COS120 C++ Programming

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| Homework 2 | **Skills in C++ functions** |

**Tasks: It is your choice to solve one of the following two tasks:**

**Task 1. (finance)** Suppose you save $100 each month into a savings account with the annual interest rate 5%. Thus, the monthly interest rate is 0.05/12=0.00417.

After the first month the value in the account becomes

100 \* ( 1 + 0.00417 ) = 100.417

After the second month the value in the account becomes

( 100 + 100.417 ) \* ( 1 + 0.00417 ) = 201.252

After the third month the value in the account becomes

( 100 + 201.252 ) \* ( 1 + 0.00417 ) = 302.507

Write a program that prompts the user to enter a monthly saving amount and displays the account value after 6th month.

Capsulate the problem solution using user defined function compoundVal() that accepts three values as formal parameters monthly deposited sum, interest rate and number of months and returns the accumulated amount of money

Write a driver program to test user defined function with appropriate data for the actual arguments.

**Task 2. (geometry)** Write a program that prompts the user to enter 2D coordinates of two points (x1,y1) and (x2,y2) and displays two result values:

Their distance between them. Formula for computing the distance is

Note: you can use sqrt(val) or pow(val, 0.5) to compute square root of val.

The slope of the line that connects them. Formula of the slope: (y2-y1)/(x2-x1)

Capsulate the problem solution using two user defined functions distance() and user defined function slope() that accept coordinates of two points as formal parameters and return the distance btw the points and the slope of the line that connects the points.

Write a driver program to test user defined functions with appropriate data for the actual arguments.

**Deadline**

**The homework is due by Thursday, Oct 08, 2015, 23:59:00 - to be uploaded in Blackboard system, COS120 class.**

Late work will be penalized. Max period for late work to be accepted is five days.

**Instructions for report preparation:**

**All of the following deliverables must be uploaded in Blackboard system as a single MS Word document including header page and sections to follow SDM**. **You should use the same Word file if you present solutions of both tasks.**

1. A header page with your name, course title and task. See template:

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| COS120 C++ Programming Student: Ivan Petrov Homework No 02  Task: The text of the task to be displayed here |

1. A Second page which must also specify if you have completed successfully the assignment. If you have not completed the assignment, you must say so and explain, e.g. code will not compile, program does not work correctly, etc.
2. You need to include on separate sections the following information according Software Development Method:
3. Analyses and Design **(10% of grade)**.
4. Implementation **(70% of grade)**. Source Code and Comments. A C++ source listing of your program. Make sure that you comment your code with meaningful comments.
5. Testing **(20% of grade)**. Evidence of working program. Screen shots of your program running with annotations which explain what it is doing. You must have enough screenshots to demonstrate that your program works.