Part 1 Basic Unix Commands

Assignment: In this first part of the course, you will learn basic commands so that you can login, create files and compile programs. Read the history of UNIX. Then read the short Lecture 1 notes and read sections 1.1 through 1.5 in the Molay book. This will give you a basic understanding of unix commands.

Then read about the script command. You must use the script command for all your homeworks. This command records what you type on your keyboard to a file, so you can email me your homework. After reading it, do Exercise 1 and email it to me (Note: you must use the script command for problem 2, by typing the script command with a filename you choose before doing problem 2, and emailing me the file).

After finishing Exercise 1, your next step is to learn more unix commands. Read the Lecture 2 notes the Lecture 3 notes, and the Lecture 4 notes, then do Exercise 2 and email the script output to me.

Finally, you need to learn a basic unix text editor so that you can create programs. Read the Lecture 5 notes then do Exercise 3 and email it to me.

Part 2 Introduction to C Programming

Assignment: This week introduces the C programming language. Many C statements are similar to Java statements, so it should be very easy for you to learn the loops and if statements. Although you have seven chapters to read and seven exercises to do, this material is largely a repetition of what you learned in Java programming. The code in the book is available here. Read the following sections in the C Programming book, and do the indicated exercises, emailing your source code to me.

You may choose to do either the basic or advanced exercises. You do not need to do both. The advanced exercises are designed for students with previous knowledge of C.

Basic Exercises:

1. Chapter 2, do programming project 2 on page 34.
2. Chapter 3, do exercise 1 on page 49.
3. Chapter 4, do exercise 1 on page 68.
4. Chapter 5, do programming project 5 on page 96.
5. Chapter 6, do exercises 1 and 2 on page 121.

6. Chapter 8, do programming project 1 on page 178.
7. Chapter 9, do exercise 1 on page 214.

Advanced Exercises:

1. Chapter 8, do Programming Projects 9 and 16 on page 179, page 180, and page 181.
2. Chapter 9, do Programming Project 4 on page 217.

Part 3 More C Programming

Assignment: Continue working in the C Programming book. The material for this week is new to you and is more advanced. Read the following sections and do the indicated exercises, emailing your source code to me.

You may choose to do either the basic or advanced exercises. You do not need to do both. The advanced exercises are designed for students with previous knowledge of C.

Basic Exercises:

1. Chapter 11, do exercises 1, 3 and 4 on page 255.
2. Chapter 12, do exercises 1, 5 and 8 on page 273 - page 274.
3. Chapter 16 (sections 16.1 - 16.3), do exercise 8 part a on page 409 and programming project 4 on page 412.

Advanced Exercises:

1. Chapter 11, do exercises 1 and 8 on page 255 - page 256.
2. Chapter 12, do exercises 1 and 17 on page 273, page 274 and page 275.
3. Chapter 17, do exercises 5, 7 and 8 on page 454.
4. Chapter 20, do exercise 6 on page 525.

Part 4 Introduction to System Programming

Assignment: This week we move to the Molay book on Linux Programming. Read the following sections and do the indicated exercises, emailing your source code to me.

You may choose to do either the basic or advanced exercises. You do not need to do both. The advanced exercises are designed for students with previous knowledge of Linux.

Basic Exercises:

1. Chapter 1, no exercises.
2. Chapter 2, do exploration 2.3 on page 68.
3. Chapter 3 (sections 3.1 - 3.6), do programming exercise 3.16 on page 106.
4. Chapter 4 (sections 4.1 - 4.5), do explorations 4.2 and 4.10 on pages 136-137.

Advanced Exercises:

1. Chapter 1, no exercises.
2. Chapter 2, do programming exercise 2.15 on page 70.
3. Chapter 3, do programming exercises 3.11 and 3.17 on pages 105-106.
4. Chapter 4, do programming exercise 4.16 on page 138.

Part 5 Signals and Processes

Assignment: This week we continue in the Molay book on Linux Programming. Read the following sections and do the indicated exercises, emailing your source code to me.

You may choose to do either the basic or advanced exercises. You do not need to do both. The advanced exercises are designed for students with previous knowledge of Linux.

Basic Exercises:

1. Chapter 6, do programming exercise 6.7 on page 195.
2. Chapter 8, do explorations 8.4 and 8.5 on page 280 and programming exercise 8.8 on page 281 (do only the first part, expanding the code in waitdemo1.c so it creates two children).

Advanced Exercises:

1. Chapters 6 and 7, do either programming exercise 7.12 or 7.16 on pages 247-248.
2. Chapter 8, do programming exercise 8.10 on page 281.

3. Chapter 9, do programming exercise 9.4 on page 319.