

King Saud University
College of Computer and Information Sciences
Department of Computer Science
CSC113 – Computer Programming II
Solution of the Mid Term 1 Exam – Fall 2012

Exercise 1

```
public class Product { ----- /4
    private String name;
    private double price;

    public Product(String name, double price) { ----- 2
        this.name = name;
        this.price = price;
    }

    public void display() { ----- 2
        System.out.println("Name = " + name + " - Price = "+price);
    }

    public double getPrice() {
        return price;
    }
}

public class Store { ----- /18
    private String name;
    private double rent;
    private Product arrProducts[]; ----- 1
    private int nbProducts; ----- 1

    public Store(String name, double rent, int size) {
        this.name = name;
        this.rent = rent;
        arrProducts = new Product[size]; ----- 1
        nbProducts = 0; ----- 1
    }

    public Store (Store s) {
        name = s.name; ----- 0.5
        rent = s.rent; ----- 0.5

        arrProducts = new Product[s.arrProducts.length]; ----- 0.5
        for (int i=0; i < s.nbProducts; i++ ) { ----- 0.5
            arrProducts[i] = s.arrProducts[i]; ----- 0.5
        }
        nbProducts = s.nbProducts; ----- 0.5
    }
}
```

```

public double getRent() { ----- 1
    return rent;
}

public boolean addProduct(Product p) {
    if (nbProducts < arrProducts.length) { ----- 1
        arrProducts[nbProducts] = p; ----- 1
        nbProducts++; ----- 1
        return true; ----- 0.5
    }
    return false; ----- 0.5
}

public void displayAllProducts() {
    int i;
    System.out.println("Store name =" + name + "-Store rent=" + rent);

    for (i = 0; i < nbProducts; i++) { ----- 1
        arrProducts[i].display(); ----- 1
    }
}

public void displayProducts(double p) { ----- 1
    int i;

    for (i = 0; i < nbProducts; i++) { ----- 1
        if (arrProducts[i].getPrice() == p) { ----- 1
            arrProducts[i].display(); ----- 1
        }
    }
}
}

```

```

public class Mall { ----- /13
    private String name;
    private Store arrStores[]; ----- 1
    private int nbStores; ----- 1

    public Mall(String name, int size) {
        this.name = name;
        arrStores = new Store[size]; ----- 1
        nbStores = 0; ----- 1
    }

    public boolean addStore(Store x) {
        if (nbStores < arrStores.length) { ----- 1
            arrStores[nbStores] = new Store(x); ----- 1
            nbStores++; ----- 1
            return true; ----- 0.5
        }
        return false; ----- 0.5
    }
}

```

```

public void displayAll() {
    int i;
    System.out.println("Mall name = " + name);
    for (i=0; i < nbStores ; i++) { ----- 1
        arrStores[i].displayAllProducts();----- 1
    }
}

public Store maxRent() {
    Store max = arrStores[0]; ----- 1
    int i;

    for (i = 1; i < nbStores; i ++) { ----- 1
        if (arrStores[i].getRent()> max.getRent()) { ----- 1
            max = arrStores[i]; ----- 1
        }
    }

    return max; ----- 1
}

```

```

public class Application { ----- /10

    public static void main(String[] args) {

        Store s1 = new Store ("Aldo", 125450.0, 2 ); ----- 1
        Product p1 = new Product("Boot", 250.0); ----- 0.5
        Product p2 = new Product("Slipper", 150.0); ----- 0.5

        s1.addProduct(p1); ----- 0.5
        s1.addProduct(p2); ----- 0.5

        Store s2 = new Store ("Adidas", 225000.0, 2 );----- 1
        Product p3 = new Product("T-Shirt", 150.0); ----- 0.5
        Product p4 = new Product("Hat", 50.0); ----- 0.5
        Product p5 = new Product("Basket Ball", 350.0); -----0.5

        S2.addProduct(p3); ----- 0.5
        S2.addProduct(p4); ----- 0.5
        S2.addProduct(p5); ----- 0.5

        Mall m = new Mall ("Panorama",15); ----- 1
        m.addStore(s1); ----- 0.5
        m.addStore(s2); ----- 0.5

        m.maxRent().displayAllProducts();----- 1
    }
}

```