ASSIGNMENT 01

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.

```
// Question No. 1

  try {
    stdout.write("Please Enter Length Value. ");
    num length = num.parse(stdin.readLineSync()!);
    stdout.write("Please Enter Width Value. ");
    num width = num.parse(stdin.readLineSync()!);
    if (length == width) {
      print("It is Square.");
    } else {
      print("It is Rectangle.");
    }
  } catch (e) {
    print("Please Enter a Valid Number!");
  }
```

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

```
// Question No. 2

  try {
    stdout.write("Please Enter Your Age Ali. ");
    int aliAge = int.parse(stdin.readLineSync()!);
    stdout.write("Please Enter Your Age Saif. ");
    int saifAge = int.parse(stdin.readLineSync()!);
    if (aliAge > saifAge) {
      print("Ali is older than Saif.");
    } else {
      print("Saif is older than Ali.");
    }
  } catch (e) {
    print("Please Enter a valid Age!");
  }
```

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?

```
// Question No. 3

int classHeld = 16;
int classAttend = 10;
num percentage = (classAttend * 100) / classHeld;
if (percentage > 75) {
  print("You are allowed in Exam. Your Percentage is $percentage");
} else {
  print( "You are Not Allowed in Exam Because Your Percentage is $percentage.");
}
```

Q4: Write a program to convert Celsius to Fahrenheit .
i.e: Temperature in degrees Fahrenheit (°F) = (Temperature in degrees Celsius (°C) * 9/5) + 32

```
// Question No. 4

try {
  stdout.write("Please Enter Temperature in Celsius. ");
  num celsiusTemp = num.parse(stdin.readLineSync()!);
  num fahrenheitTemp = (celsiusTemp * (9 / 5)) + 32;
  num roundedTemp = num.parse(fahrenheitTemp.toStringAsFixed(3));
  print("Temperature in Fahrenheit is $roundedTemp F.");
} catch (e) {
  print("Please Enter Correct Temperature!");
}
```

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

```
// Question No. 5

  try {
    stdout.write("Please Enter Your Room Temperature. "
);  num roomTemp = num.parse(stdin.readLineSync()!);
    if (roomTemp <= 0) {
      print("Freezing Weather!");
    } else if (roomTemp > 0 && roomTemp <= 10) {
      print("Very Cold Weather!");
    } else if (roomTemp > 10 && roomTemp <= 20) {
      print("Cold Weather!");
    } else if (roomTemp > 20 && roomTemp <= 30) {
      print("Beautiful Weather!");
    } else if (roomTemp > 30 && roomTemp <= 40) {
      print("Hot Weather!");
    } else {
      print("Very Hot Weather");
    }
  } catch (e) {
    print("Please Enter Correct Temperature!");
  }
```

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

```dart
// Question No. 6

  try {
    stdout.write("Please Enter One Alphabet: ");
    String letter = stdin.readLineSync()!;
    if (letter.length == 1 && letter.isNotEmpty) {
      String alphabet = letter.toLowerCase();
      if (alphabet == "a" ||
          alphabet == "e" ||
          alphabet == "i" ||
          alphabet == "o" ||
          alphabet == "u") {
        print("This Alphabet is Vowel.");
      } else {
        print("This Alphabet is Consonant.");
      }
    } else {
      print("Please Enter only one Alphabet!");
    }
  } catch (e) {
    print("Please Enter a Valid and One Alphabat Only!");
  }
```

