Exceptions

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COS20007 Object Oriented Programming

SWINBURNE UNIVERSITY OF TECHNOLOGY

Libraries provide a wide range of useful abstractions

You can get a text representation to print to the Terminal
Will be used to represent a playing card
Use this template to create Card objects
a Card can do ...
a Card 'Knows' ...
Cards can be face up or face down

}

Class that do ...

Developers create applications, building on the available class libraries

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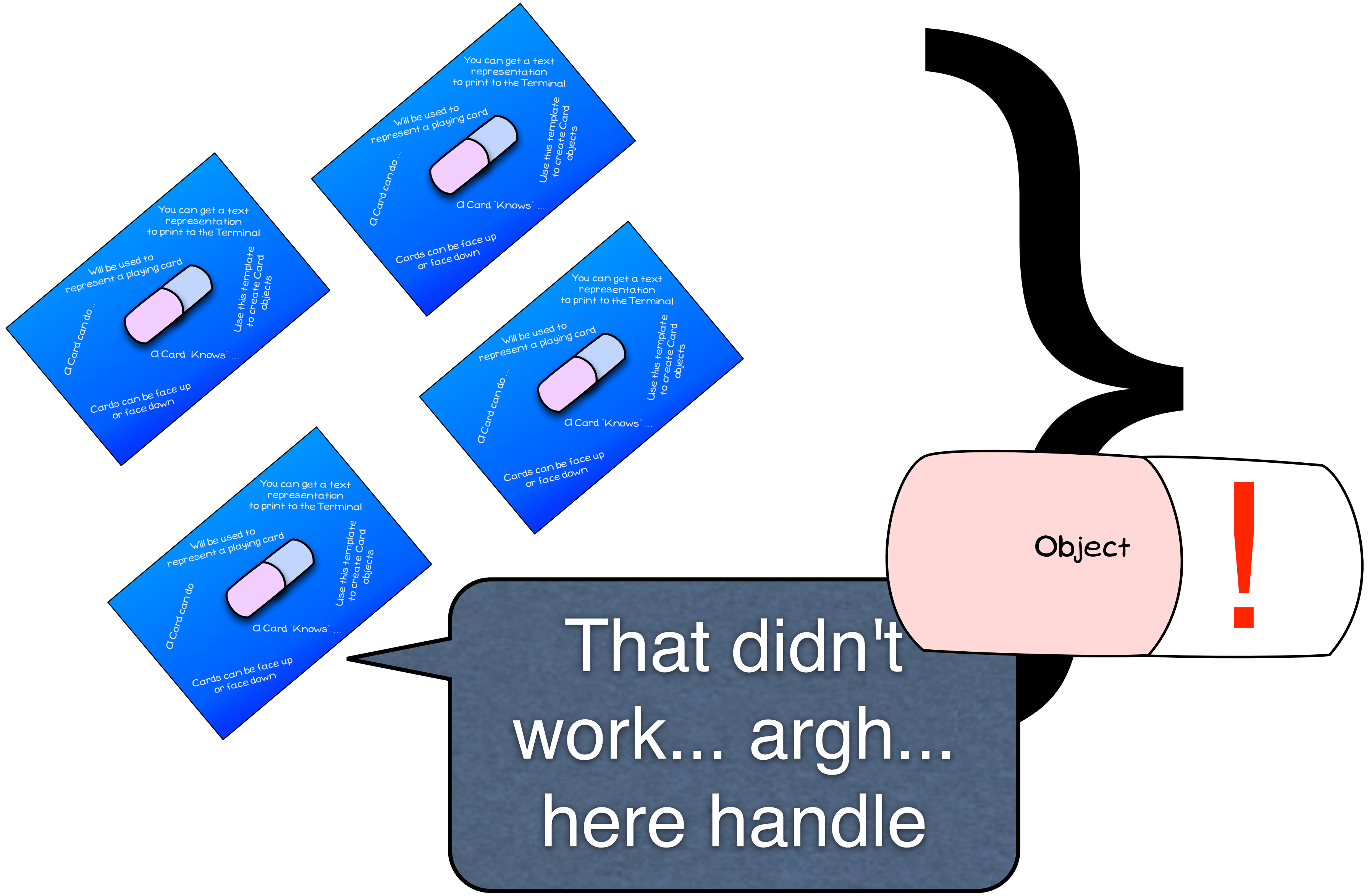
Use these classes to help you build...

