**PRACTICE 2:**

**Problem 1: Simple ASCII Art**

**package** practice2p1;

**public** **class** MYASCIIART {

**public** **static** **void** main(String[] args) {

System.***out***.println("########");

System.***out***.println("# ## #");

System.***out***.println("# ## #");

System.***out***.println("########");

System.***out***.println(" #### ");

System.***out***.println(" #### ");

System.***out***.println(" #### ");

System.***out***.println(" #### ");

}

}

**Problem 2: Original ASCII Art**

**package** practice2p2;

**public** **class** CardBoardBox {

**private** String size;

**private** String material;

**private** String content;

**public** CardBoardBox(String size, String material, String content) {

**this**.size = size;

**this**.material = material;

**this**.content = content;

}

**public** **void** shipBox() {

System.***out***.println("Box is being shipped.");

}

**public** **void** openBox() {

System.***out***.println("Box is being opened.");

}

**public** **void** packContent() {

System.***out***.println("Content is being packed into the box.");

}

}

**public** **class** Snake {

**private** String species;

**private** **int** length;

**private** String color;

**public** Snake(String species, **int** length, String color) {

**this**.species = species;

**this**.length = length;

**this**.color = color;

}

**public** **void** slither() {

System.***out***.println("Snake is slithering.");

}

**public** **void** shedSkin() {

System.***out***.println("Snake is shedding its skin.");

}

**public** **void** hiss() {

System.***out***.println("Snake is hissing.");

}

}

**public** **class** customer {

**private** String name;

**private** String address;

**private** String email;

**public** Customer(String name, String address, String email) {

**this**.name = name;

**this**.address = address;

**this**.email = email;

}

**public** **void** placeOrder() {

System.***out***.println("Customer is placing an order.");

}

**public** **void** receiveDelivery() {

System.***out***.println("Customer is receiving the delivery.");

}

**public** **void** provideFeedback() {

System.***out***.println("Customer is providing feedback.");

}

}

**PRACTICE 3**

**Creating a JavaLibs Game**

**package** practice3;

**public** **class** JavaLibsGame {

**public** **static** **void** main(String[] args) {

String name = JOptionPane.showInputDialog("Enter a name:");

**int** age = Integer.*parseInt*(JOptionPane.showInputDialog("Enter an age:"));

**double** weight = Double.*parseDouble*(JOptionPane.showInputDialog("Enter a weight:"));

JOptionPane.showMessageDialog(**null**, "Once upon a time, there was a person named " + name + ". " +

"At the age of " + age + ", they weighed " + weight + " pounds. " +

"One day, " + name + " found a magic lamp and rubbed it. " +

"A genie appeared and granted them " + (age \* 2) + " wishes. " +

"Excited, " + name + " wished for " + (weight / 2) + " pounds of chocolate. " +

"The end.");

}

}

**PRACTICE 4:**

**PROBLEM 2:**

package practice4p2;

import java.util.Scanner;

public class ProcessName {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.*in*);

System.*out*.print("Type your name: ");

String fullName = scanner.nextLine();

String[] names = fullName.split(" ");

String lastName = names[names.length - 1];

String firstNameInitial = names[0].substring(0, 1);

System.*out*.println("Your name is: " + lastName + ", " + firstNameInitial + ".");

}

}

**PRACTICE 5:**

**PROBLEM 1:**

**package** practice5p1;

**import** java.util.Scanner;

**public** **class** ColorRange {

**public** **static** **void** main(String[] args) {

Scanner scanner = **new** Scanner(System.***in***);

System.***out***.println("Enter a color code");

**double** wavelength = scanner.nextDouble();

**if** (wavelength >= 380 && wavelength < 450) {

System.***out***.println("The color is Violet");

} **else** **if** (wavelength >= 450 && wavelength < 495) {

System.***out***.println("The color is Blue");

} **else** **if** (wavelength >= 495 && wavelength < 570) {

System.***out***.println("The color is Green");

} **else** **if** (wavelength >= 570 && wavelength < 590) {

System.***out***.println("The color is Yellow");

} **else** **if** (wavelength >= 590 && wavelength < 620) {

System.***out***.println("The color is Orange");

} **else** **if** (wavelength >= 620 && wavelength <= 750) {

System.***out***.println("The color is Red");

} **else** {

System.***out***.println("The entered wavelength is not a part of the visible spectrum");

}

}

}

**PROBLEM2:**

**package** practice5p2;

**import** java.util.Scanner;

**public** **class** TrafficLightChecker {

**public** **static** **void** main(String[] args) {

Scanner scanner = **new** Scanner(System.***in***);

