| **Ahsanullah University of Science and Technology**  **Course Title: Object Oriented Programming Lab**  **Course Number: CSE1206**  **Fall 2020** |
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**Assignment: 3 Section: A2 and B1**

| 1. Create a Java Project Named ‘**Box**’. Inside the same package create a new class named ‘**Cube**’. Inside the **Cube** class create 3 private variables:   **cubeColor** (String), **edge** (double), **cubeType** (Cube)   1. Create an **empty** constructor. 2. Create a second constructor which takes only **cubeColor** and **edge** as parameters and initializes them. 3. Create a third constructor which takes only **cubeType** as parameter and initializes it. 4. Create getter setter methods for only **cubeColor** and **edge** variables. (No need to create a getter setter for cubeType). 5. Create a public method **getArea()** whosereturn type is **double** and takes **no parameters.** Inside the method calculate the area of the cube.   Formula: Area of Cube = |
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| 1. Create another method named **compareCube()** whosereturn type is **void** and takes 1 parameter of **Cube class.** You can name the variable according to your wish.   Inside the method do the following:    Call the **getArea()** methods for two Cube objects (**current class** object and **parameter** object)**.**  Find out the percentage area of both objects in the following way:  Take the last 2 digits of your **student ID**. Apply that as percent to the cube area.  Suppose the last 2 digits of your ID are 26. Take 26% area from the Cube. **You must do the calculation in your code.**  (Tip: if you get zero as answer while converting to percentage, use 26.0 or 100.0 for calculation)  **Example:** if the area of the 1st cube is 100.0 and the 2nd cube is 50.0.  Then percentage will be:  Cube One Area Percentage = 26.0 and and cube Two Area Percentage = 13.0  Now compare the cube Area Percentages and cube Colors of the two cubes.  If all match then print: **“Cubes are identical”**  Otherwise print: **“Cubes are different”** |
| 1. Inside the Box class, there will be the main method. Inside the main method, create objects of Class Cube. Create objects as many as you want.   Assign values according to your choice using the parameterized constructor or setters, whichever you prefer.  Now call the **compareCube()** methods to compare the cubes. Also print the cubeColors and cube Areas of the compared cubes.  You should show both cases, That is, whether cubes are identical or different.  Design this as per your choice.  **(Do not copy the codes from each other. The main method will be different if you do it yourself. If I find the same objects and same value assignments here then I’ll deduct marks).** |

**Best of Luck to Everyone.**

**Hope you all become wonderful Human Beings.**