Many libraries use exceptions to report errors they encounter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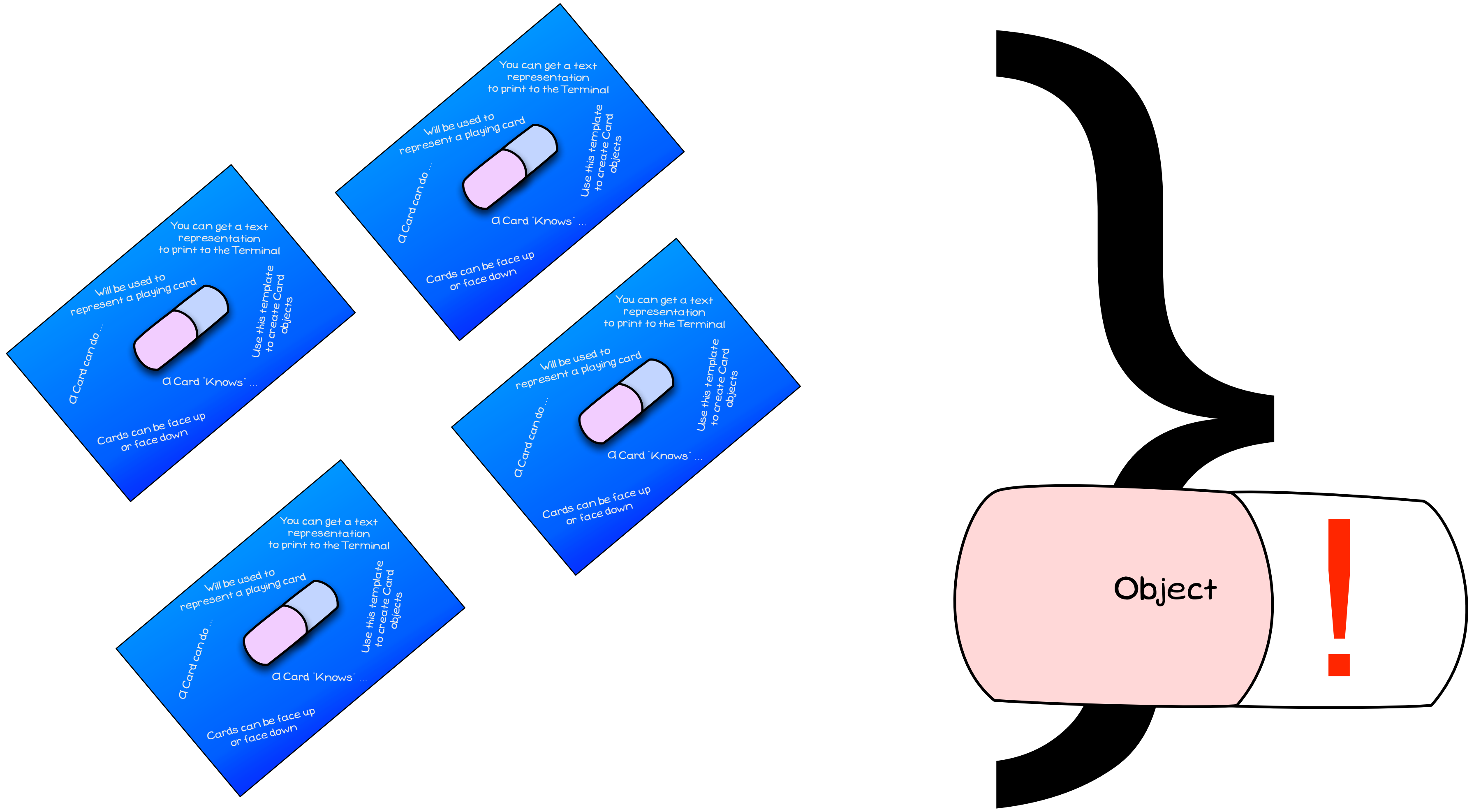
Object
!
That didn't work... argh... here handle

