Assignment 3

To Be Handed In by Tuesday December 3

- a printed copy of all code
- use NetBeans to print out the java code with line numbers

To Be Submitted by Sunday December 1

- a zipped copy of your NetBeans project by Sunday December 1
    - use File > Export Project > To ZIP
    - the name of this file should be yourName_a3.zip

To Be Demonstrated

- must demonstrate the program to me
- it will not be marked until you have demonstrated the program to me
- if you are unable to explain the code, your mark is ZERO
- if you do not show me a running version of the program, your mark is ZERO

Remember

- this is to be an individual effort
    - do not work with anybody to complete the assignment
- a mark of zero will be given to “group efforts”
- use NetBeans to print out a copy of the code
    - with line numbers
    - do not use line wrap
- at the beginning of class hand in the printed code
    - assignments not handed in at the beginning of class will be considered late
    - one mark will be deducted for each day that the assignment is late
    - at the end of the class show me a running version of the program

Basic Code Requirements

- the your code should contain above the class name for each class

```
/**
Your Name
Your Student Number
Assignment 3
Date
*/
```

- create a project called **PayTime** that has two classes
  - a Main class that contains the main method
  - an Employee Class

The Main Class

- prompts the user for an Employee's
  - number
  - first name
  - last name
  - hours worked
  - hourly wage
- then uses methods found in Employee class to calculate
  - regular pay
  - regular tax
  - overtime pay
  - overtime tax
- make sure that the numbers entered are reasonable
  - such as not allowing negative numbers for hours worked
  - use your own judgement
- if the user enters an invalid employee number then a message should appear saying: "Invalid, enter proper employee number: "
  - need to check the array of employee numbers stored in Employee class
- if there is no overtime then display the Employee's
  - name (one line, both first and last name)
  - regular pay (hours worked * hourly wage)
  - income taxes (see table below)
  - net pay (regular pay – income taxes)
- if there is overtime then display the employee's
  - name (one line, both first and last name)
  - regular pay (gross pay – overtime pay)
  - overtime pay
  - regular income taxes
  - overtime income taxes
  - net pay (regular pay + overtime pay – taxes)

The Employee Class

- contains a private integer array called empNumbers that contains the following valid employee numbers: 101, 103, 106, 109, 110, 113, 116, 118, 120
- contains a public method that
    - takes an integer parameter
    - returns true if that integer is found in the empNumbers array
- contains a private method to calculate pay
    - regular pay = hoursWorked * hourlyRate
    - hoursWorked cannot exceed 40 (is overtime hours after 40)
- contains a private method to calculate the income tax based on the following table

Weekly Pay ($)	**Income Tax (%) of Regular Pay**
0 to 300.00	10
300.01 to 400.00	12
400.01 to 500.00	15
500.01 and over	20

- contains a private method to calculate overtime pay
    - overtime hours are any hours worked over 40 hours
    - a worker who has worked 50 hours during a week
        - regular hours is 40 hours
        - overtime hours is 10 hours (50 hours – 40 hours)
    - the employee must be paid time and a half for any hours worked above 40 (overtime hours)
        - a worker who is paid $10 per hour gets $15 per hour of overtime
            - $15 = ($10 * 1.5)
    - if hours worked is 50 and hourly wage is $10 the
        - regular pay = 40 hours * $10 per hours
        - overtime pay = 10 hours * $15 per hour
        - thus:
            - regular pay = 40 hours * $10 per hour = $400
            - overtime pay = 10 hours * $15 per hour = $150
- contains a private method to calculate overtime taxes
    - income tax paid on overtime is 25% of overtime pay
        - calculated separately from regular pay
    - overtime information is only displayed when earned
        - should not be zeros
    - thus for $100 of overtime pay
        - overtime tax is $25
- **Note:**
    - the above methods and array must be used in your Employee class
    - you will need to add your own methods and variables to the Employee class

Your program output should be similar to the output below:

First Sample Program Interaction Example:

```
Enter Y to process a worker or any other key to end: n

Total number of Employees processed: 0
End of program
```

Second Sample Program Interaction Example:

```
Enter Y to process a worker or any other key to end: Y
Enter employee number: 101
        Enter First Name: Fred
        Enter Last Name: Budd
        Enter hours worked: 40
        Enter hourly wage: 10

Worker 101 Paycheck Information:
        Name is: Fred Budd
        Weekly Pay is: $400.00
        Income Taxes is: $48.00
        Net Pay is: $352.00

Enter Y to process another worker or any other key to end: n

Total number of Employees processed: 1
End of program
```

Third Sample Program Interaction Example:

```
Enter Y to process a worker or any other key to end: Y
Enter employee number: 99
Invalid, enter proper employee number: 101
        Enter First Name: Fred
        Enter Last Name: Budd
        Enter hours worked: -40
Negative hours not allowed
Enter hours worked: 40
        Enter hourly wage: -10
Negative hourly wage not allowed
Enter hourly wage: -10
Negative hourly wage not allowed
Enter hourly wage: 10

Worker 101 Paycheck Information:
```

Name is: Fred Budd
Weekly Pay is: $400.00
Income Taxes is: $48.00
Net Pay is: $352.00

Enter Y to process another worker or any other key to end: n

Total number of Employees processed: 1
End of program

Fourth Sample Program Interaction Example:

Enter Y to process a worker or any other key to end: Y
Enter employee number: 101
Enter First Name: Fred
Enter Last Name: Budd
Enter hours worked: 40
Enter hourly wage: 10

Worker 101 Paycheck Information:
Name is: Fred Budd
Weekly Pay is: $400.00
Income Taxes is: $48.00
Net Pay is: $352.00

Enter Y to process another worker or any other key to end: Y
Enter employee number: 103
Enter First Name: Jim
Enter Last Name: Smith
Enter hours worked: 50
Enter hourly wage: 10

Worker 103 Paycheck Information:
Name is: Jim Smith
Weekly Pay is: $400.00
Income Taxes is: $48.00
Net Pay is: $352.00

Worker 103 Overtime Calculation:
Overtime Pay is: $150.00
Overtime Tax is: $37.50
Overtime Net Pay is: $112.50
Total Net Pay is: $452.50

Enter Y to process another worker or any other key to end: n

Total number of Employees processed: 2
End of program