컴퓨터프로그래밍2 과제3

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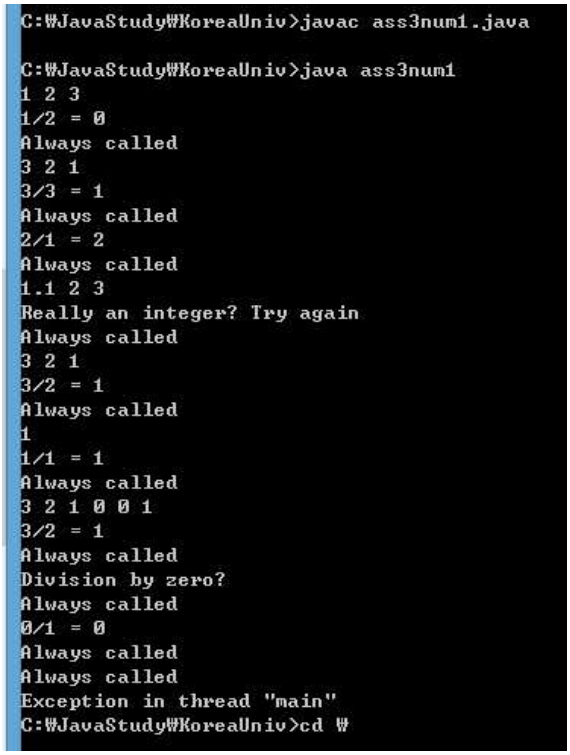
1. 1번 문항

```
import java.util.Scanner;
import java.util.InputMismatchException;
    public class ass3num1 {
        public static void main(String[] args) {
            Scanner input = new Scanner(System.in);
            for(;;) {
            try {
                int x = input.nextInt();
                int y = input.nextInt();
            System.out.format("%d/%d = %d₩n", x, y, x/y);
            }
            catch (InputMismatchException ex) {
            System.out.println("Really an integer? Try again");
            input.nextLine();
            }

            catch (ArithmeticException ex) {
            System.out.println("Division by zero?");
            }

            finally {
            System.out.println("Always called");
            }
        }
    }
}
```



2. 2번 문항

Linear Equation for a 2 X 2 System of linear equations

$$ax + by = e$$
$$cx + dy = f$$

$$x = \frac{ed - bf}{ad - bc} \quad y = \frac{af - ec}{ad - bc}$$

2 (a) UML diagram for the class

Calss Name : LinearEquation

Data Fields :

a is _

b is _

c is _

d is _

e is _

f is _

Methods:

isSolvable

getX

getY

LinearEquation object 1
Data Fields :
 a is _

LinearEquation object 1
Data Fields :
 b is _

LinearEquation object 1
Data Fields :
 c is _

LinearEquation object 1
Data Fields :
 d is _

LinearEquation object 1
Data Fields :
 e is _

LinearEquation object 1
Data Fields :
 f is _

2 (b)

```
public class LinearEquation {
	private double a;
	private double b;
	private double c;
	private double d;
	private double e;
	private double f;

	LinearEquation(double a, double b, double c, double d, double e, double f) {
			this.a = a;
			this.b = b;
			this.c = c;
```

```
                this.d = d;
                this.e = e;
                this.f = f;
        }

        double getA() {
            return a;
        }

        double getB() {
            return b;
        }

        double getC() {
            return c;
        }

        double getD() {
            return d;
        }

        double getE() {
            return e;
        }

        double getF() {
            return f;
        }

        boolean isSolvable() {
            return a * d - b * c != 0;
        }

        double getX() {
            return (e * d - b * f) / (a * d - b * c);
        }
        double getY() {
            return (a * f - e * c) / (a * d - b * c);
        }
}
```

2. (c)

```
class LinearEquation {
	private double a;
	private double b;
	private double c;
	private double d;
	private double e;
	private double f;

	LinearEquation(double a, double b, double c, double d, double e, double f) {
			this.a = a;
			this.b = b;
			this.c = c;
			this.d = d;
			this.e = e;
			this.f = f;
	}

	double getA() {
		return a;
	}

	double getB() {
		return b;
	}

	double getC() {
		return c;
	}

	double getD() {
		return d;
	}

	double getE() {
		return e;
	}

	double getF() {
		return f;
	}
```

```
    boolean isSolvable() {
        return a * d - b * c != 0;
    }

    double getX() {
        return (e * d - b * f) / (a * d - b * c);
    }
    double getY() {
        return (a * f - e * c) / (a * d - b * c);
    }
}

class TestLE {
    public static void main(String [] args) {
        LinearEquation le = new LinearEquation(9.0, 4.0, 3.0, -5.0, -6.0, -21.0);
            if (le.isSolvable())
            System.out.println("x = " + le.getX() + ", y = " + le.getY());
            else
            System.out.println("The equation has no solution");

        le = new LinearEquation(1.0, 2.0, 2.0, 4.0, 4.0, 5.0);
            if (le.isSolvable())
            System.out.println("x = " + le.getX() + ", y = " + le.getY());
            else
            System.out.println("The equation has no solution");
    }
}
```

결과 :

```
x = -2.0, y = 3.0
The equation has no solution
```