CS4001NT Programming

ASSIGNMENT WEEK- 3

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Section: L1C1

Roll No:

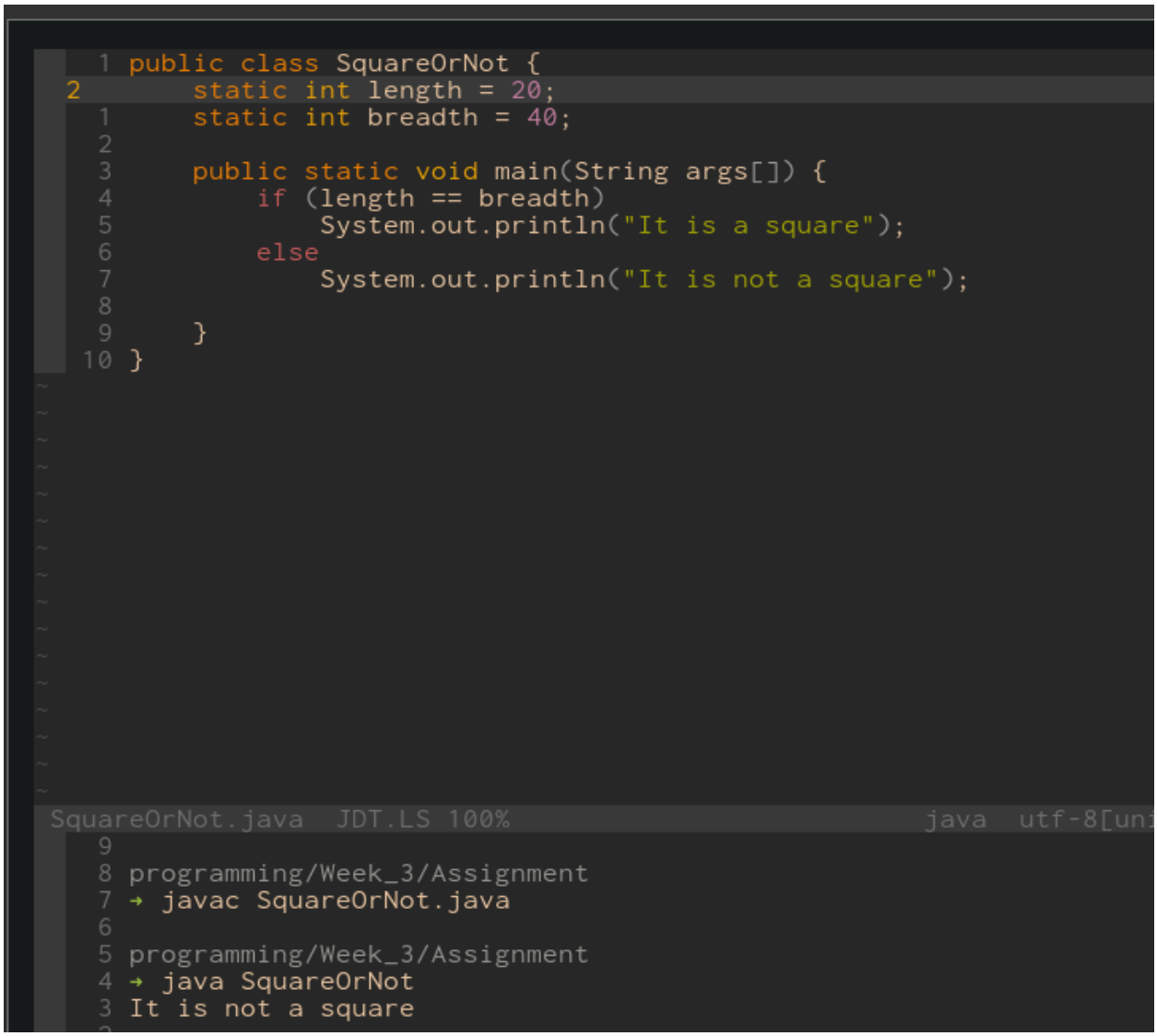
London Met ID (If available):

Assignment Due Date:

