

## ca5-1 – Loops 1

**Note: for some of these problems, a code segment is provided to use as a guide. You may have to add additional code to complete the program. (For example, you must add the `#include <iostream>`**

**filename: ca5-1a.cpp**

Using program 5-3 as a guide, Write a program that will print your name 8 times, and then print done. You must use a while loop, do not put 8 cout statements in your program.

**filename: ca5-1b.cpp**

The following program segment uses a while loop to read in 2 scores per line. The teacher decided to add 10 bonus point to the total. This program work for any number of lines of data

```
int score, total;
while ( cin>>score1>>score2 )
{
    total = score1 + score2+10;
    cout<<score1<<" "<<score2<<" current total "<<total<<endl;
}

```

**Write a program that will read in 3 scores per line. The teacher decide to give 40 bonus points. Your program should work of any number of lines of data.**

**filename: ca5-1c.cpp**

The following program calculates a letter grade from a test score. It uses a while loop to read in more than one line of data and validates the test score.

```
.
// This program uses an if/else if statement to assign a
// letter grade (A, B, C, D, or F) to a numeric test score.
#include <iostream>
using namespace std;
```

```

int main()
{ int testScore;          // To hold a numeric test score
  char grade;            // To hold a letter grade

  while ( cin >> testScore)
  {
    if (testScore < 0 || testScore > 100)    //Input validation
    {
      // An invalid score was entered.
      cout << testScore << " is an invalid score.\n";
    } else
    { // Determine the letter grade.
      if (testScore < 60)
        grade = 'F';
      else if (testScore < 70)
        grade = 'D';

      else if (testScore < 80)
        grade = 'C';
      else if (testScore < 90)
        grade = 'B';
      else if (testScore <= 100)
        grade = 'A';

      // Display the letter grade.

      cout << "Your grade is " << grade << endl;

    } // Brace to end the else
  } //brace to end the while loop
}

```

**Using the above program as a guide, write a program that will read in a test score. A valid test score is between 0 and 200. A passing score is 125 or more. If the score is valid, print passing if the score is passing and failing if the score is not passing. If the score is not valid, print invalid score.**