SCHOOL OF COMPUTING
UNIVERSITI UTARA MALAYSIA

STIA1123 PROGRAMMING 2

ASSIGNMENT 1 (7%)

FIRST SEMESTER SESSION 2022/2023 (A 221)

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Date of Submission : 4th December 2022

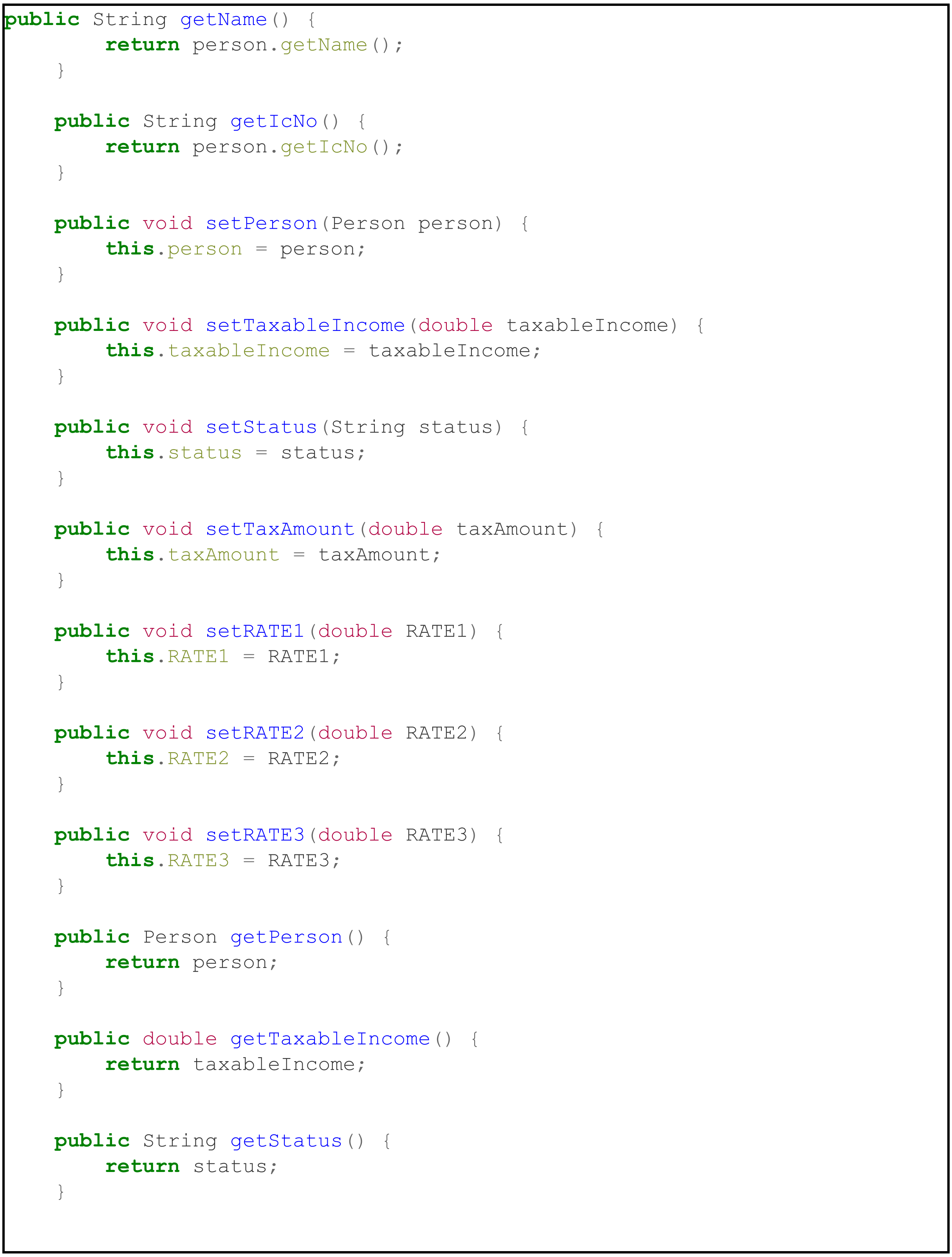
Person Class Code

```java
public class Person {
    private String name;
    private String icNo;


    public Person (String name, String icNo){
        this.name = name;
        this.icNo = icNo;
    }

    @Override
    public String toString(){
   return "name= " + name + ", icNo= " + icNo;
   }

    public String getName() {
        return name;
    }

    public String getIcNo() {
        return icNo;
    }

    public void setName(String name) {
        this.name = name;
    }

    public void setIcNo(String icNo) {
        this.icNo = icNo;
    }

}
```