Assignment Submission Date: 27th march, 2021

Submitted to: Samir Alam

1. Provide values of length and breadth of a rectangle and check if it is square or not.



```
1  public class SquareOrNot {
2      static int length = 20;
1      static int breadth = 40;
2
3      public static void main(String args[]) {
4          if (length == breadth)
5              System.out.println("It is a square");
6          else
7              System.out.println("It is not a square");
8
9      }
10 }
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SquareOrNot.java  JDT.LS 100%                          java  utf-8[uni
9
8  programming/Week_3/Assignment
7  → javac SquareOrNot.java
6
5  programming/Week_3/Assignment
4  → java SquareOrNot
3  It is not a square
```
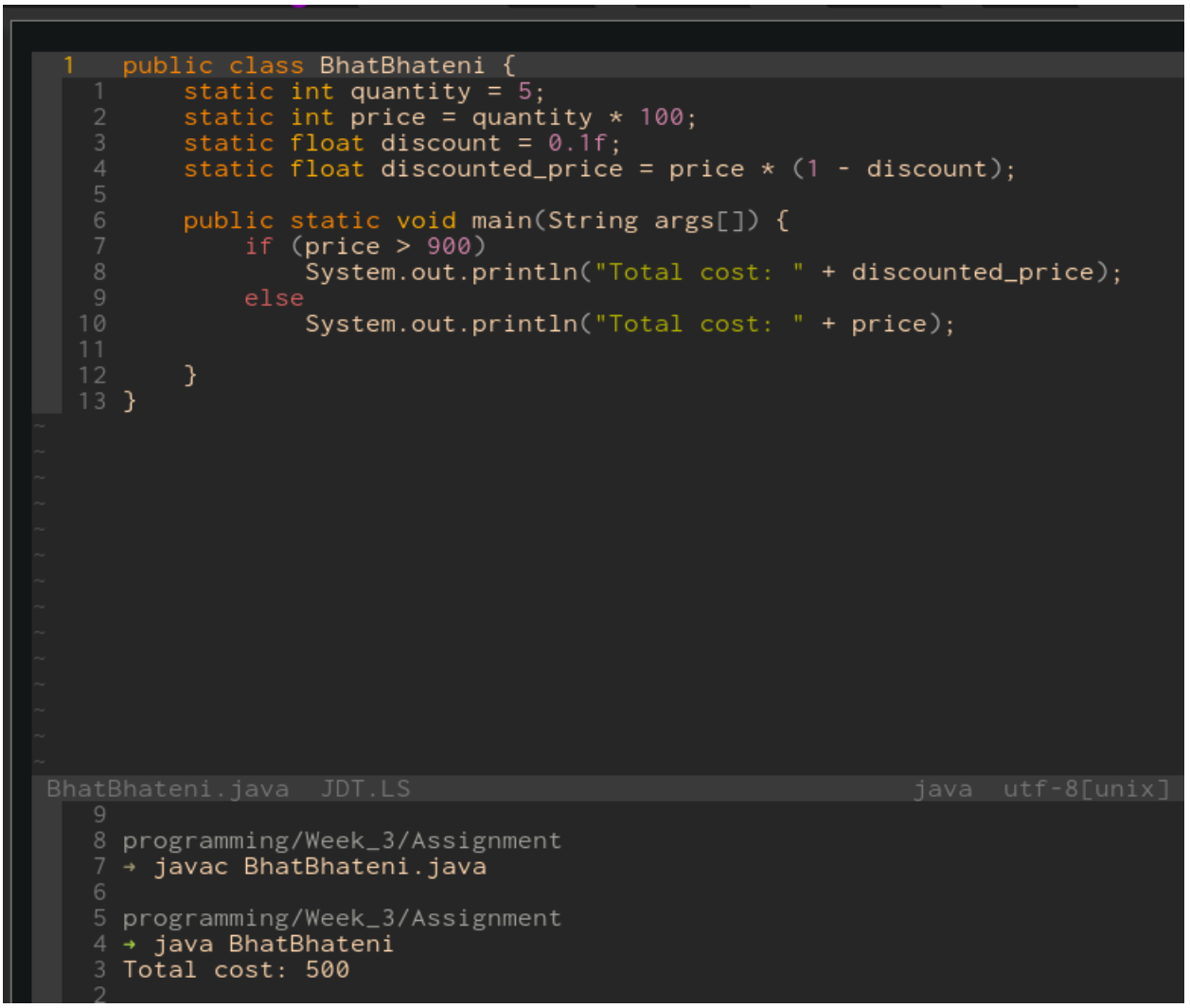

2. Bhat-Bhateni will give a discount of 10% if the cost of the purchased quantity is more than 900.

Hint: create a variable to store quantity

Suppose, one unit will cost 100.

Plan and print total cost for user.

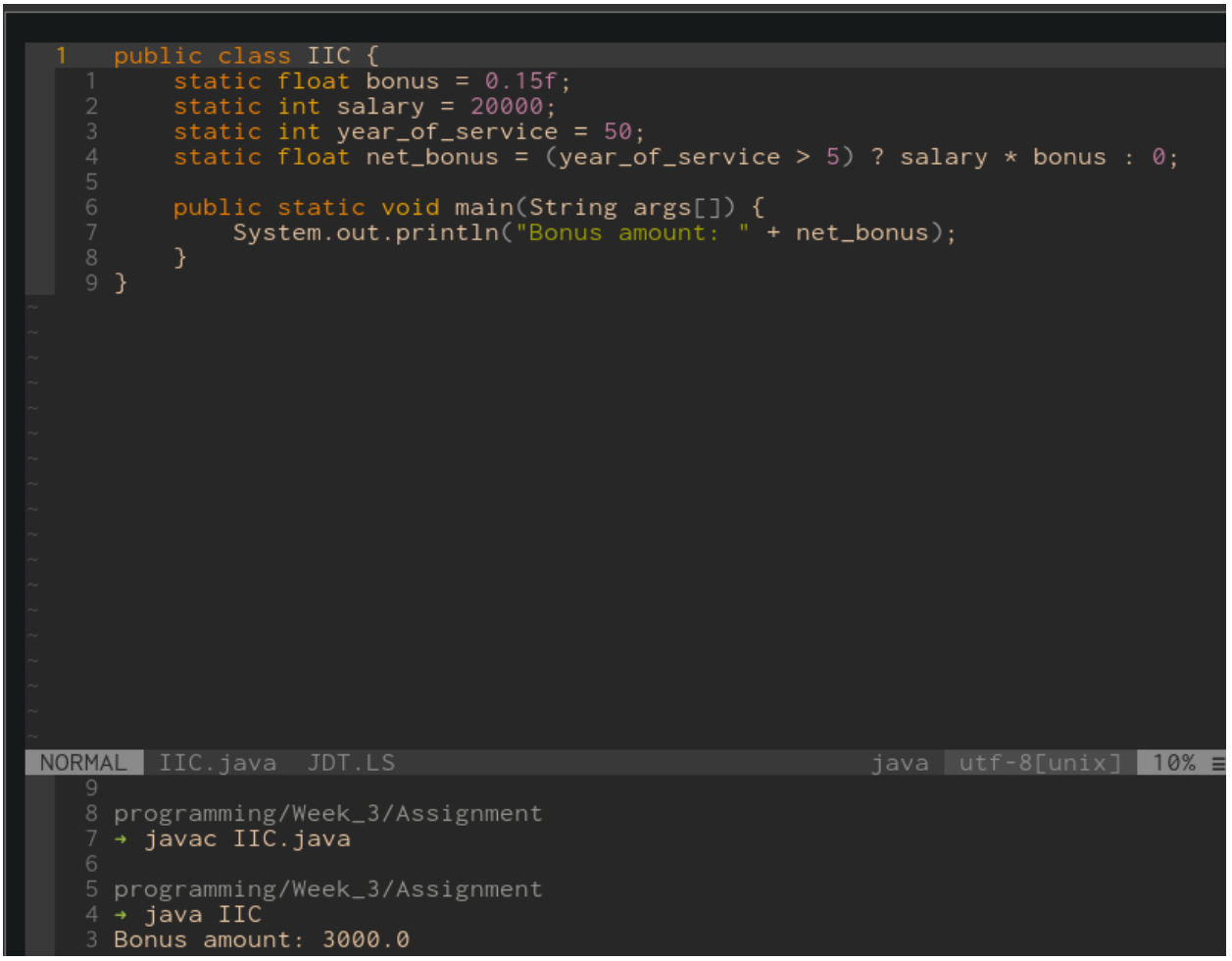


```java
public class BhatBhateni {
    static int quantity = 5;
    static int price = quantity * 100;
    static float discount = 0.1f;
    static float discounted_price = price * (1 - discount);

    public static void main(String args[]) {
        if (price > 900)
            System.out.println("Total cost: " + discounted_price);
        else
            System.out.println("Total cost: " + price);

    }
}
```

```
BhatBhateni.java  JDT.LS                                    java  utf-8[unix]

programming/Week_3/Assignment
→ javac BhatBhateni.java

programming/Week_3/Assignment
→ java BhatBhateni
Total cost: 500
```

