HOMEWORK 1 Solution

1. Assume there are no files or directories when you logged in to issue the following Linux commands, in the order specified below:

```
mkdir A
mkdir B
cd A
mkdir C
mkdir D
cd C
mkdir E
cd ../..
mkdir F
cd F
mkdir G
cd ../A
ls
cd..
ls
mv A F
ls
```

a) (2 points) Draw the directory structure (tree) at the end when all the above commands have been executed.

```
   Root
    /  
   B  F
    /  
   G  A
    /  
   C  D
    |  
   E
```

b) (2 points) Indicate the list that will be printed by the first `ls` and the second `ls` above.

```
C D
B F
```

2. You compile your C program by using the GCC compiler.

a) (1 point) What does a compiler do?

b) (1 point) What is the input to the compiler and what is the output from the compiler?
a) It checks for syntax errors in your program, does preprocessing functions and generates executable (or object code).
b) Your source code (C-program) and output is the executable (or object code).

3. Following defines a constant and an integer variable which are assigned values:

```c
#define PI 3.14
int Foo = 24;
Foo = 5;
Foo = Foo + Foo;
```

a) (1 point) PI is the name of the constant 3.14. What is the advantage of using a name for the constant?

Use the name instead of the actual value. If the value of the constant needs to be changed, it is changed only in one place, i.e., in the `#define` statement.

b) (1 point) What is the final value of Foo?

10

4. To answer the following questions, you can either read the second chapter of the textbook or google them:

a) (1 point) What is IDE?
b) (1 point) Name two IDE for C on Linux

a) IDE: stands for Integrated Development Environment, is a programming environment that has been packaged as an application program, typically consisting of a code editor, a compiler, a debugger, and a graphical user interface (GUI) builder.

b) Eclipse, Geany, Kdevelop, Netbeans,…