FINALS P1

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CODE:

```java
package Capulong_Erystle;
import java.util.Scanner;

public class Finals {
    Run | Debug
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        // civil status
        String[] civilStatusChoices = {"Single", "Married", "Head of the family"};

        while (true) {
            String name, tin, civilStatus;
            int grossIncome, numDependents;
            boolean rerun = true;

            while(rerun) {
                try {
                    // User Input
                    System.out.print(s:"Please enter the name of the Taxpayer: ");
                    name = sc.nextLine();

                    System.out.print(s:"Enter your Tax Identification number: ");
                    tin = sc.nextLine();

                    System.out.print(s:"Enter your Gross Annual Income: ");
                    grossIncome = sc.nextInt();
                    sc.nextLine();

                    System.out.println(x:"What is your Civil status? ");
                    for (int i = 0; i < civilStatusChoices.length; i++) {
                        System.out.println("[" + (char) ('A' + i) + "] " + civilStatusChoices[i]);
                    }
```

```java
    }

    while (true) {
        System.out.print(s:"Please Input the letter of your choice: ");
        char choice = sc.next().toUpperCase().charAt(index:0);
        if (choice >= 'A' && choice <= 'C') {
            int choiceIndex = choice - 'A';
            civilStatus = civilStatusChoices[choiceIndex];
            break;
        } else {
            System.out.println(x:"Invalid choice. Please enter A, B, or C.");
        }
    }

    int persDeduc = getPersDeduc(civilStatus);
    int additionExemp = 0;

    if (!civilStatus.equalsIgnoreCase(anotherString:"Single")) {
        while (true) {
            try {
                System.out.print(s:"Please input your number of dependents: ");
                numDependents = sc.nextInt();
                if (numDependents >= 0 && numDependents <= 4) {
                    break;
                } else {
                    System.out.println(x:"Invalid input. Number of dependents should be between 0 and 4.");
                }
            } catch (Exception e) {
                System.out.println(x:"Invalid input. Please enter a valid number.");
                sc.nextLine();
            }
        }

        additionExemp = getAdditionExemp(numDependents);
    }
```

```
                int totalExemp = persDeduc + additionExemp;
                int taxableIncome = grossIncome - totalExemp;
                int taxDue = calculateTaxDue(taxableIncome);

                // Output
                System.out.println(x:"\n");
                System.out.println("Taxpayer's Name: " + name);
                System.out.println("TIN No. : " + tin);
                System.out.println("Civil Status: " + civilStatus);
                System.out.println("Personal Deduction: " + persDeduc);
                System.out.println("Additional Exemption: " + additionExemp);
                System.out.println("Taxable Income: " + taxableIncome);
                System.out.println("Tax Due: " + taxDue);

                rerun = false;

            } catch (Exception e) {
                System.out.println(x:"An error occurred. Please check your input and try again.");
                sc.nextLine();
            }
        }

        System.out.print(s:"Do you want to calculate another tax (Y/N)? ");
        String repeat = sc.next();

        if (!repeat.equalsIgnoreCase(anotherString:"Y")) {
            break;
        }
        sc.nextLine();
    }
    System.out.println(x:"Thank you for using the Tax Due Calculator Program. Goodbye!");
}
```

```
    public static int getPersDeduc(String civilStatus) {
        return 50000;
    }

    public static int getAdditionExemp(int numDependents) {
        int maxDependents = 4;
        return 25000 * Math.min(numDependents, maxDependents);
    }

    public static int calculateTaxDue(int taxableIncome) {
        int taxDue = 0;

        if (taxableIncome <= 250000) {
            taxDue = 0; // Tax rate: 0%
        } else if (taxableIncome <= 400000) {
            taxDue = (int) ((taxableIncome - 250000) * 0.15); // Tax rate: 15% of the excess over 250,000
        } else if (taxableIncome <= 800000) {
            taxDue = 22500 + (int) ((taxableIncome - 400000) * 0.20); // Tax rate: 22,500 + 20% of the excess over 400,000
        } else if (taxableIncome <= 2000000) {
            taxDue = 102500 + (int) ((taxableIncome - 800000) * 0.25); // Tax rate: 102,500 + 25% of the excess over 800,0
        } else if (taxableIncome <= 5000000) {
            taxDue = 402500 + (int) ((taxableIncome - 2000000) * 0.30); // Tax rate: 402,500 + 30% of the excess over 2,00
        } else {
            taxDue = 1302500 + (int) ((taxableIncome - 5000000) * 0.35); // Tax rate: 1,302,500 + 35% of the excess over

        }
        return taxDue;
    }

}
```

OUTPUT:

```
\Code.Layp_72340331\bin" "Capulong_Erystle.Finals"
Please enter the name of the Taxpayer: Erystle Capulong
Enter your Tax Identification number: 111-222-333
Enter your Gross Annual Income: 90000
What is your Civil status?
[A] Single
[B] Married
[C] Head of the family
Please Input the letter of your choice: A


Taxpayer's Name: Erystle Capulong
TIN No. : 111-222-333
Civil Status: Single
Personal Deduction: 50000
Additional Exemption: 0
Taxable Income: 40000
Tax Due: 0
Do you want to calculate another tax (Y/N)?
```

