```
Graph< Location >
std::vector< Vertex
< Location > * > vertexSet
```

- ~Graph()
- + Vertex < Location > * findVertex(const Location &in) const
- Vertex < Location >
- * findLocationId(const int &id) bool addVertex(const
- Location &in) + bool removeVertex(const Location &in)
- bool addEdge(const Location &sourc, const Location &dest, double
- bool removeEdge(const Location &source, const Location &dest)

d, double w)

- bool addBidirectionalEdge (const Location &sourc, const Location &dest, double d, double w)
- + int getNumVertex() const void avoidVertices
- (std::vector< int > vertices) void avoidEdges(std
- ::vector< std::pair < int, int > > edges)
- std::vector< Vertex < Location > * > getVertex Set() const
- int findVertexIdx(const Location &in) const



Route

- # string mode
- # int source # int dest
- Route(Graph < Location
- > *map, string m, const int src, const int dt)
- + virtual ~Route()=default
- virtual bool readFromFile (const string &filename)=0
- virtual void writeToFile (ostream &outFile)=0
- virtual void processRoute (ostream &outFile)=0



EcoRoute

- EcoRoute(Graph < Location *map)
- EcoRoute(Graph < Location
 - > *map, string m, const int src, const int dt, const

 - &avoidN, const vector< pair
- < int, int > > &avoidS)
- bool readFromFile(const string &filename) override
- void writeToFile(ostream &outFile) override
- bool calculateRoute() void calculateAproxSolution
- (ostream &outFile) void processRoute(ostream &outFile) override