To use these libraries you need to learn how to handle these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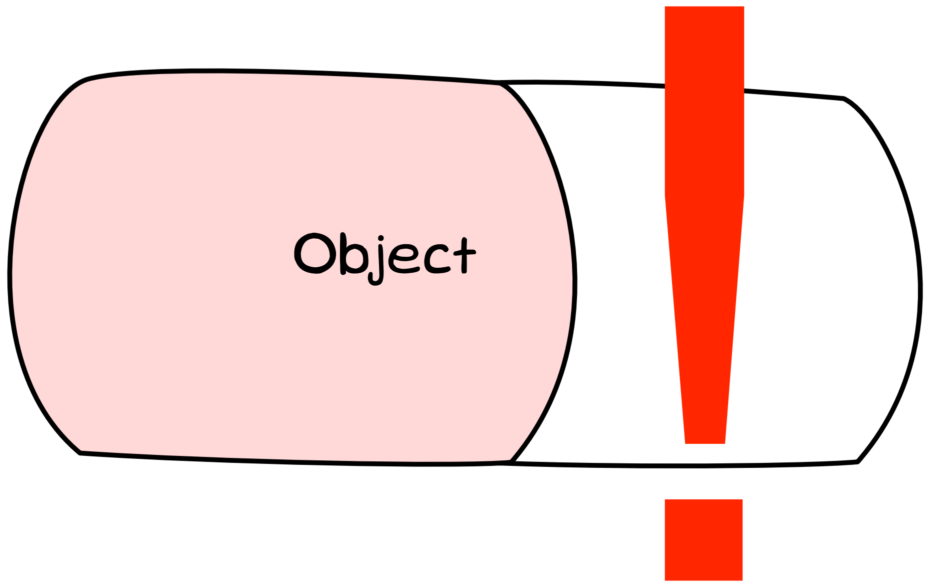
Object
!

