

# Mainstream Java

## Understanding Exceptions

# Exceptions

Exception in thread "main" java.lang.StringIndexOutOfBoundsException:  
String index out of range: 82

at java.lang.String.charAt(String.java:646)  
at Test.doStuff(Test.java:5)  
at Test.main(Test.java:8)

- Exceptions: you've probably seen them...
  - But what do they mean?
  - How do you use them?

# Exceptions

Exception in thread "main" java.lang.StringIndexOutOfBoundsException:  
String index out of range: 82

at java.lang.String.charAt(String.java:646)  
at Test.doStuff(Test.java:5)  
at Test.main(Test.java:8)

- Exceptions: something went wrong
  - Problems happen in programs!

# Exceptions

Exception in thread "main" java.lang.StringIndexOutOfBoundsException:  
String index out of range: 82

at java.lang.String.charAt(String.java:646)  
at Test.doStuff(Test.java:5)  
at Test.main(Test.java:8)

- Unhandled exceptions:
  - Crash program
  - Print stack trace: tells you about problem

# Exceptions

**Exception** in thread "main" java.lang.StringIndexOutOfBoundsException:

String index out of range: 82

at java.lang.String.charAt(String.java:646)

at Test.doStuff(Test.java:5)

at Test.main(Test.java:8)

- Unhandled exceptions:
  - Crash program
  - Print stack trace: tells you about problem



# Exceptions

Exception in thread "main" java.lang.StringIndexOutOfBoundsException:  
String index out of range: 82  
at java.lang.String.charAt(String.java:646)  
at Test.doStuff(Test.java:5)  
at Test.main(Test.java:8)

- Unhandled exceptions:
  - Crash program
  - Print stack trace: tells you about problem

# Exceptions

Exception in thread "main" `java.lang.StringIndexOutOfBoundsException:`

String index out of range: 82

at java.lang.String.charAt(String.java:646)

at Test.doStuff(Test.java:5)

at Test.main(Test.java:8)

- Unhandled exceptions:
  - Crash program
  - Print stack trace: tells you about problem

# Exceptions

Exception in thread "main" java.lang.StringIndexOutOfBoundsException:

String index out of range: 82

at java.lang.String.charAt(String.java:646)

at Test.doStuff(Test.java:5)

at Test.main(Test.java:8)

- Unhandled exceptions:
  - Crash program
  - Print stack trace: tells you about problem



# Exceptions

Exception in thread "main" java.lang.StringIndexOutOfBoundsException:  
String index out of range: 82

at java.lang.String.charAt(String.java:646)

at Test.doStuff(Test.java:5)

at Test.main(Test.java:8)

- Unhandled exceptions:
  - Crash program
  - Print stack trace: tells you about problem

# Exceptions

Exception in thread "main" java.lang.StringIndexOutOfBoundsException:  
String index out of range: 82

at java.lang.String.charAt(String.java:646)

at Test.doStuff(Test.java:5)

at Test.main(Test.java:8)

- Unhandled exceptions:
  - Crash program
  - Print stack trace: tells you about problem

# Exceptions

Exception in thread "main" java.lang.StringIndexOutOfBoundsException:  
String index out of range: 82

at java.lang.String.charAt(String.java:646)

at Test.doStuff(Test.java:5)

at Test.main(Test.java:8)

- Unhandled exceptions:
  - Crash program
  - Print stack trace: tells you about problem

# Exceptions

**Handling exceptions:** try, catch, finally

**Exception propagation:** when you do not handle

- May require declaring “throws”

**Throwing exceptions:** when you discover a problem

- **Unhandled** exceptions: print stack trace
  - Tells you about problem