



# Week 1: Hashing

## Time

This lesson should take **approximately 4-6 hours** of dedicated time to complete, with its videos and assignments.

## Learning Objectives

By the end of this module, learners will be able to:

- Implement classic and adapted data structures and algorithms for hash tables.
- Develop software using the C++ Standard Library implementations map and unordered\_map.
- Analyze the efficiency of implementation choices of data structures and algorithms for hash tables.
- Decompose a real-world problem, such as cache memory, into the appropriate implementation of a hash table, and

## Lessons

The activities for this lesson are listed below (with required assignments in bold italics):

Activity	Estimated Time
Lesson 1 Lecture Videos	45 minutes
<b><i>Week 1 Graded Quiz</i></b>	30 minutes
<b><i>Week 1 Challenge Problem</i></b>	1 hour
<b><i>MP #1</i></b>	1-3 hours

## Key Concepts

- Hash tables
- Good hash function