Module 10: Overview

Overview

In this module, we will study algorithms for computing a shortest path from a source vertex to a destination vertex in the given graph (single pair shortest path problem) or for computing a shortest path from the given source vertex to all other reachable vertices in the graph (single source shortest path problem). While there may be exponential number of paths connecting the source vertex to the destination vertex, our algorithm finds an optimal solution in polynomial time. This algorithm is the foundation of a navigation system. You will learn how to implement such an algorithm.

Learning Objectives

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

1. Study Dijkstra's shortest path algorithm
2. Analyze the performance of Dijkstra's shortest path algorithm
3. Study the fundamentals of a navigation system.

Readings

Read the following:

- Section 22.2
- Section 22.3
- Section 22.5