Java:

1)Create an array with the values (1, 2, 3, 4, 5, 6, 7) and shuffle it.

```
import java.util.Arrays;
import java.util.List;
import java.util.Collections;

public class ShuffleArray {
   public static void main(String[] args) {
      Integer[] array = {1, 2, 3, 4, 5, 6, 7};

      List<Integer> list = Arrays.asList(array);
      Collections.shuffle(list);

      // Convert the list back to an array
      array = list.toArray(new Integer[0]);

      // Print the shuffled array
      for (int i : array) {
         System.out.print(i + " ");
      }
   }
}
```

: Here I used Integer[] (wrapper class array) instead of int[] (primitive array) because Arrays.asList() does not support primitive types. It would treat int[] as a list of a single object rather than a list of integers. If you try using int[], you will get unexpected behavior.

2) Enter a Roman Number as input and convert it to an integer. (Example: IX = 9)

```
 import java.util.HashMap;
import java.util.Map;
import java.util.Scanner;

public class RomanToInteger {

   private static final Map<Character, Integer> ROMAN_MAP = new HashMap<>();

   static {
      ROMAN_MAP.put('I', 1);
      ROMAN_MAP.put('V', 5);
      ROMAN_MAP.put('X', 10);
      ROMAN_MAP.put('L', 50);
      ROMAN_MAP.put('C', 100);
      ROMAN_MAP.put('D', 500);
      ROMAN_MAP.put('M', 1000);
   }

   public static void main(String[] args) {
      Scanner scanner = new Scanner(System.in);
      System.out.print("Enter a Roman numeral: ");
      String roman = scanner.nextLine();
      System.out.println("The integer value is: " + romanToInt(roman));
   }

   public static int romanToInt(String s) {
      int total = 0;
      int prevValue = 0;
```

```
        for (char c : s.toCharArray()) {
            int value = ROMAN_MAP.get(c);
            total += (value > prevValue) ? value - 2 * prevValue : value;
            prevValue = value;
        }

        return total;
    }
}
```

3) Check if the input is pangram or not. (A pangram is a sentence that contains all the alphabets from A to Z)

```
import java.util.HashSet;
import java.util.Scanner;
import java.util.Set;

public class PangramChecker {

    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter a sentence: ");
        String sentence = scanner.nextLine();

        if (isPangram(sentence)) {
            System.out.println("The sentence is a pangram.");
        } else {
            System.out.println("The sentence is not a pangram.");
        }
```

```
    }

    public static boolean isPangram(String s) {
        Set<Character> alphabetSet = new HashSet<>();
        for (char c : s.toUpperCase().toCharArray()) {
            if (Character.isLetter(c)) {
                alphabetSet.add(c);
            }
        }
        return alphabetSet.size() == 26;
    }
}
```

JAVASCRIPT

1) Take a sentence as an input and reverse every word in that sentence.
   Example - This is a sunny day > shiT si a ynnus yad.

```
function reverseWords(sentence) {
    return sentence.split(' ').map(word => word.split('').reverse().join('')).join(' ');
}

// Testing the function
const input = "This is a sunny day";
console.log(reverseWords(input));  // Outputs: shiT si a ynnus yad
```

2) Perform sorting of an array in descending order.

```
function sortDescending(arr) {
    return arr.sort((a, b) => b - a);
}

// Testing the function
```

```
const array = [5, 2, 9, 1, 5, 6];
console.log(sortDescending(array));  // Outputs: [9, 6, 5, 5, 2, 1]
```

HTML

1) Create a basic calculator using HTML, CSS, and JavaScript with the functionality of add, subtract, multiply and divide. Use the following picture for reference .

