Programming applications

ECE 3331, Spring 2022

Dalian Maritime University

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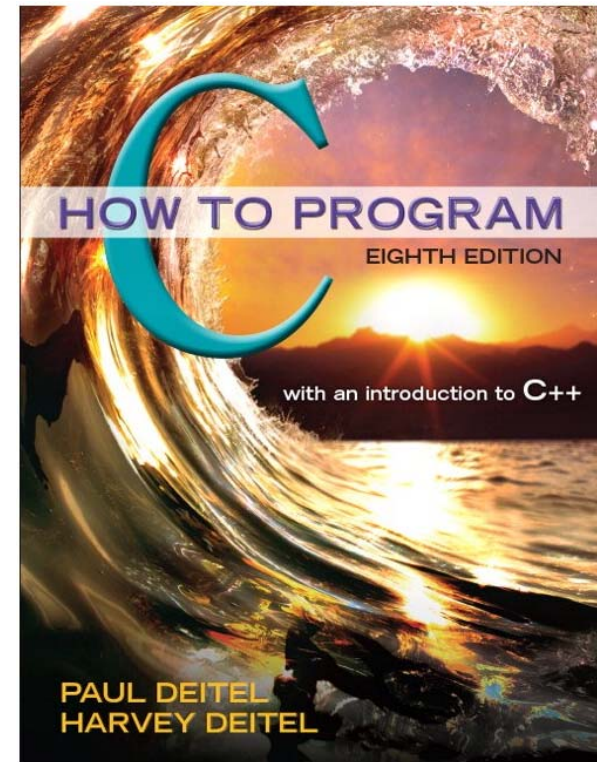
Course Information

Instructor:

- Xiaofei Shi
- 413,West Laboratory Building

TA: Fangyuan Chen
       Zhiyang Shen

Text Book

C How to Program, 8th Edition, by Paul Deitel, Harvey Deitel

Work Hard ?

➢Learn fundamental programming skills

➢Good job opportunities

➢Perform research using computer modeling

➢Why do you need to work exceptional hard in the courses?

  ➢ you can claim you know programming well in a job interview
  ➢ through the course, you learn the fundamental of programming
  ➢ you can get a good reference letter from me
  ➢ get a good grade
  ➢ …

How to succeed

> ➢ Work hard, study hard
>
> ➢ Work independently
>
> ➢ Do it (run simulations, modify source codes):

Key Points

- Textbook
  - Required
  - Reading before class
- Hardware & Software
  - PC, Microsoft Visual Studio, VC++
- Class Schedule

Grades

- 5/6 computer problems
                    + project   30%
  - Independent, not team, work
- Exam 1   30%
- Exam 2   40%
- Classworks (Bonus)   0.5% /assignment

Classes

- Read before class
- Only key points are discussed
- Questions are encouraged
- Selected exercises are demonstrated
- Skip class at your own risk

Chapter 1

- Terminology

  - data types

    - integers: 0, ±1, 32767, 2147483647

      - $2^{15}-1$ $2^{31}-1$

    - floating numbers

      - ± 1.1E±38 ± 1.1E±308

    - characters

      - ASCII (Am Stnd Code for Info Interchange)

      - EBCDIC (Extended Binary Coded Decimal Interchanged Code)

Programming Languages

- Codes to control the computer
  - assembly language
  - C, C++, Fortran, Basic, Java, etc.

- Source files
  - file extension   project1.c

- Object file
  - compiler output

- Executable file
  - linker output

Algorithm and Coding

- Algorithm: a set of instructions
- Syntax: the way a statement is constructed
- Semantics: what a statement actually does
- Examples

  $a=3.6$

  $a=a+3.6$

Notes

- C language is case sensitive
  - A and a are different
- Declare types of all variables at beginning
- Blank spaces are *usually* ignored
- Use clean readable style
- Add comments