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**Course:** CS1073

**Section:** FR03B

**Assignment number:** 2

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a)

Dog.java:

/\*\*

This class represents a dog.

@author Zohaib Khan 3740572

\*/

public class Dog {

/\*\*

The name of the dog.

\*/

private String name;

/\*\*

The age of the dog (in years).

\*/

private int age;

/\*\*

This method constructs a Dog object with the specified

name and age.

@param nameIn the name of the dog.

@param ageIn the age of the dog (in years).

\*/

public Dog (String nameIn, int ageIn) {

name = nameIn;

age = ageIn;

}

/\*\*

This method retrieves the name of the dog.

@return the name of the dog.

\*/

public String getName () {

return name;

}

/\*\*

This method retrieves the age of the dog.

@return the age of the dog (in years).

\*/

public int getAgeDogYears () {

return age;

}

/\*\*

This method computes and returns the dog's age in

"person years".

@return the age of the dog (in person years).

\*/

public int getAgePersonYears () {

return age \* 7;

}

/\*\*

This method is called to change the name of the dog.

@param nameIn the new name for the dog.

\*/

public void changeName (String nameIn) {

name = nameIn;

}

/\*\*

This method is called to increase the age of the dog

by one year.

\*/

public void addYear () {

age = age + 1;

}

} //end Dog

DogTestDriver.java:

/\*\*

This is a driver program for the dog class.

@author Zohaib Khan 3740572

\*/

public class DogTestDriver {

public static void main (String[] args){

// Creating 3 dog objects.

Dog dog1 = new Dog ("Tom", 3);

Dog dog2 = new Dog ("Duke", 5);

Dog dog3 = new Dog ("Max", 8);

// Changing the name of dog3.

dog3.changeName ("Milo");

// Adding a year to dog2's age.

dog2.addYear();

// Printing out each dog.

System.out.println ("Dog 1:\n"

+ "Name: " + dog1.getName()

+ "\nAge in dog years: " + dog1.getAgeDogYears()

+ "\nAge in person years: " + dog1.getAgePersonYears()

+ "\n");

System.out.println ("Dog 2:\n"

+ "Name: " + dog2.getName()

+ "\nAge in dog years: " + dog2.getAgeDogYears()

+ "\nAge in person years: " + dog2.getAgePersonYears()

+ "\n");

System.out.println ("Dog 3:\n"

+ "Name: " + dog3.getName()

+ "\nAge in dog years: " + dog3.getAgeDogYears()

+ "\nAge in person years: " + dog3.getAgePersonYears()

+ "\n");

}

} //end class

B)

ASQ1Output.txt:

Dog 1:

Name: Tom

Age in dog years: 3

Age in person years: 21

Dog 2:

Name: Duke

Age in dog years: 6

Age in person years: 42

Dog 3:

Name: Milo

Age in dog years: 8

Age in person years: 56

C)

FunZoneBadge.java:

/\*\*

This class represents a FunZoneBadge.

@author Zohaib Khan 3740572

\*/

public class FunZoneBadge {

/\*\*

The name of the badge holder.

\*/

private String name;

/\*\*

The badge number.

\*/

private int badgeNumber;

/\*\*

The total amount of charges that

have been added to the badge.

\*/

private double totalAmountOwed;

/\*\*

Constructor class to initialize the

instance variables.

@param nameIn the name of the badge holder.

@param badgeNumberIn the badge number.

\*/

public FunZoneBadge (String nameIn, int badgeNumberIn) {

name = nameIn;

badgeNumber = badgeNumberIn;

totalAmountOwed = 0.00; // It will be zero upon entry.

}

/\*\*

This method retrieves the name of the badge holder.

@return the name of the badge holder.

\*/

public String getName () {

return name;

}

/\*\*

This method retrieves the badge number.

@return the badge number.

\*/

public int getBadgeNumber () {

return badgeNumber;

}

/\*\*

This method returns the total amount owed.

@return the total amount owed.

\*/

public double getTotal () {

return totalAmountOwed;

}

/\*\*

Adding the price of the centre's offering.

@param priceIn the price of accessing an offering.

\*/

public void addAmount (double priceIn) {

totalAmountOwed = totalAmountOwed + priceIn;

}

/\*\*

Calculating and returning the amount to be donated.

@param percent the percentage to be donated.

@return the donation amount.

\*/

public double getDonation (double percent) {

return totalAmountOwed \* percent ;

}

} //end class

FunZoneDriver.java:

/\*\*

This is a driver program for the FunZoneBadge class.

@author Zohaib Khan 3740572

\*/

public class FunZoneDriver {

public static void main (String[] args){

// Creating a badge object for Ben.

FunZoneBadge bensBadge = new FunZoneBadge ("Ben Landry",

12341234);

// Charging Ben for laser tag.

bensBadge.addAmount(6.00);

// Creating a badge object for Maria.

FunZoneBadge mariasBadge = new FunZoneBadge ("Maria Lopez",

2468135);

// Charging Maria for trampoline park.

mariasBadge.addAmount(7.25);

// Creating a badge object for Karl.

FunZoneBadge karlsBadge = new FunZoneBadge ("Karl Wagner",

3451016);

// Charging Karl for Mandalorian pinball.

karlsBadge.addAmount(2.75);

// Creating a badge object for Lori.

FunZoneBadge lorisBadge = new FunZoneBadge ("Lori Evans",

5798642);

// Charging Lori for wall climbing.

lorisBadge.addAmount(12.50);

// Charging Lori for axe throwing.

lorisBadge.addAmount(18.75);

// Charging Maria for sundae bar.

mariasBadge.addAmount(6.50);

// Charging Ben and Karl for pool.

bensBadge.addAmount(9.50);

karlsBadge.addAmount(9.50);

// Printing out each badge holder.

System.out.println ("Badge holder 1:\n"

+ "Name: " + bensBadge.getName()

+ "\nBadge number: " + bensBadge.getBadgeNumber()

+ "\nTotal charges: " + bensBadge.getTotal()

+ "\nAmount donated: " + bensBadge.getDonation(0.18)

+ "\n");

System.out.println ("Badge holder 2:\n"

+ "Name: " + mariasBadge.getName()

+ "\nBadge number: " + mariasBadge.getBadgeNumber()

+ "\nTotal charges: " + mariasBadge.getTotal()

+ "\nAmount donated: " + mariasBadge.getDonation(0.12)

+ "\n");

System.out.println ("Badge holder 3:\n"

+ "Name: " + karlsBadge.getName()

+ "\nBadge number: " + karlsBadge.getBadgeNumber()

+ "\nTotal charges: " + karlsBadge.getTotal()

+ "\nAmount donated: " + karlsBadge.getDonation(0.20)

+ "\n");

System.out.println ("Badge holder 4:\n"

+ "Name: " + lorisBadge.getName()

+ "\nBadge number: " + lorisBadge.getBadgeNumber()

+ "\nTotal charges: " + lorisBadge.getTotal()

+ "\nAmount donated: " + lorisBadge.getDonation(0.20)

+ "\n");

}

} //end class

d)

AS2Q2Output.txt:

Badge holder 1:

Name: Ben Landry

Badge number: 12341234

Total charges: 15.5

Amount donated: 2.79

Badge holder 2:

Name: Maria Lopez

Badge number: 2468135

Total charges: 13.75

Amount donated: 1.65

Badge holder 3:

Name: Karl Wagner

Badge number: 3451016

Total charges: 12.25

Amount donated: 2.45

Badge holder 4:

Name: Lori Evans

Badge number: 5798642

Total charges: 31.25

Amount donated: 6.25