Index.html file :

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Basic Calculator</title>
  <link rel="stylesheet" href="styles.css">
</head>
<body>
  <div class="calculator">
    <input type="text" id="display" readonly>
    <div class="buttons">
      <button onclick="clearDisplay()">C</button>
      <button onclick="appendToDisplay('/')">/</button>
      <button onclick="appendToDisplay('*')">*</button>
      <button onclick="appendToDisplay('-')">-</button>
      <button onclick="appendToDisplay('1')">1</button>
      <button onclick="appendToDisplay('2')">2</button>
      <button onclick="appendToDisplay('3')">3</button>
      <button onclick="appendToDisplay('+')">+</button>
      <button onclick="appendToDisplay('4')">4</button>
      <button onclick="appendToDisplay('5')">5</button>
      <button onclick="appendToDisplay('6')">6</button>
      <button onclick="calculate()">=</button>
      <button onclick="appendToDisplay('7')">7</button>
      <button onclick="appendToDisplay('8')">8</button>
      <button onclick="appendToDisplay('9')">9</button>
      <button onclick="appendToDisplay('0')">0</button>
    </div>
  </div>
  <script src="script.js"></script>
</body>
</html>
```

CSS (styles.css) file:

```
.calculator {
  width: 200px;
  margin: 100px auto;
  border: 1px solid #000;
  border-radius: 5px;
  box-shadow: 0 0 10px rgba(0, 0, 0, 0.1);
  padding: 20px;
}

#display {
  width: 100%;
  padding: 10px;
  margin-bottom: 10px;
  font-size: 18px;
}

.buttons {
  display: grid;
  grid-template-columns: 1fr 1fr 1fr 1fr;
  gap: 10px;
}

button {
  padding: 15px;
  font-size: 16px;
  cursor: pointer;
  border: none;
  background-color: #f2f2f2;
  border-radius: 5px;
  transition: background-color 0.2s;
}

button:hover {
  background-color: #ddd;
}

button:focus {
  outline: none;
}
```

JavaScript (script.js) file:

```
function appendToDisplay(value) {
  document.getElementById('display').value += value;
```

```
}

function clearDisplay() {
  document.getElementById('display').value = '';
}

function calculate() {
  let result = eval(document.getElementById('display').value);
  document.getElementById('display').value = result;
}
```

Create a survey form with Fields; First Name, Last Name, Date of Birth, Country (dropdown), Gender (checkbox), Profession, email, and mobile number. All the input fields are necessary to submit the form. Create two buttons Submit and Reset. Reset will reset the form while clicking on submit, first, it will check all the fields and necessary validations and then a popup will appear displaying all the selected values with labels in front of it. On closing the popup, the form should reset all the values. Use the following image for reference.

index.html file:

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Survey Form</title>
</head>
<body>

<form id="surveyForm">
  <label for="firstName">First Name:</label>
  <input type="text" id="firstName" name="firstName" required>

  <label for="lastName">Last Name:</label>
  <input type="text" id="lastName" name="lastName" required>

  <label for="dob">Date of Birth:</label>
  <input type="date" id="dob" name="dob" required>

  <label for="country">Country:</label>
  <select id="country" name="country" required>
    <option value="">Select Country</option>
```

```
        <option value="USA">USA</option>
        <option value="Canada">Canada</option>
        <!-- Add other countries as needed -->
    </select>

    <label>Gender:</label>
    <input type="checkbox" id="male" name="gender" value="Male">
    <label for="male">Male</label>
    <input type="checkbox" id="female" name="gender" value="Female">
    <label for="female">Female</label>

    <label for="profession">Profession:</label>
    <input type="text" id="profession" name="profession" required>

    <label for="email">Email:</label>
    <input type="email" id="email" name="email" required>

    <label for="mobile">Mobile Number:</label>
    <input type="tel" id="mobile" name="mobile" required>

    <button type="button" onclick="submitForm()">Submit</button>
    <button type="reset">Reset</button>
</form>

<script src="script.js"></script>
</body>
</html>
```

javascript js file.

```
function submitForm() {
    let form = document.getElementById("surveyForm");

    if (!form.checkValidity()) {
        alert("Please fill out all fields correctly.");
        return;
    }

    let formData = `
    First Name: ${form.firstName.value}\n
    Last Name: ${form.lastName.value}\n
    Date of Birth: ${form.dob.value}\n
    Country: ${form.country.value}\n
    Gender: ${[...form.gender].filter(checkbox =>
checkbox.checked).map(checkbox => checkbox.value).join(", ")}\n
    Profession: ${form.profession.value}\n
    Email: ${form.email.value}\n
    Mobile Number: ${form.mobile.value}
```

```
    `;

    alert(formData);

    form.reset();
}
```