CIS263 Week Fourteen Assignment

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Select an NP complete problem from the list below. Implement a solution programmatically to the problem. Choose a unit test that demonstrates the functionality of the solution algorithm you have chosen.

Extra Credit: Create a short presentation that reduces the NP complete problem you have selected into another NP complete problem. Make sure you fully explain each step of the reduction. Presentation length will vary depending on the reduction chosen.

The amount of extra credit given will be based on: quality, the reduction chosen (harder/lengthier reductions awarding more EC), correctness.

NP Complete Problems:
3-Sat
3-Dimensional Matching
Vertex Cover
Clique
Hamiltonian Circuit
Partition
Traveling Salesman Problem

Approved programming languages: C, C++, C#, Java, Python, Matlab

Hand-in:

The code used to complete the task.
The output demonstrating the solution to the problem selected.
PowerPoint or keynote slides that explain the reduction in detail.
Note: Please do not upload zip files

Grading Rubric

	0%	50%	100%
Code written from scratch and doesn't use a standard library to implement the NP Complete Problem (50%)	Code uses a standard library	Code does not use a standard library but is hard to read	Code does not use a stand library and is easy to follow
Output demonstrating correct functionality for each of the use cases (50%)	Output not clear or non-existent	Output not clearly demonstrating functionality	Output clearly demonstrating functionality

See blackboard for point breakdown.