

## CS 1336 Programming Assignment

Total Points (100 pts)

### Assignment #5

Your fifth programming assignment consists of two C++ programs. It should compile correctly and produce the specified output. Give meaningful name to the program and submit it to eLearning. **Use while loops for both the programs.**

Please note that the program should comply with the commenting and formatting rules we discussed in class.

#### **Program #1 (50 points):**

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Suppose the tuition for a university is \$10,000 this year and increases 5% every year. In one year, it will be \$10,500. Write a program that displays the tuition in 10 years, and total cost of four years' worth of tuition **after the tenth year (11<sup>th</sup> to 14<sup>th</sup> year).**

Here's how the output should look:

```
Tuition after 1 years is 10500
Tuition after 2 years is 11025
Tuition after 3 years is 11576.2
Tuition after 4 years is 12155.1
Tuition after 5 years is 12762.8
Tuition after 6 years is 13401
Tuition after 7 years is 14071
Tuition after 8 years is 14774.6
Tuition after 9 years is 15513.3
Tuition after 10 years is 16288.9

The four-year tuition after ten years will be $73717.8
```

#### **What to deliver?**

Your .cpp file including: pseudocode in the beginning of the code, code with other appropriate comments and output at the bottom of your program. (Code: 30 points, pseudocode:10 points, Comments: 5 points, output: 5 points)

## Program #2 (50 points):

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Write a program that calculates the amount a person would earn over a period if his/her salary is one penny the first day, two pennies the second day, four pennies the 3<sup>rd</sup> day and continues to double each day.

The program should display a table that shows the salary for each day and then show the total pay at the end of the period. The output should be displayed in dollars and not in pennies. **Input Validation: Do not accept a number less than 1 for the number of days worked**

Make your output look as much like the sample output provided below as possible.  
Here's a sample shown

Sample Output:

```
For how many days will you work? 5
```

Day	Pennies Earned
1	1
2	2
3	4
4	8
5	16

```
Total pay: $0.31
```

### What to deliver?

Your .cpp file including:

1. Your pseudocode in the beginning of the code, code with other appropriate comments and output at the bottom of your program. (Code: 30 points(5 points will be for input validation), pseudocode:10 points, Comments: 5 points, output: 5 points)
2. Two sample runs with the following inputs: (2.5 points)  
(1) 12 days  
(2) 28 days

**Note that you need to run your program 2 times. Each time you run it, copy and paste the program output to the bottom of your program.**