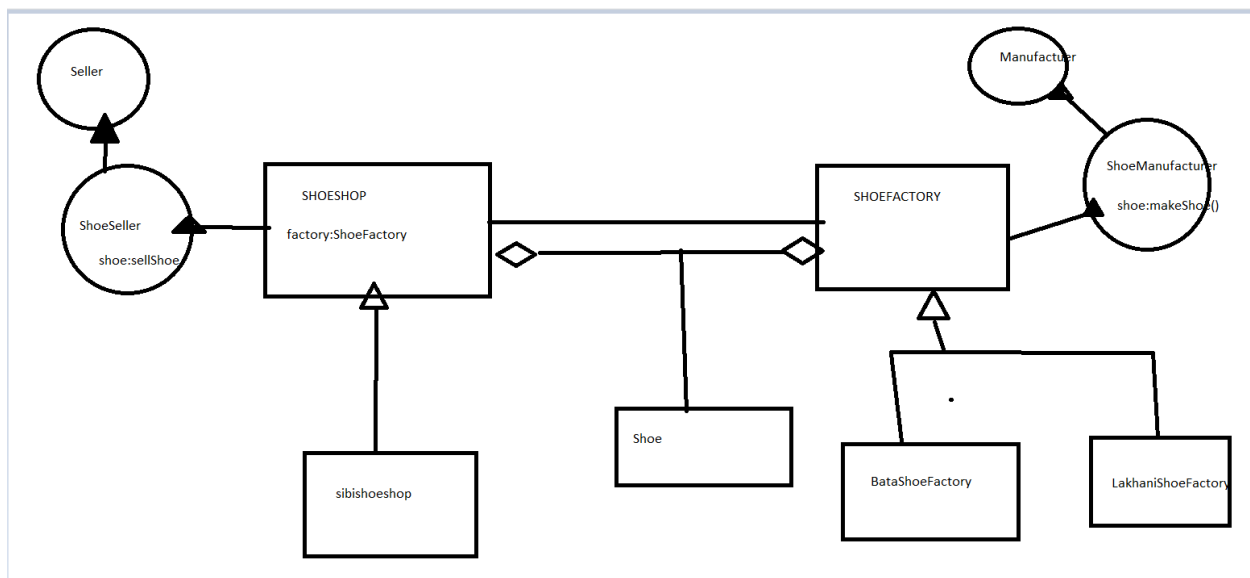# Day 9

📅 Created	@Mar 18, 2021
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☰ Tags	Java

Interface

- Represented by Circle

Exception Handling

- System
    - JAVA throw
    - Unchecked (Runtime)
        - try/catch/finally - Should be avoided
    - Checked
        -

- Bothe should be avoided
-
- Custom
  - User throw

```java
package ga.veee.day9;

public class ExceptionDemo {
    public static void main(String[] args) {
        System.out.println("before exception ");
        try {

            int i = 1 / Integer.parseInt(args[0]);

        } catch (ArithmeticException e) {
            System.out.println("Number is zero..:" + e);
        } catch (NumberFormatException ne) {
            System.out.println("Number is a character..:" + ne);
        } catch (ArrayIndexOutOfBoundsException ex) {
            System.out.println("unknown exception........." + ex);
        }
        System.out.println("after exception..");
    }
}
```

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Checked Exception

```java
package ga.veee.day9;

import java.lang.reflect.Field;

public class ExceptionDemo2 {
    public static void main(String[] args) throws Exception {
        String s = "Hello World";
        boolean yes = false;
        String name = "str";
        Field[] f = s.getClass().getFields();
        for (Field field : f) {
            if (field.getName().equals(name)) ;
            {
```

```
                    yes = true;
                }
            }
            if (yes) {
                Field fields = s.getClass().getField("str");
            } else {
                System.out.println("Field not there");
            }
        }
    }
```

Custom Exception

throw - Explicit

throws - Bypass

Visitor Pattern

```
package ga.veee.day9;

import java.util.Scanner;

public class ExceptionHandlingDemo {
    public static void main(String[] args) throws Exception {
        Dog dog = new Dog();
        Child child = new Child();
        Scanner scan = new Scanner(System.in);
        System.out.println("Please enter the item class..:");
        String itemClass = scan.next();
        Item ic = (Item) Class.forName(itemClass).getConstructor().newInstance();
        child.playWithDog(dog, ic);
    }
}

abstract class DogExceptions extends Exception {
    public abstract void visit(Handler911 handler911);
}

class DogBiteException extends DogExceptions {
    String msg;

    public DogBiteException(String msg) {
        this.msg = msg;
    }

    @Override
    public String toString() {
        return this.msg;
    }

    @Override
    public void visit(Handler911 handler911) {
        handler911.handle(this);
```

```java
        }
    }

    class DogBarkException extends DogExceptions {
        String msg;

        public DogBarkException(String msg) {
            this.msg = msg;
        }

        @Override
        public String toString() {
            return this.msg;
        }

        @Override
        public void visit(Handler911 handler911) {
            handler911.handle(this);
        }
    }

    class DogHappyException extends DogExceptions {
        String msg;

        public DogHappyException(String msg) {
            this.msg = msg;
        }

        @Override
        public String toString() {
            return this.msg;
        }

        @Override
        public void visit(Handler911 handler911) {
            handler911.handle(this);
        }
    }

    abstract class Item {
        public Item() {
            // TODO Auto-generated constructor stub
        }

        public abstract void execute() throws DogExceptions;
    }

    class StickItem extends Item {
        public StickItem() {
            // TODO Auto-generated constructor stub
        }

        @Override
        public void execute() throws DogExceptions {
            throw new DogBiteException("you beat i bite.....");
        }
```

```java
    }

class StoneItem extends Item {
    public StoneItem() {
        // TODO Auto-generated constructor stub
    }

    @Override
    public void execute() throws DogExceptions {
        throw new DogBarkException("you throw I bark.....");
    }
}
//ga.veee.day9.BiscuitItem
class BiscuitItem extends Item {
    public BiscuitItem() {
        // TODO Auto-generated constructor stub
    }

    @Override
    public void execute() throws DogExceptions {
        throw new DogHappyException("I love biscuits........");
    }
}

class Dog {
    public void play(Item item) throws DogExceptions {
        item.execute();
    }
}

class Child {
    public void playWithDog(Dog dog, Item item) {
        try {
            dog.play(item);
        } catch (DogExceptions de) {
            de.visit(new Handler911Impl());
        }
    }
}

//To handle exception - you should write a seperate handler class
interface Handler911 {
    public void handle(DogBiteException dbe);

    public void handle(DogBarkException dre);

    public void handle(DogHappyException dre);
}

class Handler911Impl implements Handler911 {
    @Override
    public void handle(DogBarkException dre) {
        System.out.println("handling logic is written....dont worry...it is just barking......");
    }

    @Override
```

```java
    public void handle(DogBiteException dbe) {
        System.out.println("ambulance is on the way...........dont be panic..........");
    }

    @Override
    public void handle(DogHappyException dhe) {
        System.out.println("the dog is happy,, enjoying the biscuits......");
    }
}
```

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