C++ */
#include <stdlib.h>   /* for functions atoi(), atof(), malloc() */
```

(However, do not #include unnecessary files in your program.)

D. Typical patterns:

D1. Declarations

```
int n;    // comment: what variable is this?
double x; // comment: what variable is this?
```

D2. if, if-else constructions

D3. for and/or while, d-while loops, e.g.

```
while (;;)          for (i=0; i<n; i++)
{                  {
}                  }
```

E. "Frames" for C++ classes.

F. Use your own imagination.

**Test all prepared elements in advance. A missed brace or an extra semi-colon will take precious minutes in the Final and can cost you precious points.**

2. Write a series of short wrong programs and see what mistakes or warnings the computer reports.

(This is by no means a complete list. In particular, non-syntax programming and mathematical errors are not here.)

- 1) Missing ; at end of statements
- 2) " at end of class declaration
- 3) Function declared as void returning a value
- 4) A non-void function failing to return a value
- 5) Violation of array bounds
- 6) Quotation not closed in output operations or string values
- 7) Function declared or referred to, but not implemented
- 8) Class member function declared but the prefix missing in definition
- 9) Missing opening { around a loop or a function body
- 10) Missing closing } around a loop or a function body
- 11) Misspelled keyword
- 12) Standard library file not #include'd
- 13-∞) Your own examples.