Assignment 3:

Purpose of map is to get to B from A. We can model it as a directed weighted graph. It consists of vertices and edges. Vertices are of 2 flavours. One is any intersection. Other vertices are basically points of interest. A trip is from one point of interest to other point of interest.

Vertex is a road intersection or a point of interest. It will have a label and also it will have some type information. An intersection could be a point of interest. Edges represent roads. Directed edges are going to be used as events like hazard or construction will be directional and closures could be one way. Roads have a speed limit ( it is a road segment). It has a speed limit and a length.

Roads are defined as a sequence of edges that all connect one to other. They all have a name. This is not done as a program but as an API. A collection functions. exposed functions. Not everything right has to be exposed. It was this system provides.

add vertex(type, label). A class for each ( something that specifies what it is). Label could be a character string. API shields anyone using it from how we store that data. Chapter 22,24 in Algorithms book talk about various graph algorithms and data structures. Adjacency matrix and adjacency list. The graph is sparse so it must not be used. So use dynamic data structure. Class vertex could be defined for add vertex. Edges is basically vertex 1 and vertex 2. The graph is simply labelled as directional. 90% are not directional, they are placed.

add Edge ( v1, v2, directional, speed, length).

add Vertex ( type, label)

edge Event (edge, type) - can be a road closure.

road (edge [],”name”)

Trip ( v1, v2) is fundamentally

vertex ( ) - does it exist or not

A little bit of pattern matching can be done easily.

store() and retrieve() - don't do anything sophisticated. Dump it to disc sometime. Retrieve it from disk. - whatever the state.

Data structure is how edges, vertices, speed and length will be stored. Think about the way to do it. Don't use adjacency matrix. Adjacency list must be though of.

On roads that are 100 km/ hr the road travels 30. It is all an interface. We must create a main function that drives this and generate some test cases. Some small defined test cases.

Short report and not a long report showing the design choices. Generate some test cases. We can make a very very small user interface.

Get something that works.