Figure 1: Smooth flow of the program with Single Civil Status

```
Do you want to calculate another tax (Y/N)? y
Please enter the name of the Taxpayer: Ery Capulong
Enter your Tax Identification number: 222-333-444
Enter your Gross Annual Income: 300000
What is your Civil status?
[A] Single
[B] Married
[C] Head of the family
Please Input the letter of your choice: b
Please input your number of dependents: 3


Taxpayer's Name: Ery Capulong
TIN No. : 222-333-444
Civil Status: Married
Personal Deduction: 50000
Additional Exemption: 75000
Taxable Income: 175000
Tax Due: 0
Do you want to calculate another tax (Y/N)?
```

Figure 2: Smooth flow of the program with Married Civil status

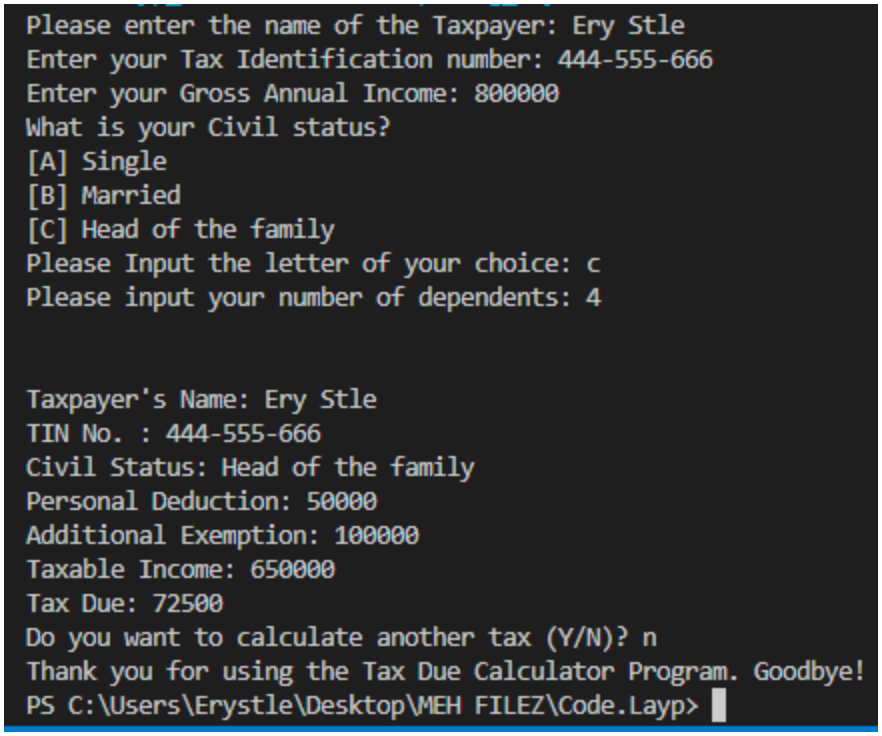

Figure 3: Smooth flow of the program with Head of the family civil status

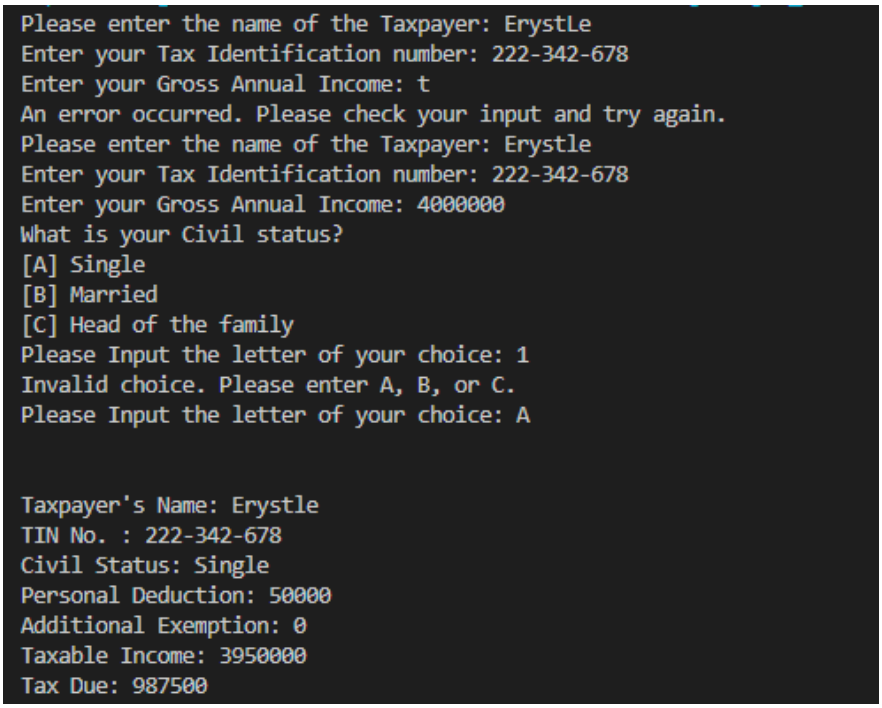

Figure 4: multiple errors with wrong user Input