LAB MID

INTAKE: 49 SECTION: 9

MARKS: 4+5+6+5 = 20

1. Define a class called Fraction. This class is used to represent a ratio of two integers. Create two constructors, set, get and display function. Include an additional method equals, that takes as input another Fraction and returns true if the two fractions are identical and false if they are not.

2. Write a Java proram to create an abstract class named My_Stack with three abstract methods named getData(), push_data() and pop_data(). Create two classes IntegerStack and CharacterStack that implements the My_Stack class.

3. Create a class named Pizza that stores information about a single pizza. It should contain the following:

- Private instance variables to store the size of the pizza (either small, medium, or large),
- the number of cheese toppings, the number of pepperoni toppings, and the number of pineapple toppings.
- Constructor(s) that set all of the instance variables.
- Public methods to get and set the instance variables.
- A public method named calcCost() that returns a double that is the cost of the pizza.
  Pizza cost is determined by:
  Small: $10 + $2 per topping
  Medium: $12 + $2 per topping
  Large: $14 + $2 per topping
- public method named getDescription() that returns a String containing the pizza size, quantity of each topping.

Write test code to create several pizzas and output their descriptions. For example, a large pizza with one cheese, one pepperoni and two pineapple toppings should cost a total of $22. Now Create a PizzaOrder class that allows up to three pizzas to be saved in an order. Each pizza saved should be a Pizza object. Create a method calcTotal() that returns the cost of order.

4. Create an interface named Assignment which must have three methods getText(), setText(text), WordCount(text). Implement all of the functions in a class named Java_331. Your assignment must have exactly 500 words. In the main function, call all the functions.