Assignment # 02

Submitted by: Hanzala Bin Rashid

Roll Number: 140515

Submitted by: Sir Bilal

Due Date: 22-06-2023

Q.1: Create a list of names and print all names using the List method.

```dart
void main() {
  List<String> names = [
    'Ahmed',
    'Saif',
    'Tamim',
    'Okasha',
    'Hafsa',
  ];

  names.forEach((name) {
    print(name);
  });
}
```

Output:

```
flutter: Ahmed
flutter: Saif
flutter: Tamim
flutter: Okasha
flutter: Hafsa
```

Q.2: Create an empty list of type string called days. Use the add method to add names of 7 days and print all days.

Source Code:

```dart
void main() {
  List<String> days = [];

  days.add('Monday');
  days.add('Tuesday');
  days.add('Wednesday');
  days.add('Thursday');
  days.add('Friday');
  days.add('Saturday');
  days.add('Sunday');
```

```
days.forEach((day) {
  print(day);
});
}
```

Output:

```
flutter: Monday
flutter: Tuesday
flutter: Wednesday
flutter: Thursday
flutter: Friday
flutter: Saturday
flutter: Sunday
```

Q.3: Create a list of Days and remove one by one from the end of list.

Source Code:

```
void main() {
  List<String> daysOfWeek = [
    'Sunday',
    'Monday',
    'Tuesday',
    'Wednesday',
    'Thursday',
    'Friday',
    'Saturday'
  ];

  // Removing one day at a time from the end of the list
  while (daysOfWeek.isNotEmpty) {
    print('Current list: $daysOfWeek');
    String removedDay = daysOfWeek.removeLast();
    print('Removed day: $removedDay');
  }
}
```

Output:

```
flutter: Current list: [Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday]
flutter: Removed day: Saturday
flutter: Current list: [Sunday, Monday, Tuesday, Wednesday, Thursday, Friday]
flutter: Removed day: Friday
flutter: Current list: [Sunday, Monday, Tuesday, Wednesday, Thursday]
flutter: Removed day: Thursday
flutter: Current list: [Sunday, Monday, Tuesday, Wednesday]
flutter: Removed day: Wednesday
flutter: Current list: [Sunday, Monday, Tuesday]
flutter: Removed day: Tuesday
flutter: Current list: [Sunday, Monday]
flutter: Removed day: Monday
flutter: Current list: [Sunday]
flutter: Removed day: Sunday
```

Q.4: Create a list of numbers and create one empty list, now check for every index number is EVEN or ODD. if number is even then add true into empty list and if number is odd then add false into empty list, both list needs to print at the end.

Source Code:

```
void main() {
  List<int> numbers = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10];
  List<bool> isEvenList = [];

  for (int number in numbers) {
    bool isEven = number % 2 == 0;
    isEvenList.add(isEven);
  }

  print('Original list of numbers: $numbers');
  print('List of even/odd results: $isEvenList');
}
```

Output:

```
flutter: Original list of numbers: [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
flutter: List of even/odd results: [false, true, false, true, false, true, false, true, false, true]
```

Q.5: Create a list of numbers & write a program to get the smallest & greatest number from a list.

Source Code:

```
void main() {
  List<int> numbers = [15, 7, 22, 4, 9, 13, 11, 5];

  int smallestNumber = getSmallestNumber(numbers);
  int greatestNumber = getGreatestNumber(numbers);
```

```
  print('List of numbers: $numbers');
  print('Smallest number: $smallestNumber');
  print('Greatest number: $greatestNumber');
}

int getSmallestNumber(List<int> numbers) {
  int smallest = numbers[0];

  for (int i = 1; i < numbers.length; i++) {
    if (numbers[i] < smallest) {
      smallest = numbers[i];
    }
  }

  return smallest;
}

int getGreatestNumber(List<int> numbers) {
  int greatest = numbers[0];

  for (int i = 1; i < numbers.length; i++) {
    if (numbers[i] > greatest) {
      greatest = numbers[i];
    }
  }

  return greatest;
}
```

Output:

```
flutter: List of numbers: [15, 7, 22, 4, 9, 13, 11, 5]
flutter: Smallest number: 4
flutter: Greatest number: 22
```

Q.6: Remove all false values from Q4 list by using removeWhere or retainWhere property.

Source Code:

```
void main() {
  List<int> numbers = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10];
  List<bool> isEvenList = [];

  for (int number in numbers) {
    bool isEven = number % 2 == 0;
    isEvenList.add(isEven);
```

```
    }

  print('Original list of numbers: $numbers');
  print('List of even/odd results (before removing): $isEvenList');

  isEvenList.removeWhere((value) => value == false);

  print('List of even/odd results (after removing): $isEvenList');
}
```

Output:

```
flutter: Original list of numbers: [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
flutter: List of even/odd results (before removing): [false, true, false, true, false, true, false, true, false, true]
flutter: List of even/odd results (after removing): [true, true, true, true, true]
```

Q.7: Create a list of numbers & write a program that removes all even numbers from the list and adds 1 to each odd number left.

Source Code:

```
void main() {
  List<int> numbers = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10];

  print('Original list of numbers: $numbers');

  // Remove even numbers and add 1 to each odd number
  numbers.removeWhere((number) => number % 2 == 0);
  numbers = numbers.map((number) => number + 1).toList();

  print('Updated list of numbers: $numbers');
}
```

Output:

```
flutter: Original list of numbers: [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
flutter: Updated list of numbers: [2, 4, 6, 8, 10]
```

Q.8: From Q3 write a program that prints the days that start with the letter "S".

Source Code:

```
void main() {
 List<String> daysOfWeek = [
  'Sunday',
  'Monday',
  'Tuesday',
  'Wednesday',
  'Thursday',
  'Friday',
  'Saturday'
 ];

 List<String> daysStartingWithS = daysOfWeek
    .where((day) => day.startsWith('S'))
    .toList();

 print('Days that start with the letter "S": $daysStartingWithS');
}
```

Output:

```
flutter: Days that start with the letter "S": [Sunday, Saturday]
```