**package** assignment.exercise;

**import** java.util.Scanner;

**public** **class** Program1 {

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

String type;

**int** units = 0;

**int** billAmount;

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

System.***out***.println("Enter the type(House / Commerical) : ");

type = input.next();

**boolean** validType = type.equalsIgnoreCase("House") || type.equalsIgnoreCase("Commercial");

**while** (!validType) {

System.***out***.println("Enter valid type : ");

type = input.next();

validType = type.equalsIgnoreCase("House") || type.equalsIgnoreCase("Commercial");

}

System.***out***.println("Enter no of units used : ");

units = input.nextInt();

**while** (units < 0 || units > 200) {

System.***out***.println("Enter value between 0 and 200: ");

units = input.nextInt();

}

input.close();

**if** (type.equalsIgnoreCase("House")) {

**if** (units < 100) {

billAmount = units \* 3;

} **else** {

billAmount = units \* 4;

}

} **else** {

**if** (units < 100) {

billAmount = units \* 10;

} **else** {

billAmount = units \* 20;

}

}

System.***out***.println("Final Bill is : " + billAmount);

}

}

**package** assignment.exercise;

**import** java.util.Scanner;

**public** **class** Program2 {

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

String item;

**int** noOfPlates = 0;

**int** billAmount = 0;

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

System.***out***.println("Enter item you want to buy (Dosa / idli / Pongal) : ");

item = input.next();

**boolean** validItem = item.equalsIgnoreCase("Dosa") || item.equalsIgnoreCase("idli")

|| item.equalsIgnoreCase("Pongal");

**while** (!validItem) {

System.***out***.println("Enter valid item : ");

item = input.next();

validItem = item.equalsIgnoreCase("Dosa") || item.equalsIgnoreCase("idli")

|| item.equalsIgnoreCase("Pongal");

}

System.***out***.println("Enter no of plates : ");

noOfPlates = input.nextInt();

**while** (noOfPlates < 0) {

System.***out***.println("Enter postive value: ");

noOfPlates = input.nextInt();

}

input.close();

**switch** (item.toUpperCase()) {

**case** "DOSA":

billAmount = noOfPlates \* 20;

**break**;

**case** "IDLI":

billAmount = noOfPlates \* 10;

**break**;

**case** "PONGAL":

billAmount = noOfPlates \* 30;

**break**;

**default**:

// Code will never come here

}

System.***out***.println("Final Bill is : " + billAmount);

}

}

**package** assignment.exercise;

**import** java.util.Scanner;

**public** **class** Program3 {

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

**int** monthNumber;

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

System.***out***.println("Enter the month number (1-12) : ");

monthNumber = input.nextInt();

**while** (monthNumber < 1 || monthNumber > 12) {

System.***out***.println("Enter valid month number : ");

monthNumber = input.nextInt();

}

input.close();

**switch** (monthNumber) {

**case** 1:

**case** 2:

**case** 3:

**case** 4:

System.***out***.println("It is Summer season !!");

**break**;

**case** 5:

**case** 6:

**case** 7:

**case** 8:

System.***out***.println("It is Winter season !!");

**break**;

**case** 9:

**case** 10:

**case** 11:

**case** 12:

System.***out***.println("It is Rainy season !!");

**break**;

**default**:

// Code will never come here

}

}

}

**package** assignment.exercise;

**import** java.util.Scanner;

**public** **class** Program4 {

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

**int** numberToCheck;

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

System.***out***.println("Enter the number you want to check for prime : ");

numberToCheck = input.nextInt();

**while** (numberToCheck < 0) {

System.***out***.println("Enter positive number : ");

numberToCheck = input.nextInt();

}

input.close();

**if** (numberToCheck == 0 || numberToCheck == 1) {

System.***out***.println(numberToCheck + " is not prime number");

} **else** {

**boolean** flag = **false**;

**int** m = numberToCheck / 2;

**for** (**int** i = 2; i <= m; i++) {

**if** (numberToCheck % i == 0) {

System.***out***.println(numberToCheck + " is not prime number");

flag = **true**;

**break**;

}

}

**if** (flag) {

System.***out***.println(numberToCheck + " is prime number");

}

} // end of else

}

}

**package** assignment.exercise;

**public** **class** Program5 {

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

**int** num = 10, sum = 0, multiply = 1;

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

sum = sum + i;

}

System.***out***.println("Sum of first 10 numbers is: " + sum);

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

multiply = multiply \* i;

}

System.***out***.println("Multiplication of first 10 numbers is: " + multiply);

}

}

**package** assignment.exercise;

**import** java.util.stream.IntStream;

**public** **class** Program6 {

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

**int**[] a = { 10, 5, 5, 10, 20, 30 };

**int** sum = IntStream.*of*(a).sum();

System.***out***.println("Sum of numbers in the array is: " + sum);

**int** multiply = 1;

**for** (**int** num : a) {

multiply = multiply \* num;

}

System.***out***.println("Multiplication of numbers in the array is: " + multiply);

}

}

**package** assignment.exercise;

**public** **class** Program7 {

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

**int**[] a = { 10, 5, 5, 10, 20, 30 };

StringBuilder even = **new** StringBuilder();

StringBuilder odd = **new** StringBuilder();

**for** (**int** num : a) {

**if** (num % 2 == 0) {

even.append(num).append(",");

} **else** {

odd.append(num).append(",");

}

}

**if** (even.toString().isEmpty()) {

System.***out***.println("There are no even numbers");

} **else** {

System.***out***.println("Even numbers are : " + even.toString().substring(0, even.length() - 1));

}

**if** (odd.toString().isEmpty()) {

System.***out***.println("There are no odd numbers");

} **else** {

System.***out***.println("Odd numbers are : " + odd.toString().substring(0, odd.length() - 1));

}

}

}

**package** assignment.exercise;

**public** **class** Program8 {

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

**int**[] a = { 10, 5, 5, 10, 20, 30, 60, 60, 60 };

**int** duplicateCount = 0;

**int** j = 0, count, recount, temp;

**for** (**int** i = 0; i < a.length; i++) {

count = 0;

recount = 0;

j = i + 1;

**while** (j < a.length) {

**if** (a[i] == a[j])

count++;

j++;

}

**if** (count > 0) {

temp = a[i];

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

**if** (a[x] == temp)

recount++;

}

**if** (recount == 0) {

duplicateCount++;

System.***out***.println(+a[i] + " : " + count + " times");

}

}

}

System.***out***.println("Total number of duplicates: " + duplicateCount);

}

}