**Spike:** 5

**Title:** c++ 11

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**Goals / deliverables:**

You need to create a simple C++11 application that explores the new basic features of C++ and how they are beneficial in comparison to the C++03 methods.

You will need to deliver the following items:

1. A C++ application showing how to utilize the basic C++11 features

2. A comparison of these features to the C++03 counterparts (if applicable). This can be done in code and can be as simple as having the two methods in the same function to see the difference in code readability, usability etc.

For the purpose of this spike, the basic features of C++11 are considered to be:

 Nullptr keyword

 In-class member initialization

 Override and final keywords

 Auto keyword

 std::tuple

 Range-based for loop

 Non-member begin and end

 std::array

C++11 also offers many advanced features. You are encouraged to explore one of the advanced features of C++11 and compare it to the C++03 methods.

For the purpose of this spike, the advanced features of C++11 are considered to be:

 Smart Pointers

 Static Asserts

 Constexpr

 Variadic Templates

 Lambdas

**Technologies, Tools, and Resources used:**

List -----------------

**Tasks undertaken:**

List key -----------------------

**What we found out:**

Describe ----------------------------