SECTION 2.2 PROGRAMMING

PRACTICE

1.

CODE:

// JavaBank.java (with light blue company color)

import java.awt.Color;

import javax.swing.JButton;

import javax.swing.JFrame;

import javax.swing.JPanel;

class JavaBank

{

private final int R = 173;

private final int G = 216;

private final int B = 230;

public static final Color COMPANY\_COLOR = new Color(173, 216, 230);

public void createGUI() {

JFrame frame = new JFrame("JavaBank");

frame.setDefaultCloseOperation(JFrame.EXIT\_ON\_CLOSE);

JPanel panel = new JPanel();

panel.setBackground(COMPANY\_COLOR);

JButton button = new JButton("Submit");

button.setBackground(COMPANY\_COLOR);

panel.add(button);

frame.add(panel);

frame.setSize(300, 200);

frame.setVisible(true);

}

public static void main(String[] args) {

new JavaBank().createGUI();

}

}

interface BikeParts {

// Constant declaration

public final String MAKE = "Oracle Bikes";

// Required methods after implementation

public String getHandleBars();

public void setHandleBars(String newValue);

public String getTyres();

public void setTyres(String newValue);

public String getSeatType();

public void setSeatType(String newValue);

}

interface MountainParts {

// Constant declaration

public final String TERRAIN = "off\_road";

// Required methods

public String getSuspension();

public void setSuspension(String newValue);

public String getType();

public void setType(String newValue);

}

interface RoadParts {

// Constant declaration

public final String TERRAIN = "track\_racing";

// Required methods

public int getTyreWidth();

public void setTyreWidth(int newValue);

public int getPostHeigh();

public void setPostHeigh(int newValue);

}

class Bike implements BikeParts {

private String handleBars;

private String tyres;

private String seatType;

@Override

public String getHandleBars() {

return handleBars;

}

@Override

public void setHandleBars(String newValue) {

this.handleBars = newValue;

}

@Override

public String getTyres() {

return tyres;

}

@Override

public void setTyres(String newValue) {

this.tyres = newValue;

}

@Override

public String getSeatType() {

return seatType;

}

@Override

public void setSeatType(String newValue) {

this.seatType = newValue;

}

}

class MountainBike extends Bike implements MountainParts {

private String suspension;

private String type;

@Override

public String getSuspension() {

return suspension;

}

@Override

public void setSuspension(String newValue) {

this.suspension = newValue;

}

@Override

public String getType() {

return type;

}

@Override

public void setType(String newValue) {

this.type = newValue;

}

}

class RoadBike extends Bike implements RoadParts {

private int tyreWidth;

private int postHeight;

@Override

public int getTyreWidth() {

return tyreWidth;

}

@Override

public void setTyreWidth(int newValue) {

this.tyreWidth = newValue;

}

@Override

public int getPostHeigh() {

return postHeight;

}

@Override

public void setPostHeigh(int newValue) {

this.postHeight = newValue;

}

// Constructor to set default values

public RoadBike() {

this.setHandleBars("drop");

this.setSeatType("racing");

this.setTyres("tread less");

this.setTyreWidth(19);

this.setPostHeigh(20);

}

}

public class BikeProject {

public static void main(String[] args) {

// Creating an instance of MountainBike

MountainBike mountainBike = new MountainBike();

mountainBike.setHandleBars("Wide Handlebars");

mountainBike.setTyres("Knobby Tires");

mountainBike.setSeatType("Comfortable Seat");

mountainBike.setSuspension("Full Suspension");

mountainBike.setType("Downhill");

// Displaying MountainBike details

System.out.println("Mountain Bike:");

System.out.println("Handlebars: " + mountainBike.getHandleBars());

System.out.println("Tyres: " + mountainBike.getTyres());

System.out.println("Seat Type: " + mountainBike.getSeatType());

System.out.println("Suspension: " + mountainBike.getSuspension());

System.out.println("Type: " + mountainBike.getType());

// Creating an instance of RoadBike

RoadBike roadBike = new RoadBike();

// Displaying RoadBike details

System.out.println("\nRoad Bike:");

System.out.println("Handlebars: " + roadBike.getHandleBars());

System.out.println("Tyres: " + roadBike.getTyres());

System.out.println("Seat Type: " + roadBike.getSeatType());

System.out.println("Tyre Width: " + roadBike.getTyreWidth());

System.out.println("Post Height: " + roadBike.getPostHeigh());

}

}

OUTPUT:

