Drawing Bus Routes

You're still working at the budget travel company. Your team leader liked your earlier solution for finding the cheapest bus route between two given cities. They liked it so much that they now want you to extend your program so that it generates a visual depiction of your solution.

Problem Statement

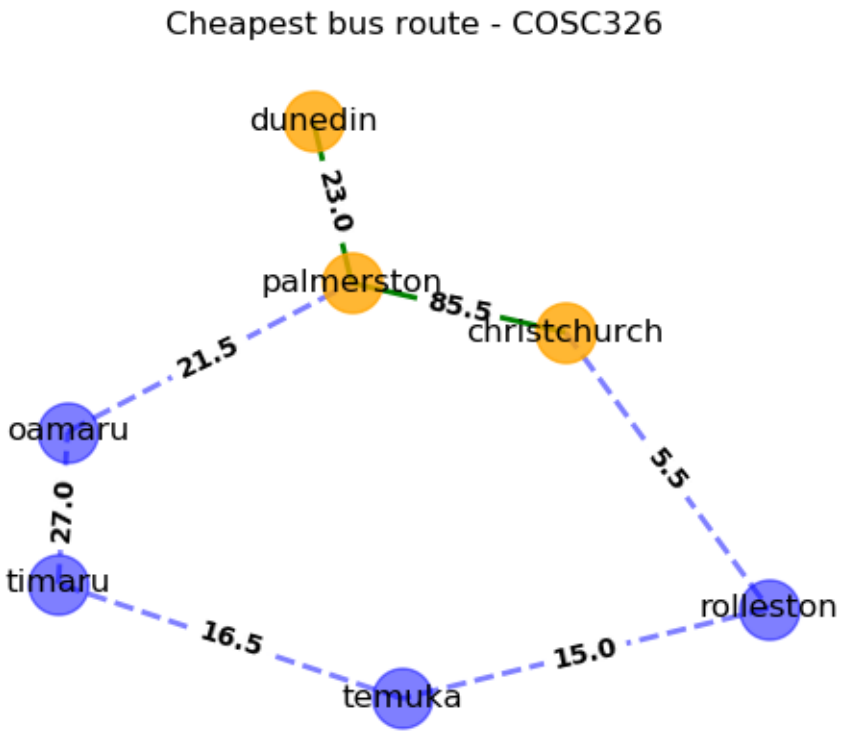
Your first program from étude Bus Route located the cheapest multi-city route and output the solution to the console as text. In this version, your program will instead visualize the city network and highlight the route solution. All other requirements including the handling of invalid cases are inherited from the Bus Route étude.

Task

Using Python and the NetworkX package, your program should produce a .PNG file that contains your visualized cities and highlights the cheapest route. Your program should not display anything to screen. Your graph should resemble the image below. Note, while the configuration of cities and their layout can vary between program runs, visual details must be fixed.

1.1 Visualization details

Your program should layout cities nodes using the FruchtermanâĂŞReingold algorithm. Cities through which your cheapest route travels should be visualized as: orange, size 500, transparency 0.8. Cities that are not on the cheapest route should be: blue, size 500, transparency 0.5. Inter-city routes that are part of the cheapest route should be: green, width 2. Those routes not on the cheapest route as: blue, width 2, dashed, transparency 0.5. Give your graphic a title.



Relates to Objectives

1.2 1.4 2.2 2.4 2.5 2.6 2.7 3.1 3.2 3.4 3.5

(2 points, Individual)