**Computer Language 2022**

**Assignment #5**

**Due: 10/May 23:59:59**

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**1) Carefully read the following code and descriptions.**

|  |
| --- |
| import java.util.Scanner;  public class InputException {  public static void main(String[] args) {  Scanner scanner = new Scanner(System.*in*);  System.*out*.println("Input three integer numbers!");  int sum=0, n=0;  for(int i = 0; i<3; i++) {  System.*out*.print(i+">>");  n = scanner.nextInt(); *// Exception occurs when invalid input given* sum += n;  }  System.*out*.println("Sum is " + sum);  scanner.close();  } } |

**- The above program is crashed when a user types invalid type input (e.g., “jinwoo”, 130.130, etc). Use try/catch clause to avoid such exception/crash and finally get the result.**

**- When invalid type data given, your program must print "Not integer number. Please input again!" and keep waiting for a new input number from the user.**

**- When your program takes 3 valid integer input data from the user, the result should be computed and printed out.**

**Example Output)**

텍스트이(가) 표시된 사진

자동 생성된 설명

텍스트이(가) 표시된 사진

자동 생성된 설명

**Your code:**

import java.util.InputMismatchException;  
import java.util.Scanner;  
  
public class InputException extends Throwable {  
 public static void main(String[] args) {  
 Scanner scanner = new Scanner(System.*in*);  
 System.*out*.println("Input three integer numbers!");  
 int sum = 0, n = 0;  
 for (int i=0; i<3; i++) {  
 System.*out*.print(i+">>");  
 try {  
 n = scanner.nextInt();  
 }  
 catch (InputMismatchException e) {  
 System.*out*.println("Not integer number. Please input again!");  
 scanner.next();  
 n = 0;  
 i--;  
 }  
 sum = sum + n;  
 }  
 System.*out*.println("Sum is " + sum);  
 scanner.close();  
 }  
}

**Your result (screenshot):**

**텍스트이(가) 표시된 사진

자동 생성된 설명**

**텍스트이(가) 표시된 사진

자동 생성된 설명**

**Your explanation on the code:**

**Use try statement to handling exception in “n = scanner.nextInt()”.**

**If user insert values except integer, then this would lead to occur InputMismatchException.**

**So, I added catch statement with InputMismatchException and wrote some commands which are printing error message, preparing to get value(scanner.next(), n=0 & i--).**

**scanner.next() is used for moving scanner to get correct value again.**

**n = 0 🡪 I tried to get summation of the input value, but the sum variable is incorrect. So, I initialize n=0. To remove incorrect operation.**

**i-- 🡪 it functions as coming back to get value again.**

**2) Carefully read the following code and descriptions.**

public class EqualsEx {  
 public static void main(String[] args) {  
 Rect a = new Rect(2,3);  
 Rect b = new Rect(3,2);  
 Rect c = new Rect(3,4);  
 if(a.equals(b))  
 System.*out*.println("a is equal to b");  
 if(a.equals(c))  
 System.*out*.println("a is equal to c");  
 if(b.equals(c))  
 System.*out*.println("b is equal to c");  
 }  
}  
  
class Rect {  
 private int width;  
 private int height;  
 public Rect(int width, int height) {  
 this.width = width;  
 this.height = height;  
 }  
}

**- The above program prints out nothing because Rect instances point different addresses.**

**- Improve Rect class to compare the instance identity based on the area. In other words, Rect with the width of 2 and the height of 3 (here, its area is 6) should be identical to Rect with the width of 3 and the height of 2 (area of this rect is also 6!).**

**Example Output)**

텍스트이(가) 표시된 사진

자동 생성된 설명

**Your code:**

class Rect {  
 private int width;  
 private int height;  
 public Rect(int width, int height) {  
 this.width = width;  
 this.height = height;  
 }  
 public boolean equals(Object obj) {  
 Rect r = (Rect) obj;  
 if (r.width\*r.height == this.width\*this.height) return true;  
 else return false;  
 }  
  
}  
  
public class EqualsEx {  
 public static void main(String[] args) {  
 Rect a = new Rect(2,3);  
 Rect b = new Rect(3,2);  
 Rect c = new Rect(3,4);  
  
 if (a.equals(b)) {  
 System.*out*.println("a is equal to b");  
 }  
 if (a.equals(c)) {  
 System.*out*.println("a is equal to c");  
 }  
 if (b.equals(c)) {  
 System.*out*.println("b is equal to c");  
 }  
 }  
}

**Your result (screenshot):**

**텍스트이(가) 표시된 사진

자동 생성된 설명**

**Your explanation on the code:**

**I added equals() method to compare the area of rectangles with a instance and b instance in a.equals(b) syntax.**

**obj given by user is converted to Rect type instance and compare its area with the other object, in the a.equals(b) syntax, a is other object and b is given object.**

**equlas() method would return Boolean type value whether the area is the same or not. Using this feature, I made some conditional statement which is print out both objects' area is the same or not.**

**ITM Engineering Co., Ltd. – Part I**

* ITM Engineering Co., Ltd. intends to develop a system for managing employee information. As the First step, we need to display menus and handle user inputs.
  + Use the source code provided.
  + Refer to the execution result screen at the bottom.
* Menu (Refer to MainMenuEnum enum)

1. Register → Register a new employee (define RegisterMenuEnum enum)

11. Registration of full-time employees

12. Registration of part-time employees

19. Back

2. Search → Search for employees (define SearchMenuEnum enumeration)

21. Full search

29. Back

9. Exit → End Program (until user types 9, the program continues)

* Requirements

1. Improve EmployeeTest class
2. Define RegiseterMenuEnum (menus package)
3. Define SearchMenuEnum (menus package)
4. No functions working yet. Only menu transition is possible.

* Expected output)

텍스트이(가) 표시된 사진

자동 생성된 설명

테이블이(가) 표시된 사진

자동 생성된 설명

텍스트이(가) 표시된 사진

자동 생성된 설명

- For this question, make a zip file that contains your IntelliJ project folder

- Therefore, in this week, you need to submit the following things:

1) WORD document for question No.1 & No.2

2) zipped file for question No.3