Callable Objects Exercises

std::function

- What is the purpose of std::function?

Limitations of std::function

- Are there any limitations to std::function?

- What alternatives are there to using std::function?

count_strings

- Write a count_strings function similar to std::count_if which
  - Takes a vector of std::string and a function pointer
  - Calls the function on each element
  - If the function returns true, increments a counter
  - Returns the final value of the counter
- Write a program to test your code. It should work correctly with this function

```
bool match(const string& test) {
    return test == "cat";
}
```

std::function

- Modify count_string() to use std::function instead of a function pointer. Check that it still works

- Modify the program to pass a functor to count_string(). Check that it still works

- Modify the program to pass a lambda expression to count_string(). Check that it still works

std::bind

- Using this version of match, modify the program to use an object returned from calling std::bind()

```
bool match(const string& text, const string& value) {
    return text == value;
}
```