NATIONAL TEXTILE UNIVERSITY

Department of Computer Science

Lab # 7: Programming Fundamentals (COC-1071)

Basic Information			
Registration#		**Name**	
Total Marks		**Marks Obtained**	
Tools:	Dev-C++ 5.4.1		
Objectives	1. Default Arguments 2. Function Overloading	3. Template Function 4. Header File	
Note	Solve the following problems using the concepts we have covered so far		

Defaults arguments and Function overloading:

1. Implement Add, subtract and multiply function for 5 arguments. Give Default values to the last three.
2. Write a function, which takes 5 arguments and print their average. Give Default value to the last argument.
3. Implement four functions with name **add** which return addition. First receive 2 integer arguments, second receive 2 float arguments, third take 3 integer arguments and fourth takes 3 float arguments.
4. Write two functions which the name **largest**, which takes three arguments and print largest. One function receives all integer argument and the other receives all float arguments. Call both function in main
5. Write a function with name **input and output.** These functions will be used for input and output three of their arguments. Overload these functions for int, float and character data types
6. Overload Swap function for floats and characters

Template Functions:

7. Write a template function, which takes 5 arguments and print their average. Use this function in main.
8. Write a template function, which takes 5 arguments and return their addition. Use this function in main.
9. Write a template function, which takes three arguments and return the smallest. Use it in main in all possible ways.
10. Write a template function which take the radius of circle and return the area of circle
11. Write a template function for swap. Use this function inside main for floats and characters

Header Files & Built-in Functions

12. Write question no 1 in a header file and used this header file inside your program.
13. Write q. no 5 in header file and use two header file one for input and other for output used these header files
14. Use following math function in main constants and variables
15. Implement math function in switch and calculate appropriate function

Function
pow(x, y)
sin(x)
sqrt(x)
tan(x)

16. $y = y_c \pm \sqrt{r^2 - (x_c - x)^2}$ Apply this equation for x(10,11,12,13,14,15) and calculate y. yc=3, xc=3, r=7
17. $x=x_c+r\cos\Theta$, $y=y_c+r\sin\Theta$, calculate x and y for theta (90-120)
18. Following code generate random values between 1 to 6. Implement this code.

```
#include<iostream>
#include<cstdlib>
#include<ctime>
using namespace std;
int main(){
srand(time(NULL));
int randvalue=1+rand()%6;
cout<<randvalue<<endl;
return 0;
}
```