constexpr

Static code generatrion with constexpr

```cpp
1  #include <iostream>
2  constexpr int factorial(int n) {
3    // Compute this at compile time
4    return n <= 1 ? 1 : (n * factorial(n - 1));
5  }
6
7  int main() {
8    // Guaranteed to be computed at compile time
9    return factorial(10);
10 }
```

- constexpr specifies that the value of a variable or function can appear in constant expressions

It only works if the variable of function can be defined at **compile-time**:

```cpp
1  #include <array>
2  #include <vector>
3
4  int main() {
5    std::vector<int> vec;
6    constexpr size_t size = vec.size();   // error
7
8    std::array<int, 10> arr;
9    constexpr size_t size = arr.size();   // works!
10 }
```

error: constexpr variable 'size' must be initialized by a constant expression