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# 1 Overview

abcdef

## 1.1 Programming Languages

## 1.2 Compiler

## 1.3 Programming Paradigms

## 1.4 Code Quality and Design

1. design patterns
2. aspect/feature oriented programming
3. test driven development

**1.5** Operating System Concepts

**1.6** Algorithms

**1.7** Data Structure

**1.8** Distributed Systems

**1.9** Machine Learning

## **2** Compiler

**2.1** Parsers

**2.2** Lex

**2.3** Front-End

**2.4** Back-End

**2.5** IR

**2.6** Optimization

## **3** C++

**3.1** initialization

**3.2** value and copy semantics

**3.3** modules

**3.4** exceptions

**3.5** Idiom

**RAII** Resource ...

**SFINAE** Resource ...