3. Itahari International College decided to give a bonus of 15% to employees if his/her year of service is more than 5 years.

Hint: Create a variable to store their salary and year of service and print the net bonus amount.



```
public class IIC {
    static float bonus = 0.15f;
    static int salary = 20000;
    static int year_of_service = 50;
    static float net_bonus = (year_of_service > 5) ? salary * bonus : 0;

    public static void main(String args[]) {
        System.out.println("Bonus amount: " + net_bonus);
    }
}
```

```
NORMAL  IIC.java  JDT.LS                                   java  utf-8[unix]  10%

programming/Week_3/Assignment
→ javac IIC.java

programming/Week_3/Assignment
→ java IIC
Bonus amount: 3000.0
```

4. A student will not be allowed to sit in an exam if his/her attendance is less than 75%.

Hint: Create variables to store the following information.

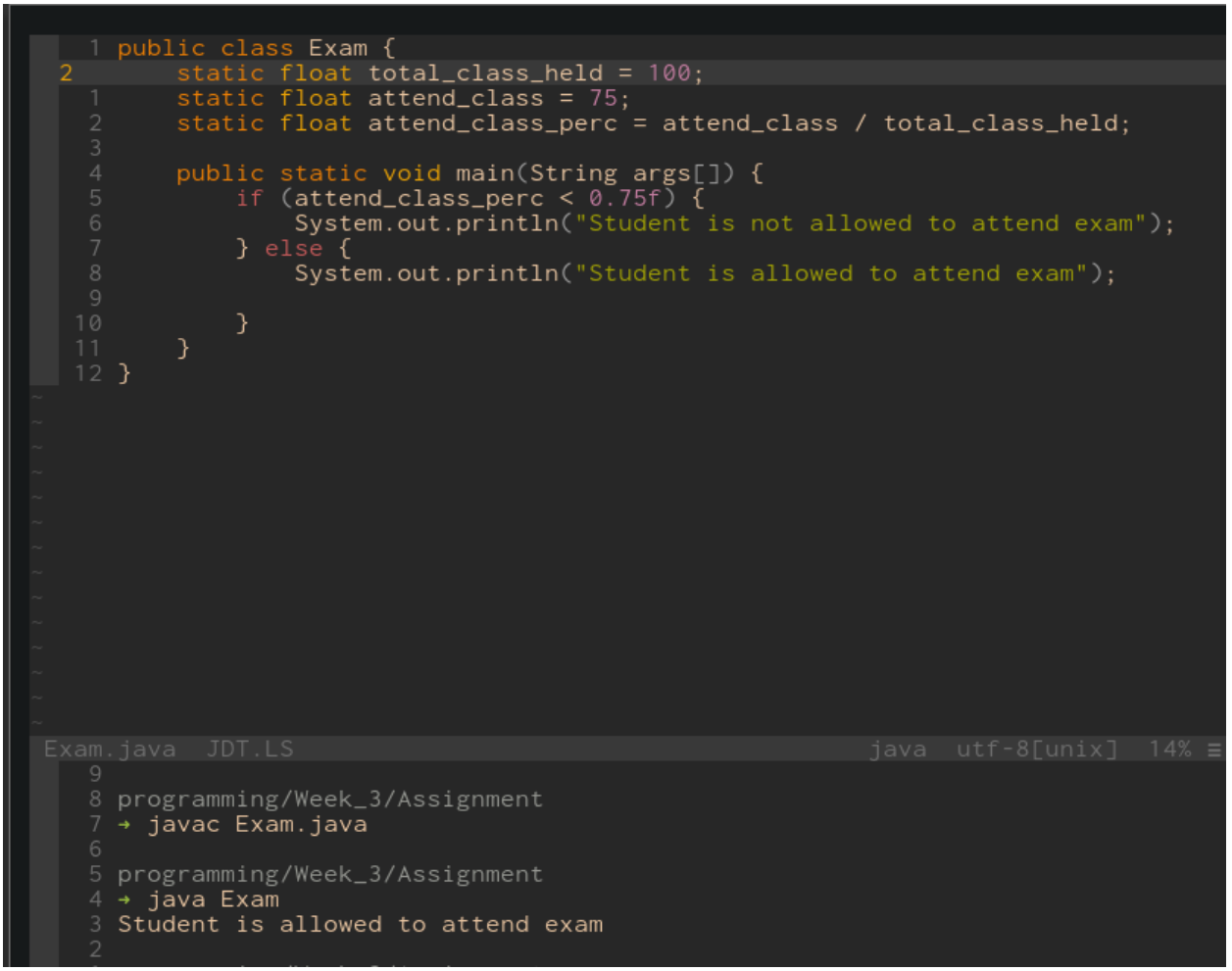
Number of classes held

Number of classes attended.

And print

percentage of class attended

Is the student is allowed to sit in exam or not.



```
public class Exam {
    static float total_class_held = 100;
    static float attend_class = 75;
    static float attend_class_perc = attend_class / total_class_held;

    public static void main(String args[]) {
        if (attend_class_perc < 0.75f) {
            System.out.println("Student is not allowed to attend exam");
