Defaulting Arguments

You can specify a *default* argument for parameter

Syntax
return_type functionName(*type parameter = default_value*);

For example:

Let's say you want ConvertTemp to default to converting F to C.

```
int ConvertTemp(float temp, char fromTemp = 'F');
```

NOTE: you **MUST** put the parameters with default values **following** all the parameters that don't have default values

➔ You can only put the default in the prototype or the definition - **not both**

→ it is best practice to put it with the prototype

Example

Prototype

① Datatype not the same

```
float ConvertTemp(float temp,
                  char fromTemp = 'F');
```

temp fromTemp

Function Def.

```
int ConvertTemp(float temp,
                char  fromTemp)
{
  if (toupper(fromTemp) == 'F')
  {
    return ((temp-32)*(5/9));
  }
  elseif (toupper(fromTemp)=='C')
  {
    return (temp * (9/5) + 32);
  }
  else
  {
    cout << "some error message";
    return 0;
  }
}
```

④ should add space

⑤ space

⑥ should add string enumet variable or specify literal

① ② ③

We can call this function from another function like this:

What is wrong with this code?

```
#include <iostream>
#include <iomanip>
#include<string>
Using namespace std;

String  name;
int     numRounds;
int     roundCount;
Char    userPlay;
Char    pcPlay;
bool    checkWinner;
bool    checkMatchWinner;

int main()
{
        GetInput(name,&numRounds);

   for(roundCount = 1  ; roundCount<= numRounds; roundCount++)
    {
       GetAndCheckPlay(&userplay);
       GetComputerPlay(&pcPlay);
      checkWinner = CheckWin();
       OutputWin(name);
    }

       Cout << name;
       OutputMatchWinner();
```

FUNCTION PROTOTYPES:

```
void GetInput(string name, numRounds);
char GetAndCheckPlay(char&userPlay);
Char GetComputerPlay(char&pcPlay);
bool CheckWin(char&userPlay, char&pcPlay);
void OutputWin(string name, bool checkWinner);
void OutputMatchWinner(string name, bool checkMatchWinner);
```

FUNCTIONAL DECOMP/PSEUDOCODE

BEGIN

main → INITIALIZE roundCount = 1

function → INPUT name
INPUT numRounds

main — FOR roundCount to numRounds

function — INPUT userplay

function — PROCESSING pcPlay

function — PROCESSING checkWinner

function → OUTPUT name
OUTPUT checkWinner
END FOR

main — OUTPUT name

function → IF checkWinner = true
OUTPUT winPercent
ELSE
OUTPUT lossPercent

END