Tax Class Code part 1

```
public class Tax {
    private Person person;
    private double taxableIncome;
    private String status;
    private double taxAmount;
    private double RATE1 = 0.10;
    private double RATE2 = 0.20;
    private double RATE3 = 0.35;

    public Tax(Person person, double taxableIncome, String status) {
        this.person = person;
        this.taxableIncome = taxableIncome;
        this.status = status;
        this.taxAmount = calculateTax();
    }

    public double calculateTax() {

    if (status.equals("single")) {
        if (taxableIncome <= 21000) {
            taxAmount = taxableIncome * RATE1;
            return taxAmount;

        } else if (taxableIncome <= 51000) {
            taxAmount = taxableIncome * RATE2;
            return taxAmount;
        } else {
            taxAmount = taxableIncome * RATE3;
            return taxAmount;
        }
    } else if (status.equals("married")) {
        if (taxableIncome <= 35000) {
            taxAmount = taxableIncome * RATE1;
            return taxAmount;
        } else if (taxableIncome <= 86000) {
            taxAmount = taxableIncome * RATE2;
            return taxAmount;
        } else {
            taxAmount = taxableIncome * RATE3;
            return taxAmount;
        }
    }
    return 0;
    }


    @Override
    public String toString() {
        return "person= " + person + ", taxableIncome=" + taxableIncome +
", status=" + status + ", taxAmount=" + taxAmount;
    }
```

Tax Class Code part 2



```
public String getName() {
        return person.getName();
    }

    public String getIcNo() {
        return person.getIcNo();
    }

    public void setPerson(Person person) {
        this.person = person;
    }

    public void setTaxableIncome(double taxableIncome) {
        this.taxableIncome = taxableIncome;
    }

    public void setStatus(String status) {
        this.status = status;
    }

    public void setTaxAmount(double taxAmount) {
        this.taxAmount = taxAmount;
    }

    public void setRATE1(double RATE1) {
        this.RATE1 = RATE1;
    }

    public void setRATE2(double RATE2) {
        this.RATE2 = RATE2;
    }

    public void setRATE3(double RATE3) {
        this.RATE3 = RATE3;
    }

    public Person getPerson() {
        return person;
    }

    public double getTaxableIncome() {
        return taxableIncome;
    }

    public String getStatus() {
        return status;
    }
```

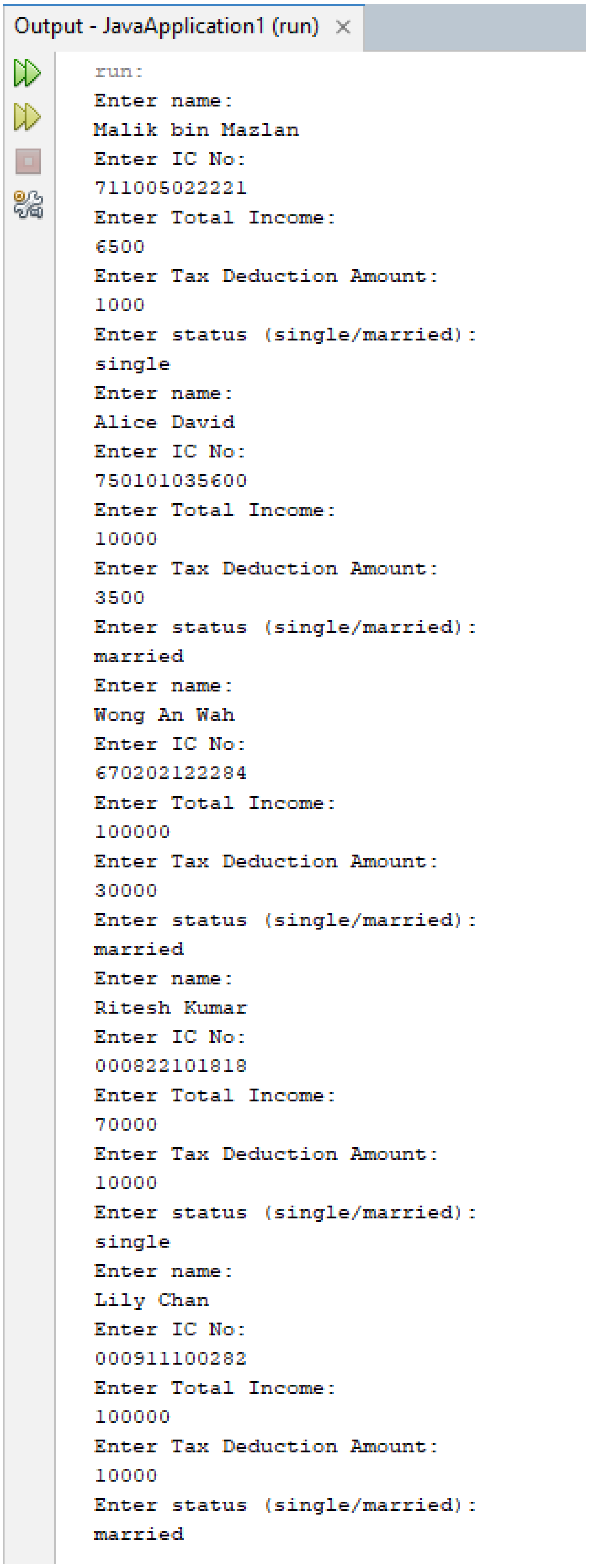
Tax Class Code part 3

```
    public double getTaxAmount() {
        return taxAmount;
    }

    public double getRATE1() {
        return RATE1;
    }

    public double getRATE2() {
        return RATE2;
    }

    public double getRATE3() {
        return RATE3;
    }

}
```

