

**NSBM Green University**

Faculty of Computing

BSc (Hons) in Computer Science

**SE101.3**

**Object Oriented Programming with Java**

Module Lecturer: Mr. M Safraz

**Practical 7**

Student Name: BDDD SILVA

Student ID: 22787

Question 1

package datetest;

public class Date {

int month;

int day;

int year;

Date(int m, int d, int y){

this.day=d;

this.month=m;

this.year=y;

}

public void setDay(int d){

day=d;

}

public int getDay(){

return day;

}

public void setMonth(int m){

month=m;

}

public int getMonth(){

return month;

}

public void setYear(int y){

year=y;

}

public int getYear(){

return year;

}

public void display(){

System.out.println("%d/%d/%d", month,day,year);

}

}

package datetest;

public class DateTest {

public static void main(String[] args) {

Date d1=new Date(13,02,2022);

d1.display();

}

}

Question 2

package savingaccounttest;

public class Savingaccount {

public static float annualinterestrate;

private static float savingbalance;

static float newint;

String name;

void savingaccount(float anr, float sb,float newint, String name){

Savingaccount.annualinterestrate=anr;

Savingaccount.savingbalance=sb;

Savingaccount.newint=newint;

this.name=name;

}

public float calcmonthlyint(){

float monthly1=(float)(savingbalance\*annualinterestrate/12)+ savingbalance;

return monthly1;

}

static float modifyinterest(){

float monthly2=(float)(newint\*annualinterestrate/12)+savingbalance;

return monthly2;

}

void display(){

System.out.println(name+" 's Balance by the old interest: "+calcmonthlyint()+" Balance by new Interest:

"+modifyinterest());

System.out.println();

}}

package savingaccounttest;

public class SavingAccountTest {

public static void main(String[] args) {

Savingaccount saver1=new Savingaccount(2000.00,0.04,0.05,"saver1");

saver1.display();

Savingaccount saver2=new Savingaccount(3000.00,0.04,0.05,"saver2");

saver2.display();

}

}

Question 3

Q1.

//filename: Car.java

//Car class

public class Car {

private int speed;

private double regularPrice;

private String color;

public Car (int Speed,double regularPrice,String color) {

this.speed = Speed;

this.regularPrice = regularPrice;

this.color = color;

}

public double getSalePrice() {

return regularPrice;

}

}

Q2.

public class Truck extends Car {

private int weight;

public Truck (int Speed,double regularPrice,String color, int weight) {

super(Speed,regularPrice,color);

this.weight = weight;

}

public double getSalePrice() {

if (weight > 2000){

return super.getSalePrice() - (0.1 \* super.getSalePrice());

}

else {

return super.getSalePrice();

}

}

}

Q3.

public class Ford extends Car {

private int year;

private int manufacturerDiscount;

public Ford (int Speed,double regularPrice,String color, int year, int

manufacturerDiscount) {

super (Speed,regularPrice,color);

this.year = year;

this.manufacturerDiscount = manufacturerDiscount;

}

public double getSalePrice() {

return (super.getSalePrice() - manufacturerDiscount);

}

}

Q4.

public class Sedan extends Car {

private int length;

public Sedan (int Speed,double regularPrice,String color, int length) {

super (Speed,regularPrice,color);

this.length = length;

}

public double getSalePrice() {

if (length > 20) {

return super.getSalePrice() - (0.05 \* super.getSalePrice());

}

else {

return super.getSalePrice() - (0.1 \* super.getSalePrice());

}

}

}

Q5.

public class MyOwnAutoShop {

int Speed;

double regularPrice;

String color;

int year;

int manufacturerDiscount;

public static void main(String[] args) {

Sedan mySedan = new Sedan(160, 20000, "Red", 10);

Ford myFord1 = new Ford (156,4452.0,"Black",2005, 10);

Ford myFord2 = new Ford (155,5000.0,"Pink",1998, 5);

Car myCar - new Car (555, 56856.0, "Red");

System.out.printf("MySedan Price %.2f", mySedan.getSalePrice());

System.out.printf("MyFord1 Price %.2f", myFord1.getSalePrice());

System.out.printf("MyFord2 Price %.2f", myFord2.getSalePrice());

System.out.printf("MyCar Price %.2f", myCar.getSalePrice());

}

}

Question 4

Q1.

package shapes;

public class triangle extends shape {

public void draw(){

System.out.println("Draw the shape");

}

public void erase(){

System.out.println("Erase the shape");

}

}

package shapes;

public class circle extends shape {

public void draw(){

System.out.println("Draw the shape");

}

public void erase(){

System.out.println("Erase the shape");

}

}

package shapes;

public class square extends shape {

public void draw(){

System.out.println("Draw the shape");

}

public void erase(){

System.out.println("Erase the shape");

}

}

package shapes;

public class shape {

public void display(){

System.out.println("hello");

}

}

package shapes;

public class Shapes {

public static void main(String[] args) {

triangle t1= new triangle();

circle c1=new circle();

square s1=new square();

shape s2=new shape();

t1.display();

c1.draw();

}

}

Q2

// 22787

abstract class A

{

abstract void callme();

void callmetoo()

{

System.out.println (“hello .”);

}

}

class B extends A

{

void callme()

{

System.out.println ("implementation”);

}

}

class Abstract

{

public static void main (String args[])

{

B b = new B();

b.callme();

b.callmetoo();

}

}

Question 5

Q1

interface A

{

void meth1();

void meth2();

}

interface B extends A

{

void meth3();

}

//implementation

class MyClass implements B

{

public void meth1 ( )

{

System.out.println(“Implement meth1().”);

}

public void meth2()

{

System.out.println (“Implement meth2().”);

}

class IFExtend

{

public static void main(String arg[])

{

MyClass ob = new MyClass();

ob.meth1();

ob.meth2();

}

}

Q2

package inheritance;

public class Inheritance {

public static void main(String[] args) {

enheri c1=new enheri();

c1.study();

c1.go();

System.out.println(c1.age);

parent p1=new parent();

p1.sing();

node n1=new node();

n1.number();

}

}

package inheritance;

public class node extends parent {

int x=78;

void number(){

System.out.println("The number is "+x);

}

}

package inheritance;

public class parent {

protected int height;

protected int weight;

public void sing(){

System.out.println("Sing a song");

}

void go(){

System.out.println("They are going");

}

void study(){

System.out.println("I'm studying");

}

}

Q3

public interface Test

{

public int square(int a);

}

// Implementation

class arithmetic implements Test

{

int s = 0;

public int square(int b)

{

System.out.println(“Square of “ + “ is “+s);

return s;

}

}

// using the object

class ToTestInt

{

public static void main(String a[])

{

Test t = new arithmetic();

t.square(10);

}

}

Q4

class Outer{

String so = ("This is Outer Class");

void display()

{

System.out.println(so);

}

void test(){

Inner i = new Inner();

i.display();

}

class Inner{

String si =("This is inner Class");

void display(){

System.out.println(si);

}

}

}

class InnerClassDemo{

public static void main(String args[]){

Outer outer = new Outer();

outer.display();

outer.test();

}

Question 6

Q1

class NegTest

{

public static void main(String a[])

{

try

{

int a1[] = new int[-1];

System.out.println(“first element : “+a1[0]);

}

catch(NegativeArraySizeException n)

{

System.out.println(“ generated exception : “ + n);

}

}

}

Q5

class ThrowsException

{

public static void main(String a[]) throws ArithmeticException

{

System.out.println(“Inside main”);

int I = 0;

int j = 1223/I;

System.out.println(“this statement is not printed”);

}

}