import 'dart:io';

void main() {

  /\*

  Q.1: Create two integer variables length and breadth and assign values then

  check if they are square values or rectangle values.

  ie: if both values are equal then it's square otherwise rectangle.

  \*/

  //Answer:

  print("ANSWER OF QUESTION 01");

  int? length = 10, breath = 20;

  if (length == breath) {

    print("$length X $breath it's Square");

  } else {

    print("$length X $breath it's Rectangle");

  }

  /\*OUTPUT

  ANSWER OF QUESTION 01

  10 X 20 it's Rectangle

  Q.2: Take two variables and store age then using if/else condition to determine

  oldest and youngest among them.

  \*/

  //Answer:

  print("ANSWER OF QUESTION 02");

  int? age1 = 23, age2 = 33;

  if (age1 < age2) {

    print("age1 $age1 is youngest and age2 $age2 oldest");

  } else if (age1 > age2) {

    print("age $age1 is oldest and age2 $age2 youngest");

  }

  /\*

  OUTPUT

  ANSWER OF QUESTION 02

  age1 23 is youngest and age2 33 oldest

  Q.3: A student will not be allowed to sit in exam if his/her attendance is less

  than 75%. Create integer variables and assign value:

  Number of classes held = 16,

  Number of classes attended = 10,

  and print percentage of class attended.

  Is student is allowed to sit in exam or not?

  \*/

  //Answer:

  print("ANSWER OF QUESTION 03");

  int? classesHeld = 16, classesAttended = 10;

  double percentage = (100 \* classesAttended) / classesHeld;

  if (percentage < 75) {

    print(

        'Student with percentage $percentage is not allowed to sit in the class');

  } else {

    print('Student with percentage $percentage is allowed to sit in the class');

  }

  /\*

  OUTPUT

  ANSWER OF QUESTION 03

  Student with percentage 62.5 is not allowed to sit in the class

  Q4: Write a program to convert Celsius to Fahrenheit .

  i.e: Temperature in degrees Fahrenheit (°F) = (Temperature in degrees Celsius

  (°C) \* 9/5) + 32

  \*/

  //Answer:

  print("ANSWER OF QUESTION 04");

  double? tempInCelsius = 37.0;

  double? temInFahrenheit =

      ((tempInCelsius \* (9.0 / 5.0)) + 32.0).roundToDouble();

  print("$tempInCelsius Celsius is equavlent to $temInFahrenheit Fahrenteit");

  /\*

  OUTPUT

  ANSWER OF QUESTION 04

  37.0 Celsius is equavlent to 99.0 Fahrenteit

  Q.5 Write a program to read temperature in centigrade and display a suitable

  message according to temperature:

  You have num variable temperature = 42;

  Now print the message according to temperature:

  temp < 0 then Freezing weather

  temp 0-10 then Very Cold weather

  temp 10-20 then Cold weather

  temp 20-30 then Normal in Temp

  temp 30-40 then Its Hot

  temp >=40 then Its Very Hot

  \*/

  //Answer:

  print("ANSWER OF QUESTION 05");

  int? temperature;

  print("Enter Temperature Value: ");

  temperature = int.parse(stdin.readLineSync()!);

  if (temperature < 0) {

    print("Freezing weather");

  } else if (temperature >= 0 && temperature < 10) {

    print("Very Cold weather");

  } else if (temperature >= 10 && temperature < 20) {

    print("Cold weather");

  } else if (temperature >= 20 && temperature < 30) {

    print("Normal in Temp");

  } else if (temperature >= 30 && temperature < 40) {

    print("Its Hot");

  } else if (temperature >= 40) {

    print("Its Very Hot");

  }

  /\*

  OUTPUT

  ANSWER OF QUESTION 05

  Enter Temperature Value:

  34

  Its Hot

  Q.6: Write a program to check whether an alphabet is a vowel or consonant.

  \*/

  print("ANSWER OF QUESTION 06");

  List<String> vowels = ['a', 'e', 'i', 'o', 'u'];

  String? alphabet;

  print("Enter Alphabet: ");

  alphabet = stdin.readLineSync()!;

  alphabet = alphabet[0];

  if (vowels.contains(alphabet)) {

    print("$alphabet is vowel");

  } else {

    print("$alphabet is consonant");

  }

  /\*

  OUTPUT

  ANSWER OF QUESTION 06

  Enter Alphabet:

  e

  e is vowel

  Q7: Create a marksheet using operators of at least 5 subjects and output

  should have Student Name, Student Roll Number, Class, Percentage, Grade

  Obtained etc.

  i.e: Percentage should be rounded upto 2 decimal places only.