System.***out***.println("Enter a color code:");

**int** currentColor = scanner.nextInt();

**if** (currentColor == 1) {

System.***out***.println("Next Traffic Light is Green");

} **else** **if** (currentColor == 2) {

System.***out***.println("Next Traffic Light is Yellow");

} **else** **if** (currentColor == 3) {

System.***out***.println("Next Traffic Light is Red");

} **else** {

System.***out***.println("Invalid color");

}

}

}

**PROBLEM 3:**

**package** practice5p3;

**public** **class** TrafficLightSwitch {

**public** **static** **void** main(String[] args) {

String currentColor = "red";

**switch** (currentColor) {

**case** "red":

System.***out***.println("Stop! The light is red.");

**break**;

**case** "yellow":

System.***out***.println("Prepare to stop. The light is yellow.");

**break**;

**case** "green":

System.***out***.println("Go! The light is green.");

**break**;

**default**:

System.***out***.println("Invalid color entered.");

}

}

}

**PRACTICE 6:**

**PROBLEM 1:**

**package** practice6p1;

**public** **class** ValidatePin {

**public** **static** **void** main(String[] args) {

**int** validPin = 1234;

**int** enteredPin = 0;

java.util.Scanner input = **new** java.util.Scanner(System.***in***);

**while** (enteredPin != validPin) {

System.***out***.print("Enter your PIN: ");

enteredPin = input.nextInt();

**if** (enteredPin != validPin) {

System.***out***.println("Invalid PIN. Please try again.");

}

}

System.***out***.println("Correct PIN entered. Access granted to your account.");

input.close();

}

}

}

**PROBLEM 2:**

**package** practice6p2;

**import** java.util.Scanner;

**public** **class** DisplayMultiples {

**public** **static** **void** main(String[] args) {

Scanner input = **new** Scanner(System.***in***);

System.***out***.print("Choose a number: ");

**int** number = input.nextInt();

**for** (**int** i = 1; i <= 12; i++) {

System.***out***.println(number + "x" + i + " = " + (number \* i));

}

input.close();

}

}

**PROBLEM 3:**

**package** practice6p3;

**public** **class** LoopShape {

**public** **static** **void** createRectangle(**int** width, **int** height) {

**if** (width < 1 || height < 1) {

System.***out***.println("Dimensions must be greater than or equal to 1.");

**return**;

}

**for** (**int** i = 0; i < height; i++) {

**for** (**int** j = 0; j < width; j++) {

System.***out***.print("#");

}

System.***out***.println();

}

}

**public** **static** **void** createTriangle(**int** size) {

**if** (size < 1) {

System.***out***.println("Size must be greater than or equal to 1.");

**return**;

}

**for** (**int** i = 1; i <= size; i++) {

**for** (**int** j = 1; j <= i; j++) {

System.***out***.print("#");

}

System.***out***.println();

}

}

**public** **static** **void** main(String[] args) {

*createRectangle*(5, 4);

System.***out***.println();

*createTriangle*(5);

}

}

**PRACTICE 7:**

**package** practice7;

**public** **class** DateNight {

**public** **static** **void** main(String[] args) {

System.***out***.println("Welcome to Date Night at the Arcade!");

System.***out***.println("Let's have some fun together!");

}

}

**PRACTICE 8:**

**package** practice8;

**public** **class** SoccerLeague {

**public** **static** **void** main(String[] args) {

List<String> teams = **new** ArrayList<>();

teams.add("Team A");

teams.add("Team B");

teams.add("Team C");

teams.add("Team D");

System.***out***.println("Teams in the Soccer League:");

**for** (String team : teams) {

System.***out***.println(team);

}

}

}

**PRACTICE 9:**

**package** practice9;

**public** **class** CentralLocationFinder {

**public** **static** **double**[] findCentroid(**double**[][] locations) {

**double** sumX = 0;

**double** sumY = 0;

**int** numberOfLocations = locations.length;

**for** (**double**[] location : locations) {

sumX += location[0];

sumY += location[1];

}

**double** centroidX = sumX / numberOfLocations;

**double** centroidY = sumY / numberOfLocations;

**return** **new** **double**[]{centroidX, centroidY};

}

**public** **static** **void** main(String[] args) {

**double**[][] dormLocations = {

{1, 3},

{2, 5},

{3, 7},

{4, 2},

{5, 8}

};

**double**[] centralLocation = *findCentroid*(dormLocations);

System.***out***.println("Central Location: (" + centralLocation[0] + ", " + centralLocation[1] + ")");

}

}