**Lab 5**

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| **Exercise 1**  **DVD Class**   * Create a DVD class with 4 member variables:   + Title (String)   + Director (String)   + Cost (double) * Create a default constructor * Create an overloaded constructor to initialise all member variables using a parameter list * Override the toString method to display a description of the DVD – see sample output for formatting guidelines   **DVDCollection Class**   * Create a DVDCollection class with 3 member variables:   + Count (int)   + totalCost (double)   + list of dvds in the collection (array of type DVD) * Create a default constructor which sets the count and totalCost to 0 and sets the size of the array to 4. * Create an addDVD method which takes 3 parameters representing the title, director and cost   + Call the overloaded DVD constructor to create a DVD object and store it in the array   + Update the totalcost variable using the cost variable   + Update the count variable by incrementing it by 1 * Override the toString method to display details of the DVD collection: Number of DVDs, total cost of DVDs, average cost of DVDs and the list of DVDs –use the sample output to see how you should write this method   **TestDVDCollection**   * Create a DVDCollection object using the default constructor * Call the addDVD method 4 times to add 4 DVDs to the collection. Use the test data provided in the sample output shown below * Print out the DVD collection   **Sample Output**  ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~  My DVD Collection  Number of DVDs: 4  Total cost: €92.75  Average cost: €23.19  DVD List:  Cost: €25.95  Title: The Walk  Director: Robert Zemeckis  ~~~~~~~~~~~~~~~~~~~~~~~~~~  Cost: €24.95  Title: Trainwreck  Director: Judd Apatow  ~~~~~~~~~~~~~~~~~~~~~~~~~~  Cost: €27.95  Title: No Escape  Director: John Erick Dowdle  ~~~~~~~~~~~~~~~~~~~~~~~~~~  Cost: €13.90  Title: Paper Towns  Director: Jake Schreier  ~~~~~~~~~~~~~~~~~~~~~~~~~~ |  |

**Exercise 2**

After running the program from Exercise 1 the current capacity in the DVD array has been reached i.e. 4. We now want to increase the size of this array. Write a method called increaseCapacity in the DVDCollection class, which first creates an array that is twice as big as the current array. Each DVD in the existing collection is then copied into the new array. Finally, the collection reference is set to the larger array.

You can call this method in the addDVD method – if the count of DVDs in the collection is equal to the length of the collection then this method should be called.

In order to test this method create two more DVD objects in the test class and print out the DVD collection again. See sample output below:

**Sample Output:**

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My DVD Collection

Number of DVDs: 6

Total cost: €168.69

Average cost: €28.11

DVD List:

Cost: €25.95

Title: The Walk

Director: Robert Zemeckis

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Cost: €24.95

Title: Trainwreck

Director: Judd Apatow

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Cost: €27.95

Title: No Escape

Director: John Erick Dowdle

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Cost: €33.90

Title: Paper Towns

Director: Jake Schreier

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Cost: €39.99

Title: Captive

Director: Jerry Jameson

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Cost: €15.95

Title: Minions

Director: Kyle Balda

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