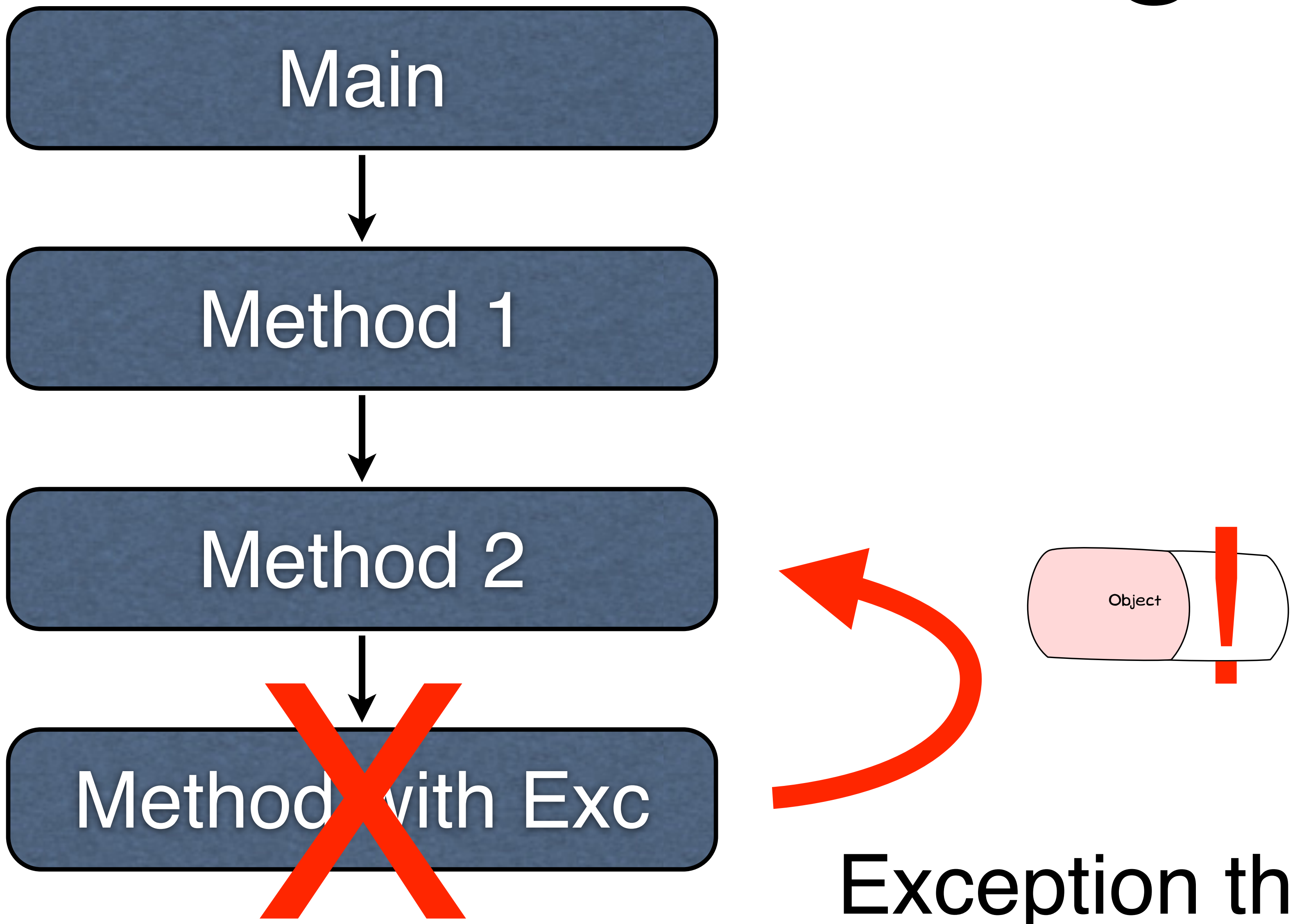
Calm down...
I'm sure we can handle this...