        } else {
            System.out.println("Student is allowed to attend exam");

        }
    }
}
```

```
Exam.java  JDT.LS                                    java  utf-8[unix]  14%

programming/Week_3/Assignment
→ javac Exam.java

programming/Week_3/Assignment
→ java Exam
Student is allowed to attend exam
```

5. Modify the above question to allow a student to sit if he/she has some kind of health problem. Tell the program if he/she has a health problem or not ('Y' or 'N') and print accordingly.

```
 4 public class Health {
 3     static float total_class_held = 100;
 2     static float attend_class = 60;
 1     static float attend_class_perc = attend_class / total_class_held;
 5     static char unhealthy = 'N';
 1
 2     public static void main(String args[]) {
 3         if (attend_class_perc < 0.75f && unhealthy == 'N') {
 4             System.out.println("Student is not allowed to attend exam");
 5         } else {
 6             System.out.println("Student is allowed to attend exam");
 7
 8         }
 9     }
10 }
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Health.java  JDT.LS                                    java  utf-8[unix]  33% ≡ 5
 9
 8 programming/Week_3/Assignment
 7 → javac Health.java
 6
 5 programming/Week_3/Assignment
 4 → java Health
 3 Student is not allowed to attend exam
 2
```

6. If

x = 2

y = 5

z = 0

then find values of the following expressions:

