

## Program for Fizz Buzz

```
import java.util.ArrayList;
import java.util.List;

public class FizzBuzz {

    public static List<String> fizzBuzz(int n) {
        List<String> arr = new ArrayList<>();
        for (int i = 1; i <= n; i++) {
            if (i % 3 == 0 && i % 5 == 0)
                arr.add("FizzBuzz");
            else if (i % 5 == 0)
                arr.add("Buzz");
            else if (i % 3 == 0)
                arr.add("Fizz");
            else {
                String s = String.valueOf(i);
                arr.add(s);
            }
        }
        return arr;
    }

    public static void main(String[] args) {
        int n = 7; // Sample input
        List<String> result = fizzBuzz(n);

        System.out.println("Output :"+ result);
    }
}
```

OUTPUT

Output :[1, 2, Fizz, 4, Buzz, Fizz, 7]

## Program for Add Binary

```
public class AddBinary {  
  
    public static String addBinary(String a, String b) {  
        StringBuilder result = new StringBuilder();  
        int carry = 0;  
  
        int i = a.length() - 1;  
        int j = b.length() - 1;  
  
        while (i >= 0 || j >= 0) {  
            int sum = carry;  
            if (i >= 0) {  
                sum = sum + a.charAt(i) - '0';  
                i--;  
            }  
            if (j >= 0) {  
                sum = sum + b.charAt(j) - '0';  
                j--;  
            }  
  
            result.append(sum % 2);  
            carry = sum / 2;  
        }  
  
        if (carry != 0) {  
            result.append(carry);  
        }  
  
        return result.reverse().toString();  
    }  
  
    public static void main(String[] args) {  
        String a = "1010";  
        String b = "1101";  
        System.out.println("Output: " + addBinary(a, b));  
    }  
}
```

OUTPUT

Output: 10111

## Program for Number is happy or not

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

public class NumberHappy {

    // Function to check if a number is a happy number
    public static boolean isHappy(int num) {
        Set<Integer> hs = new HashSet<>();
        while (num != 1 && !hs.contains(num)) {
            hs.add(num);
            num = calculateSumOfSquares(num);
        }
        return num == 1;
    }

    // Function to calculate the sum of squares of digits
    private static int calculateSumOfSquares(int num) {
        int sum = 0;
        while (num > 0) {
            int result = num % 10;
            sum += result * result;
            num /= 10;
        }
        return sum;
    }

    public static void main(String[] args) {
        int n = 19; // Sample input

        // Check if the number is a happy number and print the result
        System.out.println("Output: " + n + " Is Happy Number : " + isHappy(n));
    }
}
```

## OUTPUT

Output: 19 Is Happy Number : true