

# Converting between Strings and Numbers Solutions

# Converting between strings and numbers

- Write a simple program which uses `std::to_string()` to convert a number to an `std::string` object whose data contains the number

# Converting Strings to Integers

- Write a simple program which uses `std::stoi()` to convert the data in an `std::string` object to an `int`
- What happens if there are characters in the string which are not digits?
  - Leading whitespace characters are ignored
  - Otherwise, non-digit characters cause the conversion to stop
- Write a simple program to illustrate your answer

# Error Handling

- How can we detect conversion errors with `std::stoi`?
  - `std::stoi` has an optional second argument which is passed by address
  - When the call returns, this will contain the number of characters processed
  - If the entire string was successfully converted, this will contain the number of characters in the string
  - If only part of the string was converted, this will contain the index of the first non-numeric character
  - If the conversion fails completely, `stoi()` throws an exception
- Write a simple program to illustrate your answer

# Base Conversion

- What base is used by `std::stoi` for conversion?
  - Decimal (base 10)
- Is it possible to change this?
  - Yes. An optional third argument gives the base we want to use

# Converting Strings to Floating-point

- Is it possible to convert the data in an `std::string` object to floating-point?
  - Yes, by using `std::stod()`
- Write a simple program to illustrate your answer