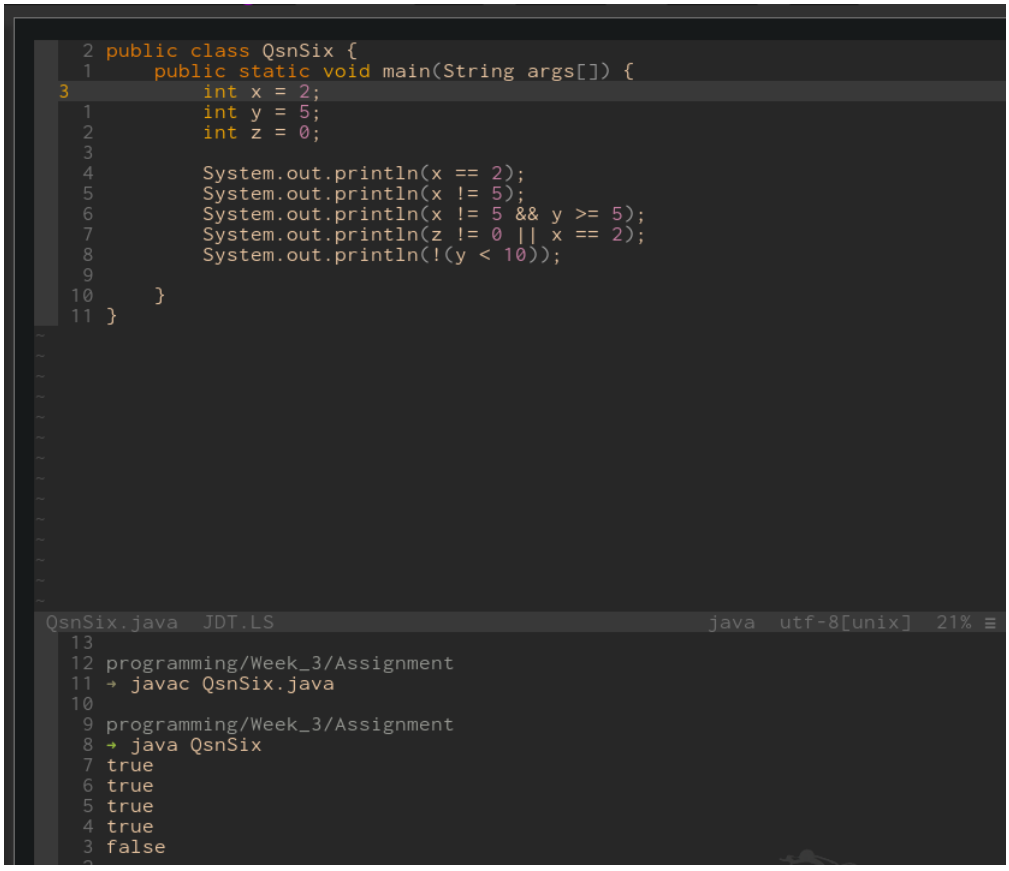
a. x == 2

b. x != 5

c. x != 5 && y >= 5

d. z != 0 || x == 2

e. !(y < 10)



```
 2 public class QsnSix {
 1     public static void main(String args[]) {
 3         int x = 2;
 1         int y = 5;
 2         int z = 0;
 3
 4         System.out.println(x == 2);
 5         System.out.println(x != 5);
 6         System.out.println(x != 5 && y >= 5);
 7         System.out.println(z != 0 || x == 2);
 8         System.out.println(!(y < 10));
 9
10     }
11 }
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QsnSix.java  JDT.LS                                  java  utf-8[unix]  21% ≡
13
12 programming/Week_3/Assignment
11 → javac QsnSix.java
10
 9 programming/Week_3/Assignment
 8 → java QsnSix
 7 true
 6 true
 5 true
 4 true
 3 false
```

7. Given this class:

```
public class WorkshopThree {
 public static void
main(String[] args) {
byte b = 3;
 int i = 0;
 switch(b) {
 case 3 | 4 : i = i + 4;
// line n1  case 2 |
3 : i = i + 2;
 }
 System.out.println(i);
 }
}
```

What is the result? Choose one.