  \*/

  //Answer

  print("ANSWER OF QUESTION 07");

  num? subject1 = 80,

      subject2 = 90,

      subject3 = 70,

      subject4 = 75,

      subject5 = 85,

      studentPercentage =

          ((subject1 + subject2 + subject3 + subject4 + subject5) \* 100) / 500;

  if (studentPercentage >= 90) {

    print(

        "Example Student having Rollno 20300 in Class 10th got $studentPercentage%Percentage and Grade A");

  } else if (studentPercentage >= 80 && studentPercentage < 90) {

    print(

        "Example Student having Rollno 20300 in Class 10th got $studentPercentage%Percentage and Grade B");

  } else if (studentPercentage >= 70 && studentPercentage < 80) {

    print(

        "Example Student having Rollno 20300 in Class 10th got $studentPercentage%Percentage and Grade C");

  } else if (studentPercentage >= 60 && studentPercentage < 70) {

    print(

        "Example Student having Rollno 20300 in Class 10th got $studentPercentage%Percentage and Grade D");

  } else if (studentPercentage < 60) {

    print(

        "Example Student having Rollno 20300 in Class 10th got $studentPercentage%Percentage and Grade B");

  }

  /\*

  OUTPUT

  ANSWER OF QUESTION 07

  Example Student having Rollno 20300 in Class 10th got 80.0%Percentage and Grade B

  Q8: Check if the number is even or odd?

  i.e : Even numbers are completely divisible by 2. (2,4,6,8,10,....)

  \*/

  //Answer

  print("ANSWER OF QUESTION 08");

  print("Enter Number Value to Chect it Either Odd or Even: ");

  num? number = num.parse(stdin.readLineSync()!);

  if (number % 2 != 0) {

    print("$number is Odd");

  } else {

    print("$number is Even");

  }

  /\*

  OUTPUT

  ANSWER OF QUESTION 08

  Enter Number Value to Chect it Either Odd or Even:

  56

  56 is Even

  Q9: Check if a number is even then check if its divisible by 5 or not & if a

  number is odd then check if its divisible by 7 or not.

  \*/

  //Answer:

  print("ANSWER OF QUESTION 09");

  print(

      "Enter Number Value to Chect it Either Odd and divisible by 7 or Even and divisible by 5: ");

  num? number1 = num.parse(stdin.readLineSync()!);

  if (number1 % 2 != 0) {

    if (number1 % 7 == 0) {

      print("$number1 is Odd and divisible by 7");

    } else {

      print("$number1 is Odd and not divisible by 7");

    }

  } else {

    if (number1 % 5 == 0) {

      print("$number1 is Even and divisible by 5");

    } else {

      print("$number1 is Even and not divisible by 5");

    }

  }

  /\*

  OUTPUT

  ANSWER OF QUESTION 09

  Enter Number Value to Chect it Either Odd and divisible by 7 or Even and divisible by 5:

  77

  77 is Odd and divisible by 7

  Q10: Write a program that takes three numbers from the user and prints the

  greatest number & lowest number.

  \*/

  //Answer:

  print("ANSWER OF QUESTION 10");

  List<num> allNumbers = [];

  print("Enter User Number 1: ");

  allNumbers.add(num.parse(stdin.readLineSync()!));

  print("Enter User Number 2: ");

  allNumbers.add(num.parse(stdin.readLineSync()!));

  print("Enter User Number 3: ");

  allNumbers.add(num.parse(stdin.readLineSync()!));

  allNumbers.sort();

  print("All Values $allNumbers");

  print("Greatest Value is:");

  print(allNumbers[allNumbers.length - 1]);

  print("Lowest Value is:");

  print(allNumbers[0]);

}

/\*

OUTPUT

ANSWER OF QUESTION 10

Enter User Number 1:

22

Enter User Number 2:

9

Enter User Number 3:

58

All Values [9, 22, 58]

Greatest Value is:

58

Lowest Value is:

9

\*/