04/16/2025: Trees and Project Planning

CSCI 246: Discrete Structures

Textbook reference: Sec 50, Scheinerman

Announcement: Student Body Elections

Voting is open for student body elections, which students can access on CatsConnect.

Today's Agenda

- Reading and problems quiz (15 mins)
- Project overview (10 mins)
- Project setup (20 mins)

Feedback on Wednesday's Quiz

Reading Quiz Scores

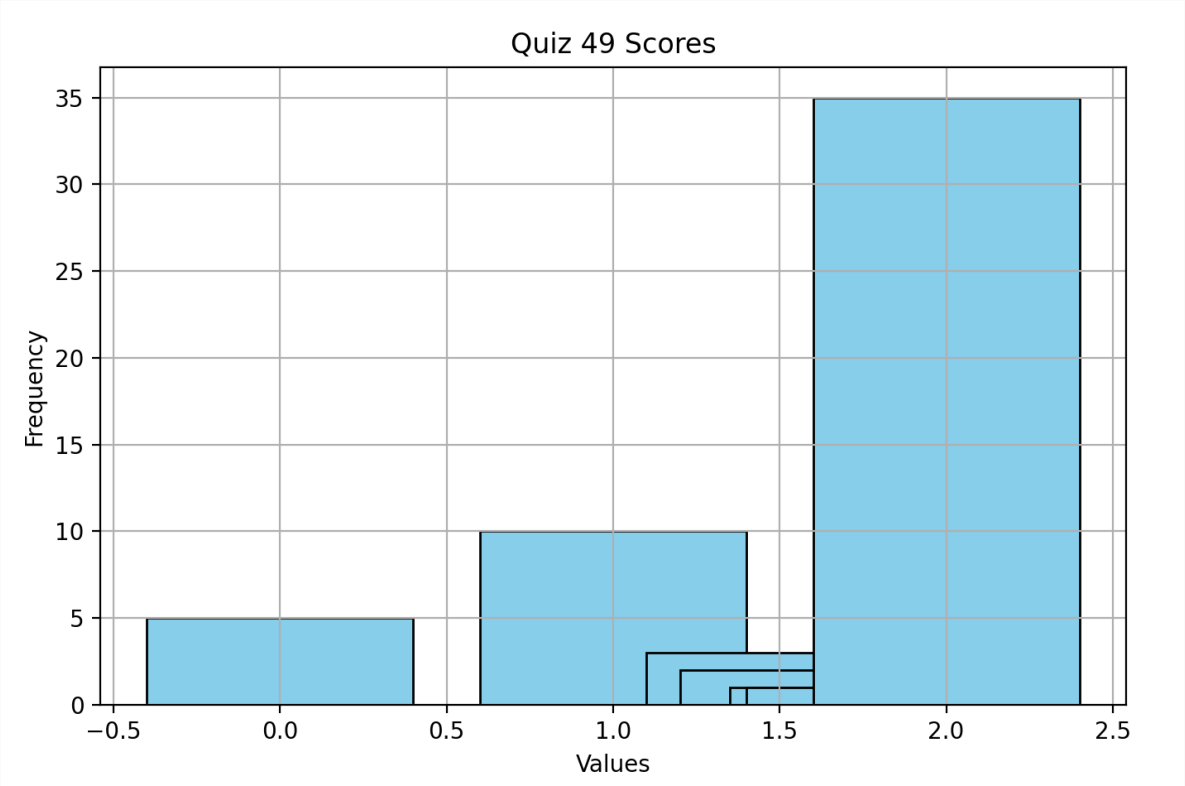

Figure 1: Median Score = 2/2 (100%)

Grading Rubric:

1. (1 point) The argument is wrong.
2. (1 point) Explanation why. (E.g. walks are not paths.)

Today's quiz

Reading Quiz (Trees)

State two different characterizations of trees.

Problems Quiz (Graph fundamentals, subgraphs, connection)

1. How many different graphs can be formed with vertex set $V = \{1, 2, 3, \ldots, n\}$? Justify your answer.
2. (Extra credit.) Prove that in every graph, the number of vertices with odd degree is even.

Definitions (for reference)

Let G be a graph. A path P in G that contains all the vertices of G is called a **Hamiltonian path.**

Let G be a graph. If all pairs of distinct vertices are adjacent in G, we call G a **complete graph**.

Project Planning