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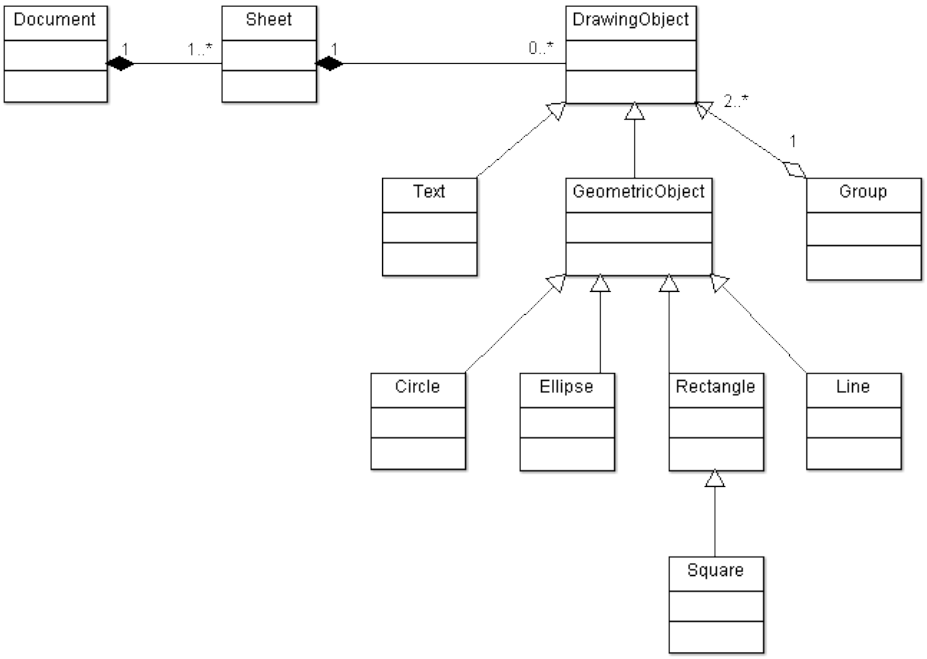
COMP 3700
HW1

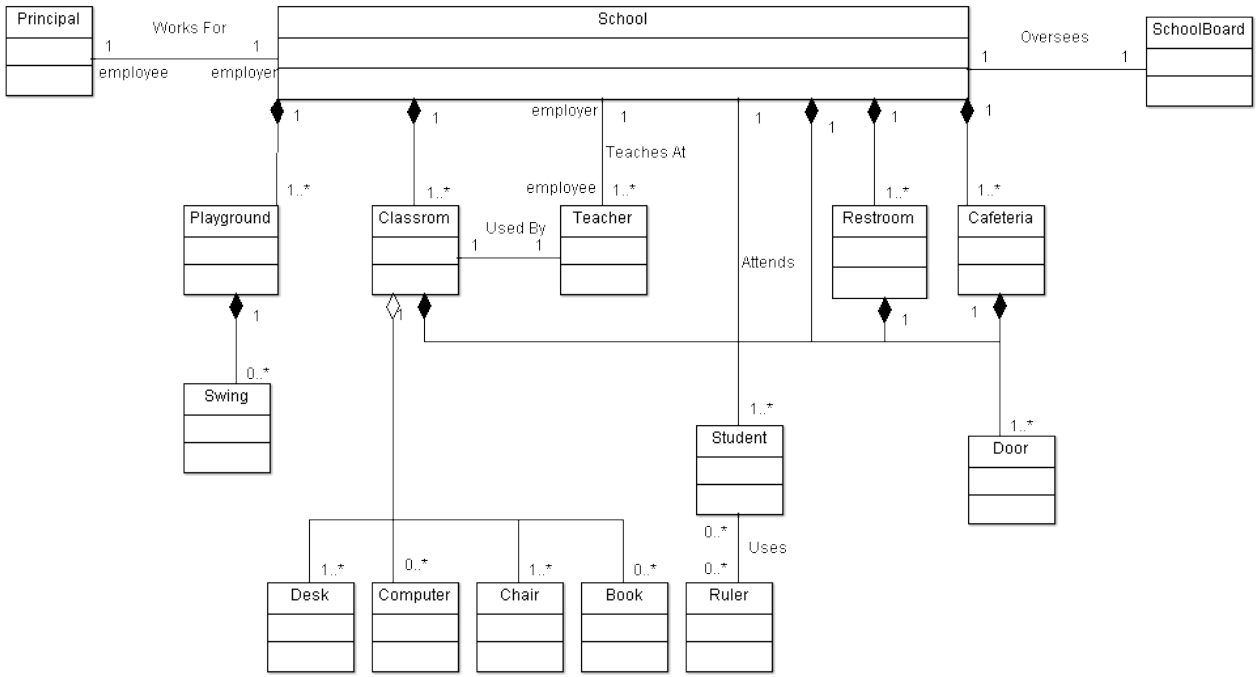
DISCLAIMER: ArgoUML has a few quirks, which may show up throughout this submission. I will search for a more suitable environment, but for now I must finish this assignment with what I have, I will attempt to spell out the changes that *should* appear in a more ideal modeling solution wherever the need may arise.

