```
import java.util.Scanner;

public class FederalTaxRate {

   public static void main(String args[]) {

     // Construct a Scanner for user input
     Scanner scan = new Scanner(System.in);
     System.out.println("Which marital status best describes you: Married or Unmarried?");
     String inputtedMaritalStatus = scan.nextLine();
     String letterStatus = inputtedMaritalStatus.substring(0, 1).toLowerCase();

     System.out.println("What is your annual income?");
     double income = scan.nextDouble();
     scan.close();

     double tax = calculateTax(letterStatus, income);

     if (tax ==-1) {
           System.out.println("ERROR: Income cannot be a negative value or incorrect maritial
status");
     }

     else {
     System.out.println("You must pay " + String.format("%.2f",tax) + " in federal income taxes.");
     }
   }

   public static double calculateTax(String maritalStatus, double income)  {

     double tax = 0.0;

     // Check for negative income
     if (income < 0)
           return -1; // Decide on a sentinel value; I'll use -1




     if (maritalStatus.equals("u"))  {
       // Assign the variable tax according to Schedule X
           if (income >= 0 && income <= 11925) {
                 tax = (income - 0) * 0.1;
```

```
        }
        else if (income > 11925 && income <= 48475) {
                tax = ((income - 11925) * 0.12) + 1192.50;
        }

        else if (income > 48475 && income <= 103350) {
                tax = ((income - 48475) * 0.22) + 5578.50;
        }

        else if (income > 103350 && income <= 197300) {
                tax = ((income - 103350) * 0.24) + 17651.00;
        }

        else if (income > 197300 && income <= 250525) {
                tax = ((income - 197300) * 0.32) + 40199.00;
        }

        else if (income > 250525 && income <= 626350) {
                tax = ((income - 250525) * 0.35) + 57231.00;
        }

        else if (income > 626350) {
                tax = ((income - 626350) * 0.37) + 188769.75;
        }

        }


else if (maritalStatus.equals("m"))  {
  // Assign the variable tax according to Schedule Y-1
        if (income > 0 && income <= 23850) {
                tax = (income - 0) * 0.1;
        }
        else if (income > 23850 && income <= 96950) {
                tax = ((income - 23850) * 0.12) + 2385.00;
        }

        else if (income > 96950 && income <= 206700) {
                tax = ((income - 96950) * 0.22) + 11157.00;
        }

        else if (income > 206700 && income <= 394600) {
                tax = ((income - 206700) * 0.24) + 35302.00;
        }
```

```
            else if (income > 394600 && income <= 501050) {
                    tax = ((income - 394600) * 0.32) + 80398.00;
            }

            else if (income > 501050 && income <= 751600) {
                    tax = ((income - 501050) * 0.35) + 114462.00;
            }

            else if (income > 751600) {
                    tax = ((income - 751600) * 0.37) + 202154.50;
            }


        }
        else  {
          System.out.println("ERROR:  No tax table found.");
              return -1;  // Decide on a sentinel value; I'll use -1
        }

        // Round tax to the nearest penny and return the value of tax
        tax = Math.round(tax * 100.0) / 100.0;
        return tax;

      }
}
```