Variadic Templates Exercises

Variadic function templates

- What is a variadic function template?

Parameter Packs

- What is meant by the following terms?
  - Template parameter pack
  - Function parameter pack
- Write down a declaration of a variadic function template

Type deduction

- Given the following declaration of func and definitions of i, d and s

  template <typename... Args>
  void func(Args... args);

  int i{42};
  double d{0.0};
  string s{"text"};

- Write down the signature of the functions which would be instantiated by the following calls:

  func(s);
  func(i, d, s);

sizeof... operator

- What is the purpose of the sizeof... operator?

- Write a simple program that demonstrates the use of the sizeof... operator

Pack expansion

- What is a "pack expansion"?

Pack processing

- Describe a typical way of processing a function parameter pack

Pack processing

- Write a variadic function template which processes its function parameter pack

- As each element in the parameter pack is processed, print it out together with the number of elements which remain to be processed