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.

```
// Question No. 7

  try {
    stdout.write("Please Enter Your Name: ");
    String studentName = stdin.readLineSync()!;
    stdout.write("Please Enter Your Roll No: ");
    String studentRollNo = stdin.readLineSync()!;
    stdout.write("Please Enter Your Class: ");
    String studentClass = stdin.readLineSync()!;
    int totalMarks = 500;
    stdout.write("Please Enter Your English Marks: ");
    int englishMarks = int.parse(stdin.readLineSync()!);
    stdout.write("Please Enter Your Urdu Marks: ");
    int urduMarks = int.parse(stdin.readLineSync()!);
    stdout.write("Please Enter Your Islamiyat Marks: ");
    int islamiyatMarks = int.parse(stdin.readLineSync()!);
    stdout.write("Please Enter Your Math Marks: ");
    int mathMarks = int.parse(stdin.readLineSync()!);
    stdout.write("Please Enter Your Computer Marks: ");
    int computerMarks = int.parse(stdin.readLineSync()!);
    int marksobtained =
        englishMarks + urduMarks + islamiyatMarks + mathMarks + computerMarks;
    num percentage = (marksobtained / totalMarks) * 100;
    print("---------------------- Marksheet ----------------------");
    print("Student Name:           $studentName");
    print("Student Roll No:        $studentRollNo");
    print("Student Class:          $studentClass");
    if (percentage <= 100 && marksobtained <= 500) {
      print("Student Obtained Marks: $marksobtained/$totalMarks");
      print("Percentage:             $percentage");
    } else {
      print("Please Enter Correct Marks!");
    }
    if (percentage >= 33 && percentage <= 40) {
      print("Grade:                  E");
    } else if (percentage > 40 && percentage <= 50) {
      print("Grade:                  D");
    } else if (percentage > 50 && percentage <= 60) {
      print("Grade:                  C");
    } else if (percentage > 60 && percentage <= 70) {
      print("Grade:                  B");
    } else if (percentage > 70 && percentage <= 80) {
      print("Grade:                  B+");
    } else if (percentage > 80 && percentage <= 90) {
      print("Grade:                  A");
    } else if (percentage > 90 && percentage <= 100) {
      print("Grade:                  A+");
    } else if (percentage > 100) {
      print("Please Enter Correct Marks!");
    } else {
      print("You are Fail!");
    }
  } catch (e) {
    print("Please Enter Correct Values!");
  }
```

Q8: Check if the number is even or odd?
i.e : Even numbers are completely divisible by 2. (2,4,6,8,10,....)

```
// Question No. 8

try {
  stdout.write("Please Enter a Number: ");
  int number = int.parse(stdin.readLineSync()!);
  if (number % 2 == 0) {
    print("Even Number!");
  } else {
    print("Odd Number!");
  }
} catch (e) {
  print("Please Enter a Valid Number!");
}
```

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.

```
// Question No. 9

try {
  stdout.write("Please Enter a Number: ");
  int number = int.parse(stdin.readLineSync()!);
  if (number % 2 == 0) {
    if (number % 5 == 0) {
      print("The Given Number is Even Number and also divisible by 5.");
    } else {
      print("The Given Number is Even Number but cannot be divisible by 5."
);  }
  } else {
    if (number % 7 == 0) {
      print("The Given Number is Odd Number and also divisible by 7.");
    } else {
      print("The Given Number is Odd Number but cannot be divisible by 7.");
    }
  }
} catch (e) {
  print("Please Enter a Valid Number!");
}
```

Q10: Write a program that takes three numbers from the user and prints the greatest number & lowest number.

```
// Question No. 10

try {
  stdout.write("Please Enter Number 1: ");
  int num1 = int.parse(stdin.readLineSync()!);
  stdout.write("Please Enter Number 2: ");
  int num2 = int.parse(stdin.readLineSync()!);
  stdout.write("Please Enter Number 3: ");
  int num3 = int.parse(stdin.readLineSync()!);
  if (num1 > num2 && num1 > num3) {
    print("$num1 is the Greatest Number.");
  } else if (num2 > num1 && num2 > num3) {
    print("$num2 is the Greatest Number.");
  } else {
    print("$num3 is the  Greatest Number.");
  }
  if (num1 < num2 && num1 < num3) {
    print("$num1 is the Lowest Number.");
  } else if (num2 < num1 && num2 < num3) {
    print("$num2 is the Lowest Number.");
  } else {
    print("$num3 is the Lowest Number.");
  }
} catch (e) {
  print("Please Enter Valid Numbers!");
}
```