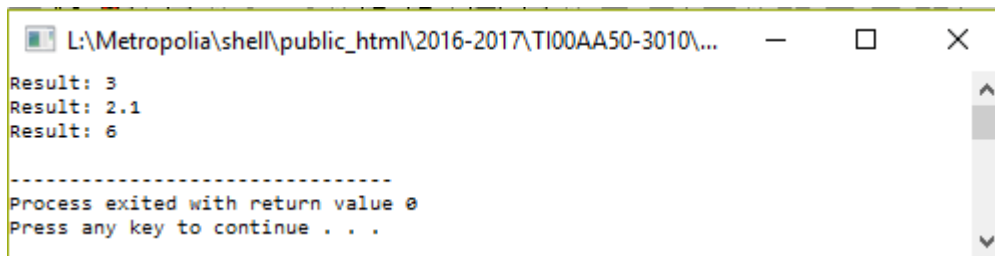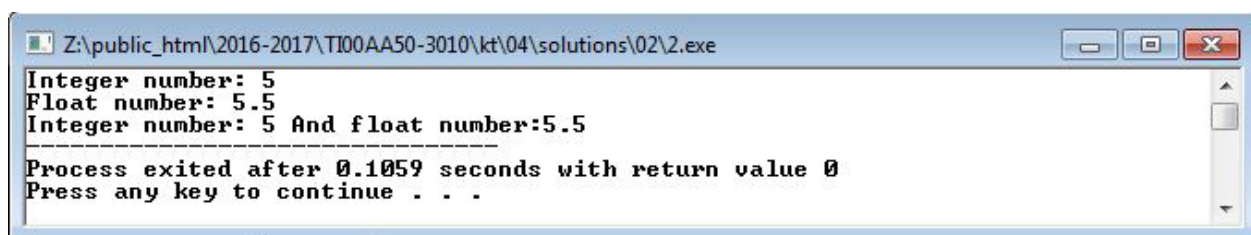1. **Multiple parameter overloading**. Implement a program where the types of parameters of the overloaded functions **add** and the number of parameters may be different. In the first **add** implementation are two integer parameter. In the second **add** implementation are integer parameter and double parameter. In the third **add** implementation are three integer parameters. In main function are definitions A = 1, B = 2, C = 3 and D = 1.1. Furthermore in main program are calls add (A,B), add (A,D) and add (A,B,C). Sample print is in figure 1.

Figure 1. Sample print in Dev C++ -program

2. **Function overloading**. Implement a program where the types of parameters of the overloaded functions **test** and the number of parameters may be different. In the first **test** implementation is one integer parameter. In the second **test** implementation is one float parameter. In the third **test** implementation are one integer parameter and one double parameter. In main function are definitions int a = 5 and float b = 5.5. Furthermore in main program are calls test (a), test (b) and test (a,b). Sample print is in figure 2.
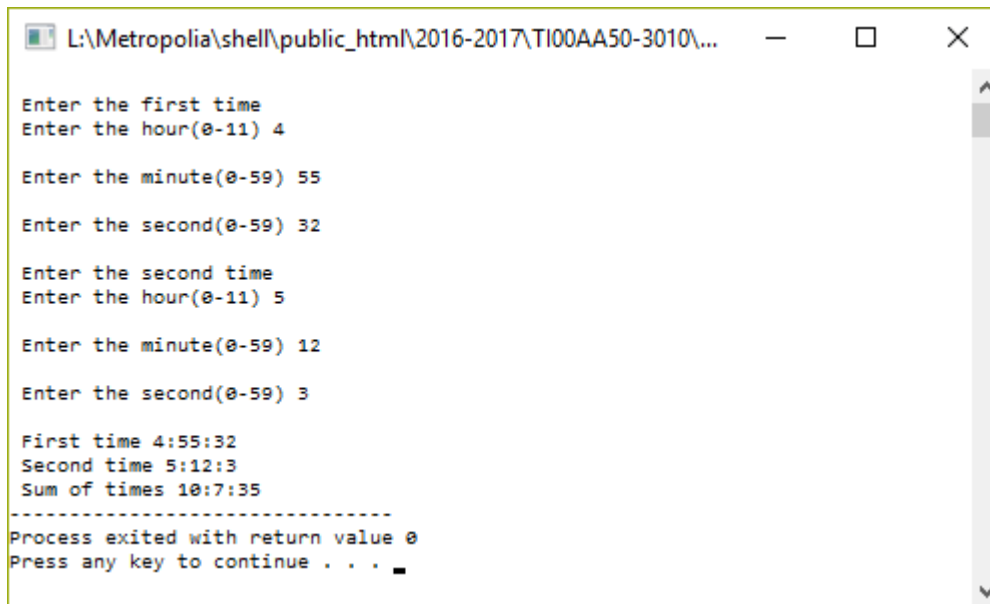