ArgoUML will not allow a multiplicity of '*', so I had to type '0..*' instead in certain instances.
1.)

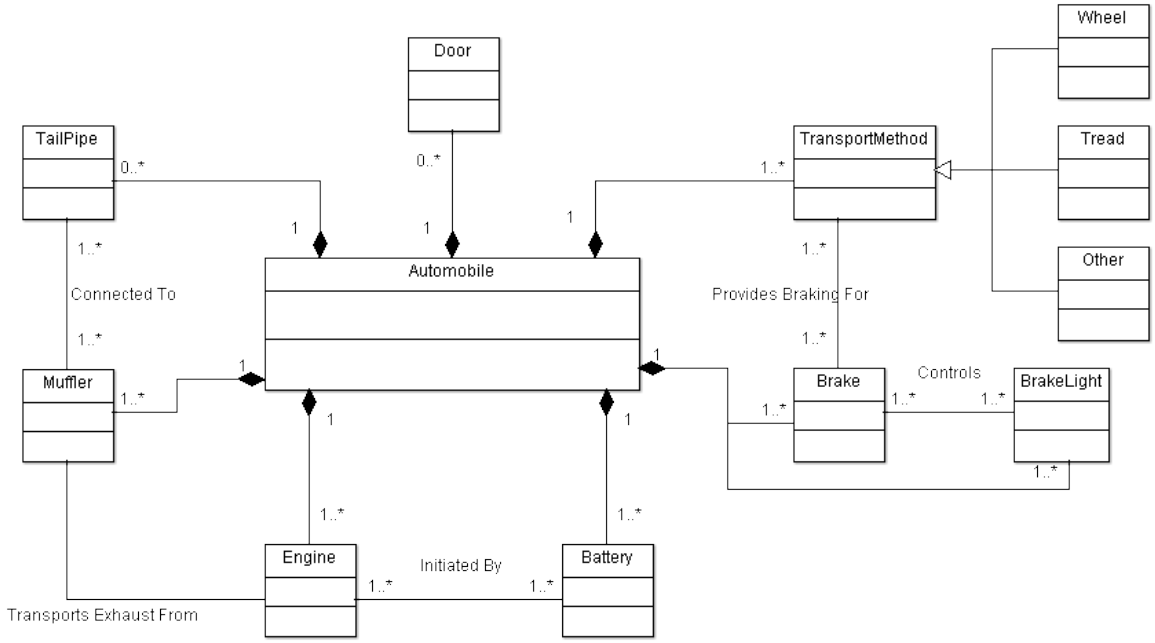


2.)

