Assignment 3

```java
import java.util.Scanner;

public class Main {

    // Function to encrypt a message using the Polybius cipher
    public static String polybiusEncrypt(String message) {
        String encryptedMessage = "";
        String[] polybiusTable = {
            "ABCDE",
            "FGHIJ",
            "KLMNO",
            "PQRST",
            "UVWXY"
        };

        for (char c : message.toCharArray()) {
            if (Character.isAlphabetic(c)) {
                c = Character.toUpperCase(c); // Convert to uppercase
                if (c == 'Z') c = 'Y'; // Handle 'Z' as 'Y'
                for (int row = 0; row < 5; ++row) {
                    int col = polybiusTable[row].indexOf(c);
                    if (col != -1) {
                        encryptedMessage += (row + 1) + "" + (col + 1);
                        break;
                    }
                }
            } else {
                // Non-alphabetic characters are not encrypted
                encryptedMessage += c;
            }
        }
```

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        }
        return encryptedMessage;
    }


    // Function to decrypt a message using a reverse substitution cipher (Caesar cipher)
    public static String decryptMessage(String encryptedMessage) {
        String decryptedMessage = "";
        int shift = 1; // Caesar cipher shift value
        for (int i = 0; i < encryptedMessage.length(); ++i) {
            if (Character.isDigit(encryptedMessage.charAt(i))) {
                int row = encryptedMessage.charAt(i) - '0';
                int col = encryptedMessage.charAt(++i) - '0' - 1;
                decryptedMessage += (char) ('A' + (row - 1) * 5 + col);
            } else {
                // Non-digit characters are not decrypted
                decryptedMessage += encryptedMessage.charAt(i);
            }
        }
        return decryptedMessage;
    }


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


        // Encrypt the message using the Polybius cipher
        String encryptedMessage = polybiusEncrypt(message);
        System.out.println("Encrypted message: " + encryptedMessage);


        // Decrypt the message using a reverse substitution cipher (Caesar cipher)
```
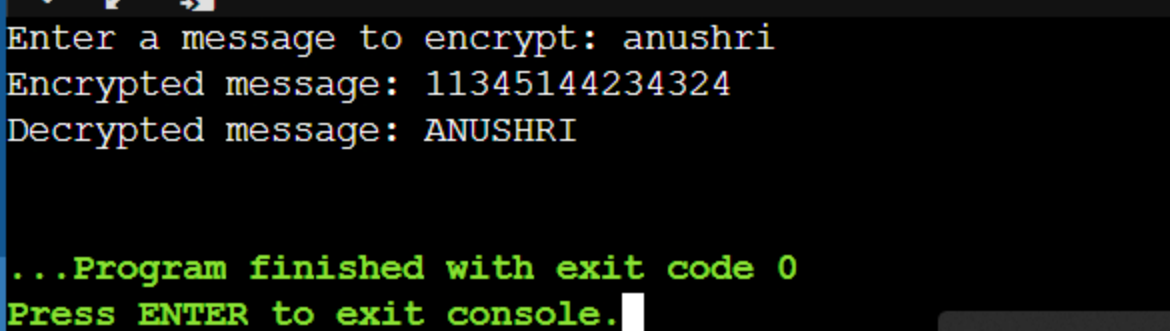
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        String decryptedMessage = decryptMessage(encryptedMessage);

        System.out.println("Decrypted message: " + decryptedMessage);

    }

}
```

Output:

```
Enter a message to encrypt: anushri
Encrypted message: 11345144234324
Decrypted message: ANUSHRI


...Program finished with exit code 0
Press ENTER to exit console.
```