

Unit Eight Test Project

There are a lot of different objects that could be tallied. It would be good code reuse if we could come up with an interface and a class that would eliminate the need to include a tally method in each class where it would be appropriate.

Task 1: Set up a Dice class that implements the Measurable interface. It should have 3 instance fields: int die1, int die2, & String sum. The parametric constructor should receive two random integer values, between 1 & 6, to fill die1 and die2. It should also call a mutator method called setSum() which will add die1 and die2 and change their sum into a String. The class should also have an accessor method called getResult() that will return sum.

Task 2: Set up a Quiz class that implements the Measurable interface. It should have 2 instance fields: int score & String grade. The parametric constructor should receive a random integer value between 50 & 100, to fill score. It should also call a mutator method called setGrade() which will assign grade a letter grade based on the 90-80-70-60 scale. The class should also have an accessor method called getResult() that will return grade.

Task 3: Set up the Measurable interface with just one method, getResult().

Task 4: Set up the Tally class. It should have two instance fields: String[] item & int[] tally. The parametric constructor should receive an array of Strings containing all the possible outcomes. This array should be copied into item (check out the .clone() method) and all elements of tally should be set to zero. There should also be public void process(Measurable x) method. This method will getResult() from x and increment the appropriate element of tally. The class should also have an accessor method called getTally() that will return tally.

Task 5: Create the driver class. This class should process 100 Dice tosses and print to a JFrame the tally for each possible outcome "2" - "12". It should also process 100 Quiz scores and print to the JFrame the tally for each possible outcome "A" - "F". Your JFrame should look like the JFrame included with this assignment.

To complete this assignment, paste your JFrame into a Word document and turn it in with Measurable.java, Tally.java, Dice.java, Quiz.java, and u9test.java.