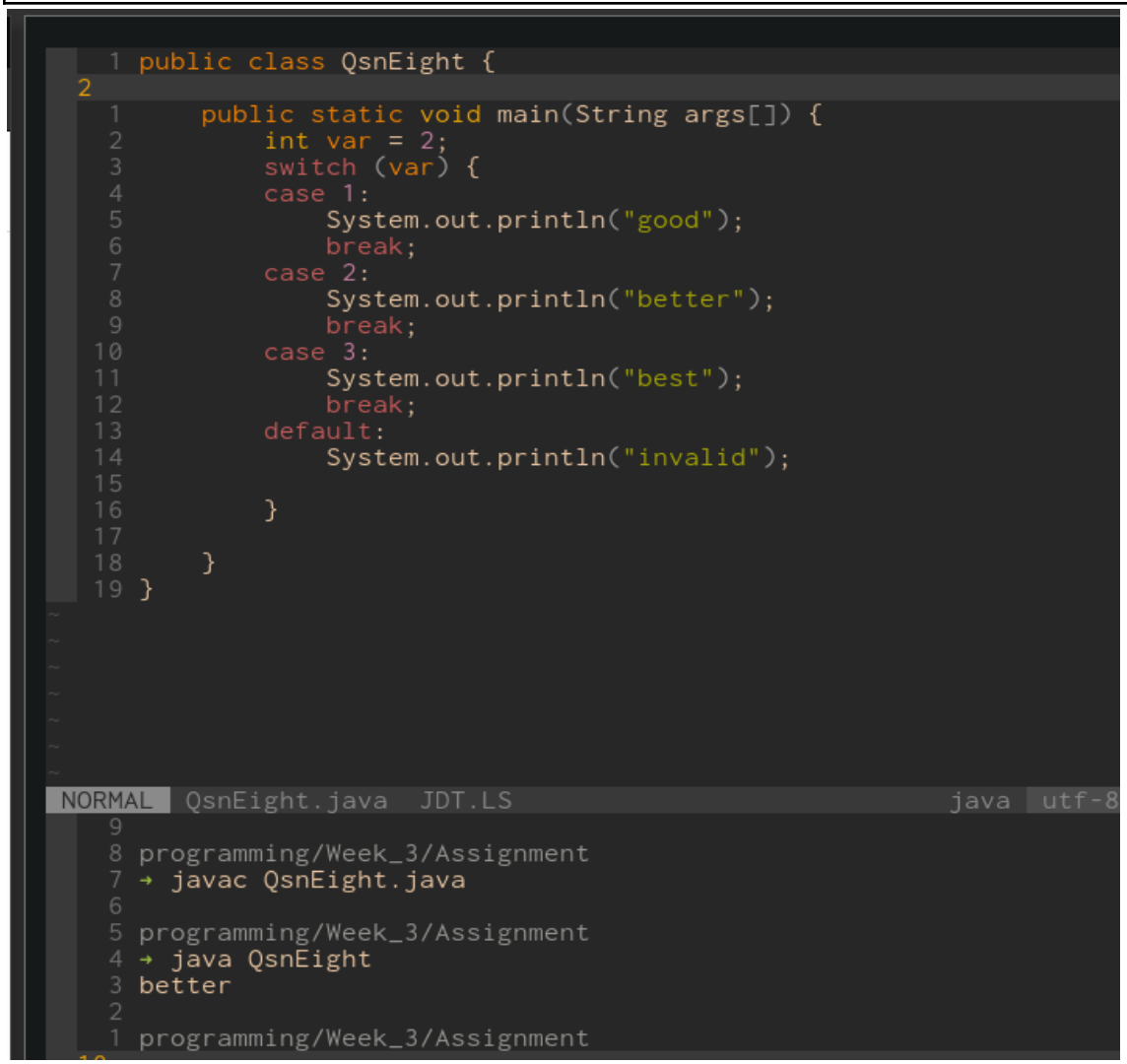
A. 0
B. 2
C. 4
D. 6
E. Compilation fails at line n1.


public class WorkshopThree {
public static void main(String[] args) {
byte b = 3;
int i = 0;
switch (b) {
case 3 | 4:
i = i + 4; // line n1
case 2 | 3:
i = i + 2;
}
System.out.println(i);
}
}
WorkshopThree.java JDT.LS java
programming/Week_3/Assignment
→ javac WorkshopThree.java
programming/Week_3/Assignment
→ java WorkshopThree
2
programming/Week_3/Assignment

ANS: B

8. Convert the following if-else-if construct into switch case:

```
if(var == 1)
System.out.println("good");
else if(var == 2)
System.out.println("better");
else if(var == 3)
System.out.println("best");
else
System.out.println("invalid");
```



9. Rewrite the following program code using suitable ‘if’ command.

```
switch(m){
case 0:
 x=x+2;
 System.out.println(“X=” x);
 break;
case 1:
 x=x+4;
 System.out.println(“X=” x);
 break;
case 2:
 x=x+6;
 System.out.println(“X=” x);
 break; }
```

```
1  public class QsnNine {
2
1      public static void main(String args[]) {
2          int m = 2;
3          int x = 0;
4          if (m == 0)
5              x += 2;
6          else if (m == 1)
7              x += 4;
8          else if (m == 2)
9              x += 6;
10
11         System.out.println("X=" + x);
12
13     }
14 }
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QsnNine.java  JDT.LS                                          java
9
8  programming/Week_3/Assignment
7  → javac QsnNine.java
6
5  programming/Week_3/Assignment
4  → java QsnNine
3  X=6
2
1  programming/Week_3/Assignment
```