TaxCalculator Class Code

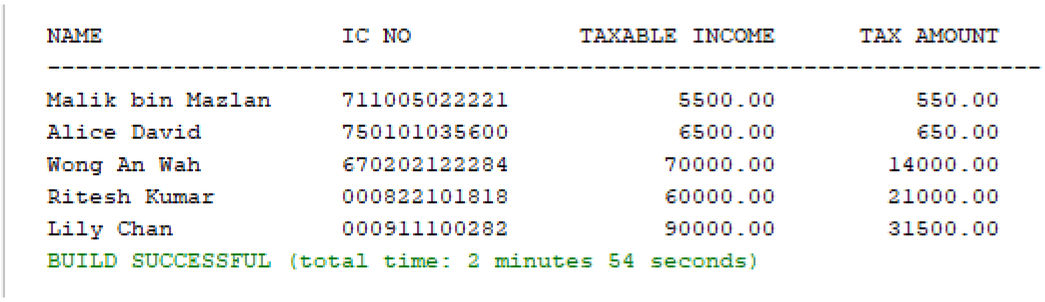
```
import java.util.Scanner;

public class TaxCalculator {
    private static Tax[] tax = new Tax[5];

  public static void main(String[] args) {
    input(tax);
    printTaxAmount(tax);
  }

  public static void input(Tax[] tax) {
    Scanner sc = new Scanner(System.in);

    for (int i = 0; i < tax.length; i++) {
      System.out.println("Enter name: ");
      String name = sc.nextLine();
      System.out.println("Enter IC No: ");
      String icNo = sc.nextLine();
      System.out.println("Enter Total Income: ");
      double totalIncome = sc.nextDouble();
      System.out.println("Enter Tax Deduction Amount: ");
      double taxDeductionAmount = sc.nextDouble();
      double taxableIncome = totalIncome - taxDeductionAmount;
      sc.nextLine(); // consume the remaining newline character
      System.out.println("Enter status (single/married): ");
      String status = sc.nextLine();
      Person person = new Person(name, icNo);
      tax[i] = new Tax(person, taxableIncome, status);

    }
  }

  public static void printTaxAmount(Tax[] tax) {
  // Print table header
  System.out.printf("\n%-15s %-15s %15s %15s\n", "NAME", "IC NO", "TAXABLE
INCOME", "TAX AMOUNT");
        System.out.println("-----------------------------------------------
------------------------");

        // Print table rows
        for (Tax tax1 : tax) {
            // Get person's name, IC number, taxable income, and tax amount
            String name = tax1.getName();
            String icNo = tax1.getIcNo();
            double taxableIncome = tax1.getTaxableIncome();
            double taxAmount = tax1.calculateTax();
            // Print table row using string formatting
            System.out.printf("%-15s %-15s %15.2f %15.2f\n", name, icNo,
taxableIncome, taxAmount);

        }
  }
}
```

Initial Input to create Tax objects



```
run:
Enter name:
Malik bin Mazlan
Enter IC No:
711005022221
Enter Total Income:
6500
Enter Tax Deduction Amount:
1000
Enter status (single/married):
single
Enter name:
Alice David
Enter IC No:
750101035600
Enter Total Income:
10000
Enter Tax Deduction Amount:
3500
Enter status (single/married):
married
Enter name:
Wong An Wah
Enter IC No:
670202122284
Enter Total Income:
100000
Enter Tax Deduction Amount:
30000
Enter status (single/married):
married
Enter name:
Ritesh Kumar
Enter IC No:
000822101818
Enter Total Income:
70000
Enter Tax Deduction Amount:
10000
Enter status (single/married):
single
Enter name:
Lily Chan
Enter IC No:
000911100282
Enter Total Income:
100000
Enter Tax Deduction Amount:
10000
Enter status (single/married):
married
```

Output/Results



```
NAME                 IC NO            TAXABLE INCOME      TAX AMOUNT
-----------------------------------------------------------------------
Malik bin Mazlan     711005022221            5500.00          550.00
Alice David          750101035600            6500.00          650.00
Wong An Wah          670202122284           70000.00        14000.00
Ritesh Kumar         000822101818           60000.00        21000.00
Lily Chan            000911100282           90000.00        31500.00
BUILD SUCCESSFUL (total time: 2 minutes 54 seconds)
```