Figure 2. Sample print in Dev C++ -program

< continued >

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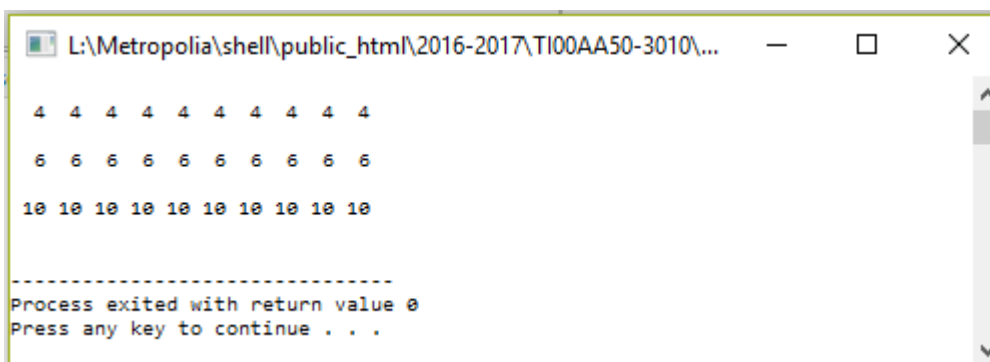10/06/2016
Homework 4
Overloading

3. **Overloading Arithmetic Operator**. Implement a program where you overload **+** operator you add to Time(hh:mm:ss) objects. In figure 3 you can see input and output.

```
L:\Metropolia\shell\public_html\2016-2017\TI00AA50-3010\...    —    □    ×

Enter the first time
Enter the hour(0-11) 4

Enter the minute(0-59) 55

Enter the second(0-59) 32

Enter the second time
Enter the hour(0-11) 5

Enter the minute(0-59) 12

Enter the second(0-59) 3

First time 4:55:32
Second time 5:12:3
Sum of times 10:7:35
--------------------------------
Process exited with return value 0
Press any key to continue . . .
```

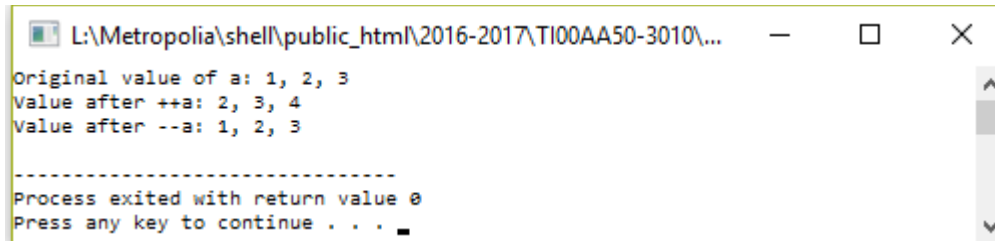Figure 3. Sample print in Dev C++ -program

4. **Overloading + operator**. Implement a class **Plus** which consists one attribute **int Array [10]**, constructor **Plus (int InitValue)**, table printing method void **PrintArray ()** and + overloading method **Plus operator+ (Plus &AnotherObject)**. In main program you create two **Plus** object with clauses **Plus FirstObject (4)** and **Plus SecondObject (6)**. Immediately after that you print the contents of both table an in figure 4 you can see output. Then you create one **Plus** object with clause **Plus DifferenceObject (0)** and use clause **DifferenceObject = FirstObject + SecondObject** and after that you have to print the content of object **DifferenceObject**. In figure 4 you can see output.

```
L:\Metropolia\shell\public_html\2016-2017\TI00AA50-3010\...    —    □    ×

4  4  4  4  4  4  4  4  4  4

6  6  6  6  6  6  6  6  6  6

10 10 10 10 10 10 10 10 10 10

--------------------------------
Process exited with return value 0
Press any key to continue . . .
```

Figure 4. Sample print in Dev C++ -program

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Homework 4
Overloading

5. **Overload the ++ and -- unary operator**. Implement a class **ThreeD** which contains integer attributes x, y, z (3-D coordinates). Implemet non parametric constructor and three parametric constructor. Implement unary operators **ThreeD operator++()** and **ThreeD operator--()** . Implement also function show() which prints object coordinates. In main program create one object **a** and print immediately coordinates with show() function. Then make clause ++a and print coordinates with show() function. Furthemore make clause --a and print coordinates with show() function. In figure 5 you can see output.

Figure 5. Sample print in Dev C++ -program