

# Tutorial 4 I/O programming basic

## 1 Pre-requisites

You must have finished the previous Pizza demo tutorial exercises.

## 2 Instructions

In this tutorial, you will learn to apply basic Java's IO programming to the `PizzaDemo` application. In particular, you will use the console I/O to capture input and to print formatted report to the output. You will also use File I/O to store objects out on to a file.

1. Copy the content of `tutes.oop2b` package to another package named `tutes.io` and complete the following tasks.

Note: use the latest version of your `tutes.oop2b` package for this tutorial.

2. Implement constructor `PizzaDemo()` which initialises a new pizza order.
3. Implement method `PizzaDemo.getPizzas()` to capture the keyboard inputs from the user and to use these input to create new `Pizza` objects. This method should allow the user to create three different kinds of pizza and it must run repeatedly until the user presses 'X'.

You must use the input validation code in the previous tutorial to validate each input.

4. Implement method `PizzaDemo.printReceipt()` to print a receipt which looks like the one shown in Listing 1 below. Note that this method is invoked when the user presses 'X' at the pizza entry prompt and before the system shuts down. You do not need to implement the sorting feature of this program.
5. Implement method `PizzaDemo.shutdown()` to store the pizza objects in the order to a file named `pizzas.dat`, which is stored at the program's working directory.
6. Implement method `PizzaDemo.startUp()` to load the pizza objects from file.
7. Rewrite the `PizzaDemo.main` method to invoke the above methods in a logical order in order to run the program.

```
Starting up...
PizzaDemo.loaded ...4 objects
PIZZA DATA ENTRY
Enter pizza type ('X' to stop):
    [T]ropical
    [P]epperoni
    [C]heese
```

X

```
-----
                        PIZZA ORDER (sorted by name)
-----
Pizza                Size      Toppings
-----
HamAndCheesePizza    medium
                        cheese    2    @3.0
```

```

                                ham      3  @2.0
                                Cost:    $26.00
PepperoniPizza      large
                                cheese   3  @4.0
                                pepperoni 3  @5.0
                                Cost:    $43.00
PepperoniPizza      small
                                cheese   1  @2.0
                                pepperoni 2  @3.0
                                Cost:    $20.00
TropicalPizza       small
                                cheese   1  @2.0
                                ham        3  @2.0
                                pepperoni 2  @3.0
                                Cost:    $26.00

Total cost:                $115.00
-----
                        PIZZA ORDER (sorted by cost)
-----
Pizza      Size      Toppings
-----
PepperoniPizza      small
                                cheese   1  @2.0
                                pepperoni 2  @3.0
                                Cost:    $20.00
TropicalPizza       small
                                cheese   1  @2.0
                                ham        3  @2.0
                                pepperoni 2  @3.0
                                Cost:    $26.00
HamAndCheesePizza   medium
                                cheese   2  @3.0
                                ham        3  @2.0
                                Cost:    $26.00
PepperoniPizza      large
                                cheese   3  @4.0
                                pepperoni 3  @5.0
                                Cost:    $43.00

Total cost:                $115.00
-----
Shutting down...
PizzaDemo.shutdown ...stored 4 objects

```

*Listing 1: A sample program run showing the pizza order receipt*

### 3 Extra exercises

Exercise 2.10 (pg 92).