

# Computer Programming: Skills and Concepts

## Tutorial 1

Week 3 — October 4–8, 2010

### C syntax

Consider the following buggy code:

```
#include <stdio.h>
#include <stdlib.h>

const OLD_PENCE_PER_SHILLING = 12;
const OLD_PENCE_PER_POUND = 240;
const NEW_PENCE_PER_POUND = 100;

int main(void) {
    int pounds; shillings; oldpence; newpence;

    pounds = 4
    shillings = 7
    oldpence = 8

    oldpence = oldpence + shillings * OLD_PENCE_PER_SHILLING;
    newpence = ( oldpence / OLD_PENCE_PER_POUND ) * NEW_PENCE_PER_POUND;

    printf("%d %d/%d in old money , pounds, shillings, oldpence);
    printf(is %d.%d in new money.\n, pounds, newpence);
    return EXIT_SUCCESS;
}
```

What mistakes can you find? Correct the code!

### Variables

What is printed on the screen for the following code fragments?

```
 int a = 2; printf("%d", a);
 int a = 5/3; printf("%d", a);
 int a = 3, b = 5; a = b/3 + a; printf("%d, %d",a,b);
 int x,y; x = 3; y = x % 2; printf("%d,%d",x,y);
 int x, y; y = 3; y = x + 2; printf("%d,%d",x,y);
 int a = 5, b = 12; b = a++; a = b--; printf("%d, %d",a,b);
```

### scanf and Conditionals

What does the following code do?

```
int eggs;
const int EGGBOX = 6;

scanf("%d",&eggs);
if ( eggs % EGGBOX == 0 ) {
    printf("You have %d boxes of eggs\n", eggs/EGGBOX);
} else {
    printf("You need %d more eggs to make up %d boxes\n",
        EGGBOX - (eggs % EGGBOX), eggs/EGGBOX + 1);
}
```