

**Problem:**

We will pretend that there was a football league realignment. Every college must now play in their respective state. For example, all Oregon Schools will have to play with other Oregon schools. For the sake of this project, I will also add schools that do not have football teams. With this realignment, we must find the shortest path from one school to another. We will use Dijkstra's algorithm to find the shortest path.

**Graph Class Functions and Tests:****Add Vertex:****Test 1:**

Add new Vertex

**Test 2:**

Add multiple vertices

**The new edge between 2 vertices:****Test 1:**

Test adding an edge

**Test 2:**

Test adding multiple edges to Vertex

**Shortest Path Algorithm:****Test 1:**

Find the shortest path of design

**Test 2:**

Test with no path existing

**Minimum Spanning tree Algorithm:****Test 1:**

Test algorithm

**Test 2:**

Test if tree has no cycles.

Design:

