National University of Computer and Emerging Sciences

Lab Exercise 04

For

Programming Fundamentals Lab

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FAST School of Computing

Instructions:

1. Save solutions files of tasks in a folder (3 solution files), compressed that folder and upload only zipped folder
2. Save the zip folder with the name in format "SECTION_ROLL NO_LAB NO"
3. No submissions will be accepted after deadline

Task 1:

Consider the following program segment:

```
//include statement(s)
//using namespace statement
int main()
{
      //variable declaration
     //executable statements
    //return statement
}
```

1. Write C++ statements that include the header files and allows you to use cin, cout, and endl without the prefix std::
2. Write C++ statements that declare and initialize the following named constants: SECRET of type int initialized to 11 and RATE of type double initialized to 12.50
3. Write C++ statements that declare the following variables: num1, num2, and newNum of type int; name of type string; and hoursWorked and wages of type double.
4. Write C++ statements that prompt the user to input two integers and store the first number in num1 and the second number in num2
5. Write a C++ statement(s) that outputs the values of num1 and num2, indicating which is num1 and which is num2. For example, if num1 is 8 and num2 is 5, then the output is:
   The value of num1 = 8 and the value of num2 = 5.
6. Write a C++ statement that multiplies the value of num1 by 2, adds the value of num2 to it, and then stores the result in newNum. Then, write a C++ statement that outputs the value of newNum
7. Write a C++ statement that updates the value of newNum by adding the value of the named constant SECRET. Then, write a C++ statement that outputs the value of newNum with an appropriate message
8. Write C++ statements that prompt the user to enter a person's last name and then store the last name into the variable name
9. Write C++ statements that prompt the user to enter a decimal number between 0 and 70 and then store the number entered into hoursWorked
10. Write a C++ statement that multiplies the value of the named constant RATE with the value of hoursWorked and then stores the result into the variable wages
11. Write C++ statements that produce the following output:

Name: //output the value of the variable name
Pay Rate: $ //output the value of the variable rate
Hours Worked: //output the value of the variable //hoursWorked
Salary: $ //output the value of the variable wages

For example, if the value of name is "Rainbow" and hoursWorked is 45.50, then the output is:

Name: Rainbow
Pay Rate: $12.50
Hours Worked: 45.50
Salary: $568.75

Task 2:

Write a program that does the following:

1. Prompts the user to input five decimal numbers.
2. Prints the five decimal numbers.
3. Converts each decimal number to the nearest integer.
4. Adds the five integers.
5. Prints the sum and average of the five integers.

Task 3:

1. Define a string that contains the word Problem.
2. Define one string as the word Problem and define another string as the word Solving. Combine these two strings to make the statement Problem Solving
3. Define a string that contains the number 8 and a string that contains the number 5. Combine these two strings with the plus operator +