

CISC 3115 TY2

Declaring and Throwing Exceptions

Hui Chen

Department of Computer & Information Science

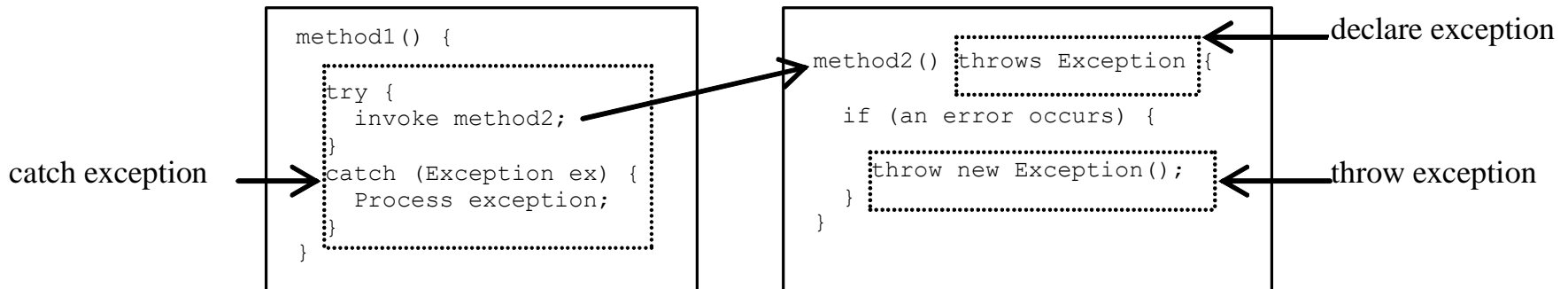
CUNY Brooklyn College

Outline

- Declaring exception
- Throwing exception
- Catching exception
- Rethrowing exception
- The finally clause

The Big Picture

- Declaring, Throwing, and Catching Exceptions



Declaring Exception

- Every method must state the types of checked exceptions it might throw.

- Example

```
public void myMethod() throws IOException { ...  
}
```

- One may declare one or more exceptions to be thrown

- Example

```
public void myMethod() throws IOException, OtherException { ...  
}
```

Throwing Exceptions

- One can create an instance of an appropriate exception type and throw it in the method.
- Examples

```
throw new TheException();
```

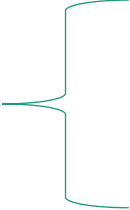
Or

```
TheException e = new TheException();  
throw e;
```


where TheException is a subclass of Throwable.

Declaring and Throwing Exceptions: Example

```
/** Set a new radius */  
public void setRadius(double newRadius)  
    throws IllegalArgumentException {  
    if (newRadius >= 0) {  
        radius = newRadius;  
    } else {  
        throw new IllegalArgumentException(  
            "Radius cannot be negative");  
    }  
}
```



Declaring



Throwing

Catching Exception

- There are a few variations of try ... catch ...
- Frequently used:

```
try { // Statements that may throw exceptions
} catch (Exception1 exVar1) { handler for exception1;
} catch (Exception2 exVar2) { handler for exception2;
} ... // more catch
catch (ExceptionN exVarN) {
    handler for exceptionN;
}
```

Questions

- Mechanism to declaring, throwing, and catching/handling exceptions

Exercise 1

- Following the lecture, design and implement a `DivideByZero` class where
 - Write a quotient method that takes two parameters and perform division of the two and state the exception it throws when the denominator is 0
 - Write another method that invokes the quotient method and catch and handle the exception the method throws
 - Make sure that you create directories for this exercise and submit it as part of the journal