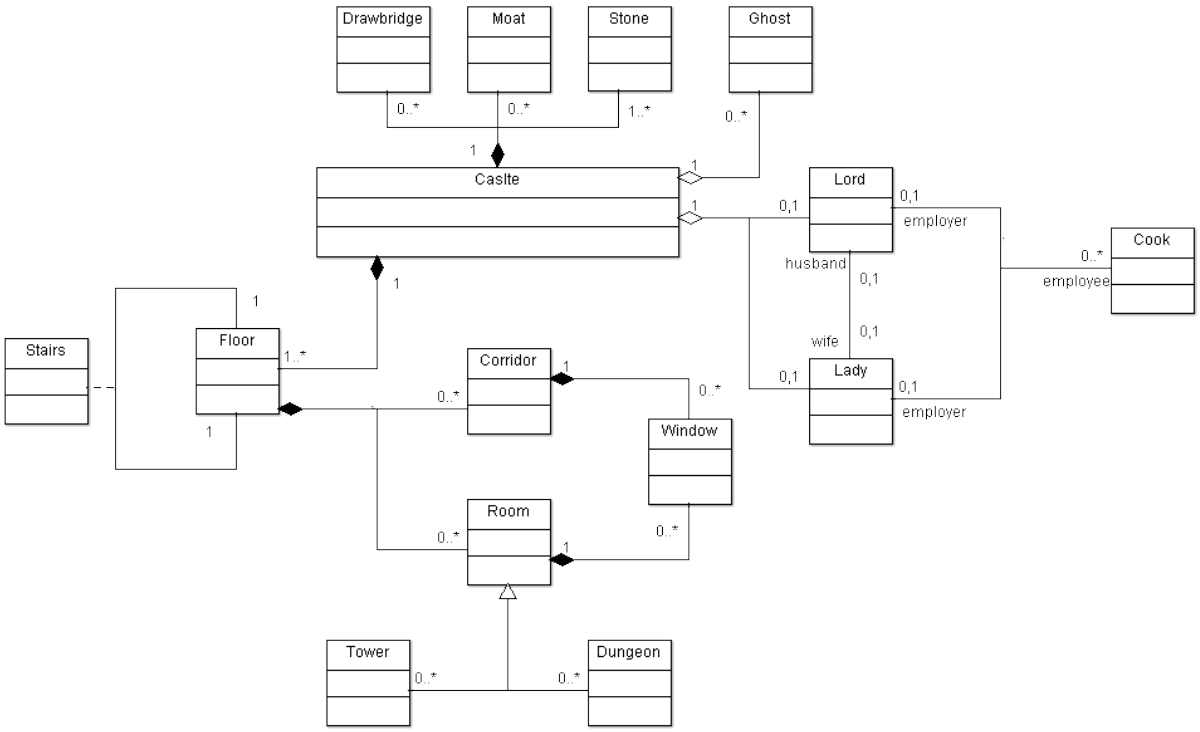
a) *ArgoUML does not allow for qualifiers (or even text boxes to use as qualifiers), but I would have qualified Student and Classroom with 'StudentID' and 'RoomNumber' respectively.*



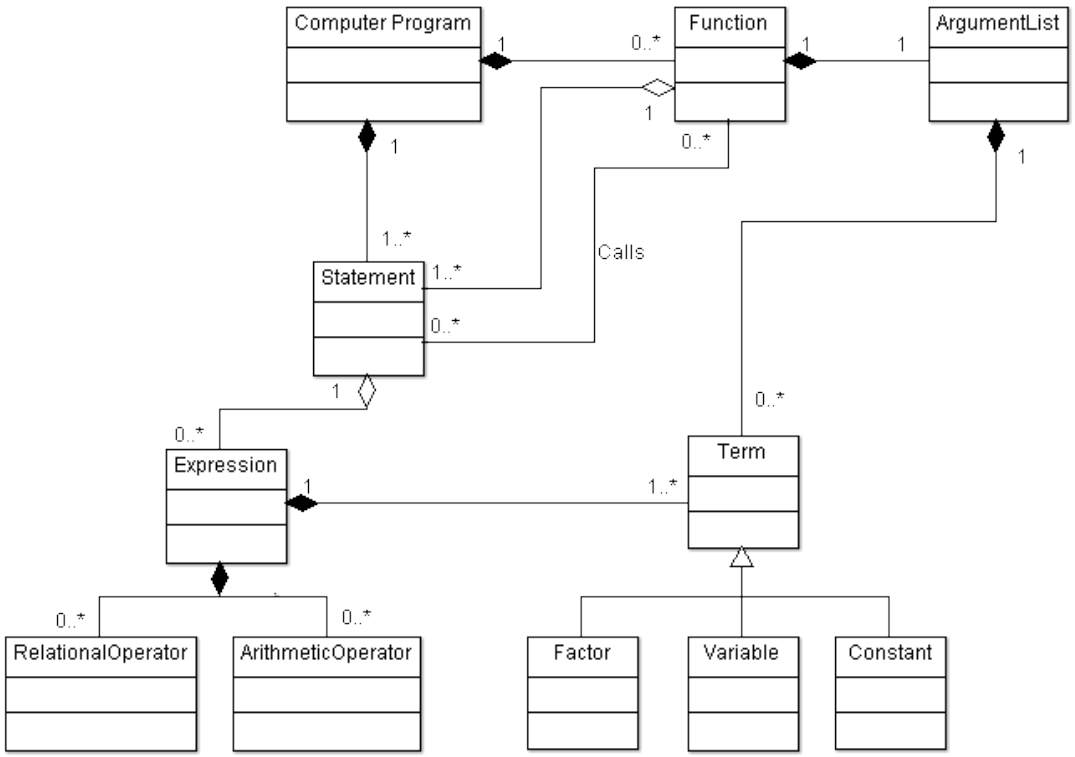
b)



