

Lab Workbook 5

Software Development HDSWD

Repetition Statements

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For each problem make sure to use the same steps we have been using so far!

1. Problem Definition

- a. Define the problem in your own words
- b. Read the problem and determine what it is asking you to do. Highlight the keywords
- c. Describe the features of the application and what its goal is

2. Design - Overall Plan

- a. What objects and classes are you going to use
- b. What types of data will I be working with
- c. What is the input
- d. What processing will be done
- e. What will the output be
- f. What will be the components of the class be
 - i. What data members do you need
 - ii. What will your constructor do (default initialization, initialize to different values using overloaded constructors)
 - iii. What methods will you need (getters and setters for data members, what behaviour is needed, what will it do)

3. Implementation

- a. Create the classes
- b. Declare and create objects
- c. Provide input and display output

4. Testing

- a. Was the output correct?
- b. Did the program compile and run successfully
- c. Test the application with different values

Problem 1:

Create a main class called Problem1 containing a main method. Implement a nested for loop that produces the following output when run.

```
1 2 3 4 5
2 3 4 5 6
3 4 5 6 7
4 5 6 7 8
5 6 7 8 9
```

Problem 2:

Create a main class called Problem2 containing a main method. This application will continually ask the user for integer input in a input box and print the square of that number either in the standard output or a message box. The user should be continually asked for input until a negative number is entered. Create an integer variable called number and assign it a value using an input box. Use a while loop containing a suitable test condition to implement this problem.

Problem 3:

Do-while loops can be used for input validation. As the test condition happens after the statements input can be validated after the user has input something. Create a main class called Problem3 containing a main method. Create an integer variable called score and initialize it to be 0. Create a do while loop that asks the user to input an integer that is stored in score. Use the test expression of the do while to check that the score is between 0 and 100.