
SEEM3460 Tutorial Assignment 1

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Pls ensure the followings:

- ❑ **Use CUHK network if you are using your own computers**
 - ❑ Otherwise you won't be able to connect to the servers
- ❑ **Connect to our remote servers**
 - ❑ `linux03.se.cuhk.edu.hk`
 - ❑ `linux04.se.cuhk.edu.hk`

Overview

- ❑ Review of last tutorial
- ❑ Assignment 1 clarification
- ❑ Submission

Compiling C programs in Linux

- ❑ Compiler: `gcc` – GNU C Compiler, freeware
- ❑ Method 1: `gcc filename`
 - ❑ file “a.out” will be generated in the current working directory
 - ❑ example: `gcc reverse.c`
- ❑ Method 2: `gcc inputFileName -o outputFileName`
 - ❑ You can customize outputFileName
 - ❑ example: `gcc reverse.c -o reverse1`
 - ❑ `gcc reverse.c -o reverse1.abcde`
- ❑ Run(execute) the program: `./outputFileName`

Debugging C programs in Linux

❑ What is bug ?

“grammar mistakes”

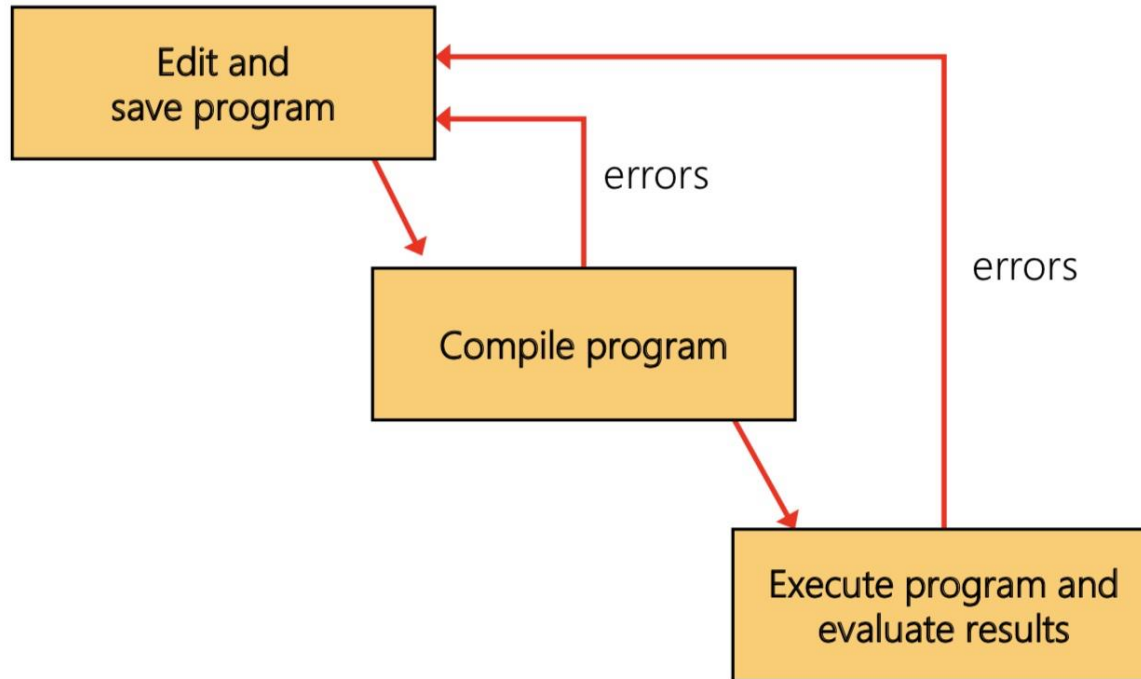
- Compilation Error or Syntax Error

“compile successfully but do not output expected result”

- Runtime Error or Logical Error

❑ In essence, debugging is to find bugs and fix them

Basic Program Development



Debugging C programs in Linux

- ❑ How to debug?
 - ❑ Output values of variables (eg. use `printf`)
 - ❑ easy to do and effective
 - ❑ popular among experienced programmers
 - ❑ Use debugger to find bugs

Assignment 1

- ❑ You need to add comment to your code.
- ❑ Name the code file and function in your code in a meaningful way. For example, Q1a.c, Q2.a.c, etc.
- ❑ You can copy and modify the code in the lecture note to achieve your aim.
 - ❑ For example, you can use the code in “Unix and C programming” for Q1.

Assignment 1

- ❑ **Do not plagiarize !!**

- ❑ If a student plagiarizes, there will be a heavy punishment.
The definition of plagiarism includes copying all or part of programming assignments from other's work or the Web.
The penalty will apply to both the one who copies the work and the one whose work has been copied.

Assignment 1 – Q1

- ❑ Could refer to the code in lecture note “Unix and C programming”
- ❑ Q1a - Match the input and output styles with version 2
- ❑ Verify the correct operations of both versions with appropriate data – Show at least 3 successful running examples for both version. Provide the screenshots that include both input and output.

Assignment 1 – Q1

□ An example:

```
Enter rows and columns for matrix A: 3 3
Enter rows and columns for matrix B: 3 4
Enter elements of matrix A:
A[0][0] = 3
A[0][1] = 4
A[0][2] = 5
A[1][0] = 6
A[1][1] = 7
A[1][2] = 8
A[2][0] = 10
A[2][1] = 23
A[2][2] = 1
Enter elements of matrix B:
B[0][0] = 4
B[0][1] = 1
B[0][2] = 35
B[0][3] = 6
B[1][0] = 8
B[1][1] = 10
B[1][2] = 23
B[1][3] = 45
B[2][0] = 32
B[2][1] = 134
B[2][2] = 56
B[2][3] = 75

Matrix A:
3      4      5
6      7      8
10     23     1

Matrix B:
4      1      35     6
8      10     23     45
32     134    56     75

Result Matrix C (A × B):
204     713     477     573
336     1148    819     951
256     374     935    1170
```

Assignment 1 – Q2

- ❑ Q2a and Q2b - Show at least 3 successful running examples. Provide the screenshots that include both input and output.
- ❑ The description should be clear and concise.

Assignment 1 – Submission

- ❑ 5 files to submit in total. 1 PDF file containing your discussion and screenshots for each question, 2 c programming files for Q1-a, 1 c programming file for Q2-a and 1 c programming file for Q2-b.
- ❑ Name: PDF file : <student ID>-assign1-main.pdf; 2 c programming files for Q1-a: q1a_v1.c, q1a_v2.c; 1 c programming file for Q2-a: q2a.c; 1 c programming file for Q2-b: q2b.c

Assignment 1 – Submission

- ❑ Put all files in a folder and zip this folder. Name it as <student ID>-<student name>-assign1.zip. Submit only this zip file.
- ❑ Still has questions? Email TAs:

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