Exceptions provide an alternate way of ending method calls

Exceptions are objects that contain an error message



Throwing an exception causes methods to terminate until it is caught…



Main

Method 1

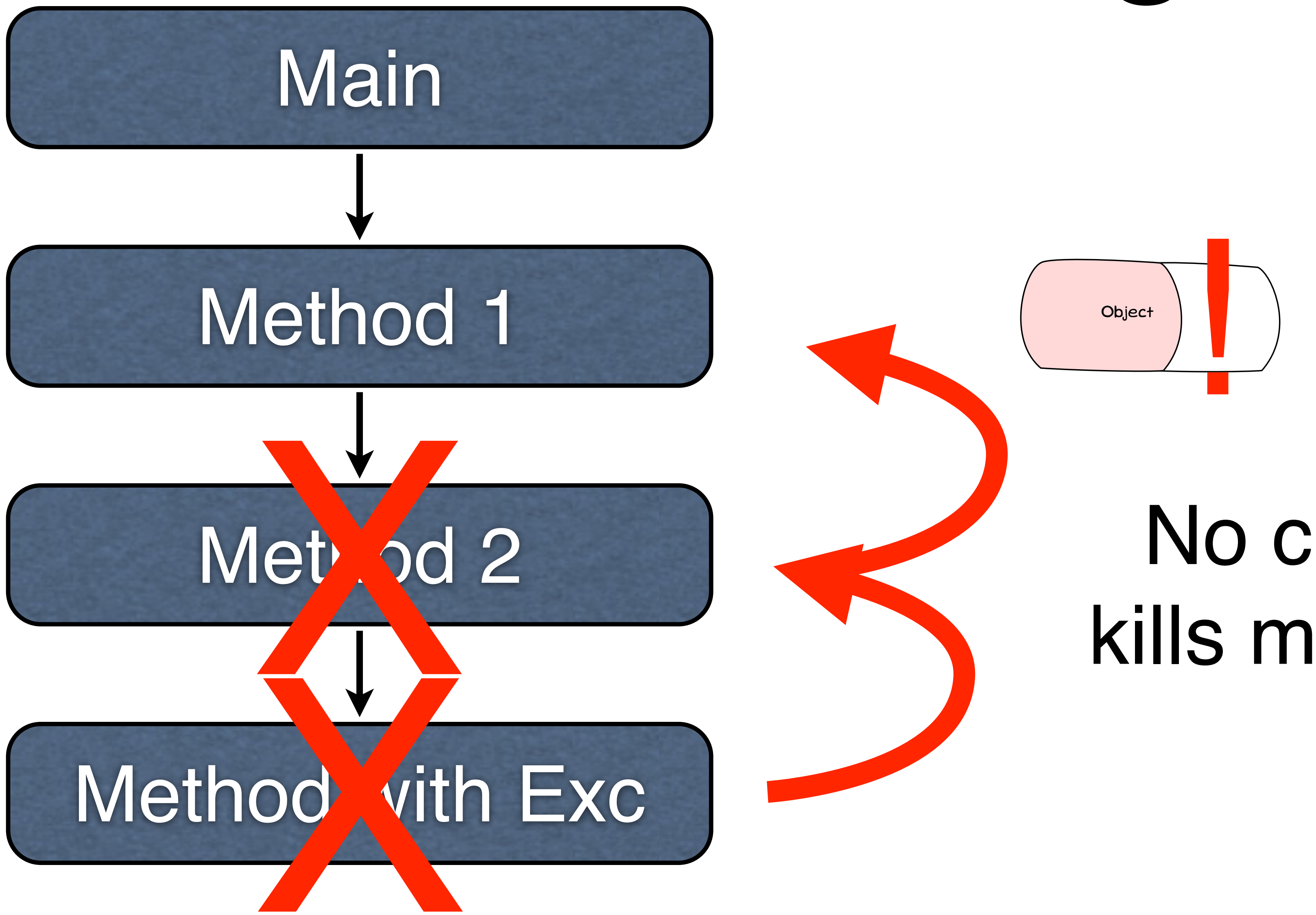
Method 2

Method with Exc

Object

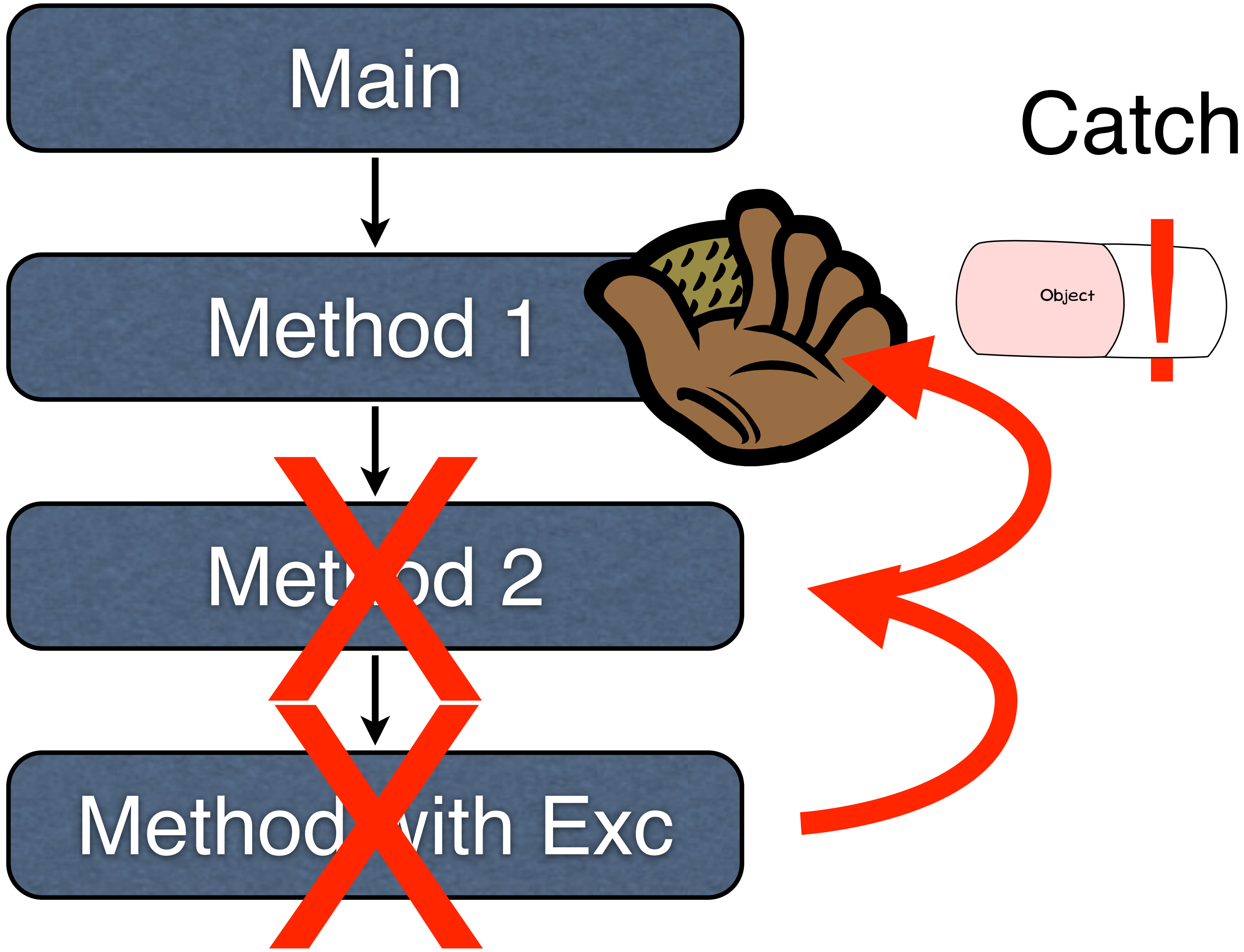
Exception thrown

Throwing an exception causes methods to terminate until it is caught...



No catch...
kills method 2

When dealing with exceptions, try to perform the code and catch any exceptions



Catch handles the exception

```
try
{
    ...
}
catch (System.Exception e)
{
    // cleanup
    ...
}
```

Avoid using exceptions for known error conditions

Try to fail gracefully, think of exceptions as a child having a tantrum

Only use exceptions in exceptional circumstances

Errors you handle

Exceptions are for things you didn't think of

Watch out for exceptions thrown from libraries you use

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Please try to ...

Learn to deal with exceptions

Make sure you catch all possible exceptions (in C#) ...

```
/// <exception cref="IllegalStateException">Why it's thrown.</exception>
public void Add()
{
    int v1, v2, result;

    if ( _operands.Length < 2 )
    {
        throw new IllegalStateException("Add requires at least 2 operands.");
    }

    v1 = pop();
    v2 = pop();
    result = v1 + v2;
    push(result);
}
```

I may throw this exception

Use catch block to deal with the error

```
try
{
    ...
}
catch (System.Exception e)
{
    // cleanup
    ...
}
```

Ok... it threw an exception. I need to clean up this mess!

Use finally blocks to perform code regardless of how things end up

If this starts...

```
try
{
    ...
}
catch (Exception e)
{
    // cleanup
    ...
}
finally
{
    ...
}
```

This will run when it ends... exception or not!

Exceptions are one way of reporting errors in your code

Learn to handle others' exceptions, and report errors gracefully yourself

Exceptions: objects can have tantrums too!