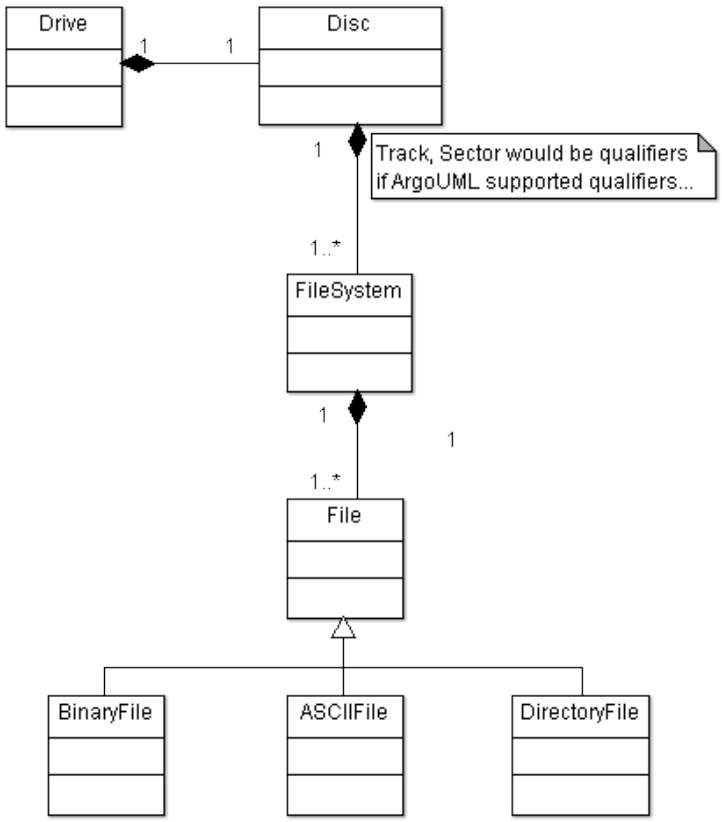
c)


Drawbridge
Moat
Stone
Ghost
Caslte
Lord
Cook
Stairs
Floor
Corridor
Window
Room
Tower
Dungeon
Lady
employer
employee
husband
wife
0..*
1..*
1
0,1

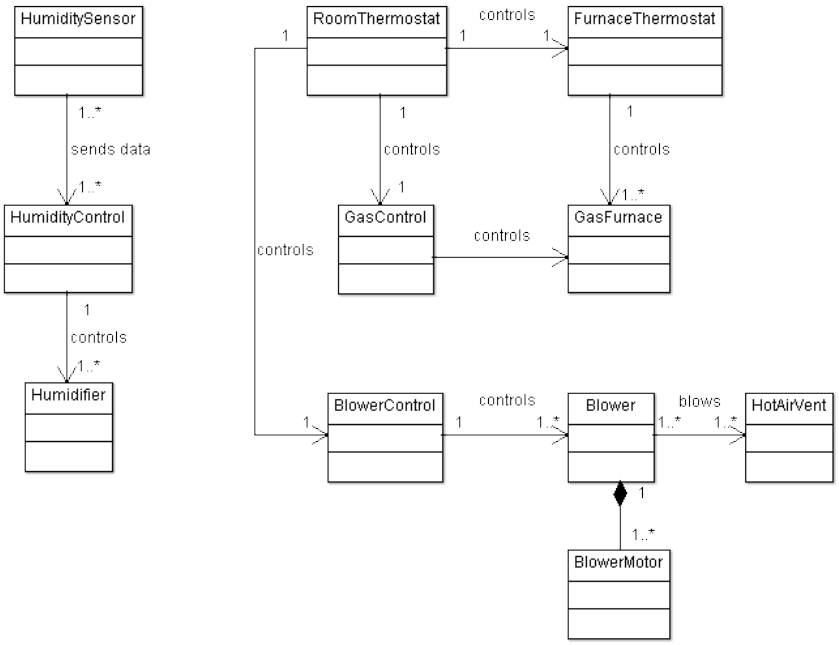
d)


Computer Program
Function
ArgumentList
Statement
Calls
Expression
Term
RelationalOperator
ArithmeticOperator
Factor
Variable
Constant
1
0..*
1..*

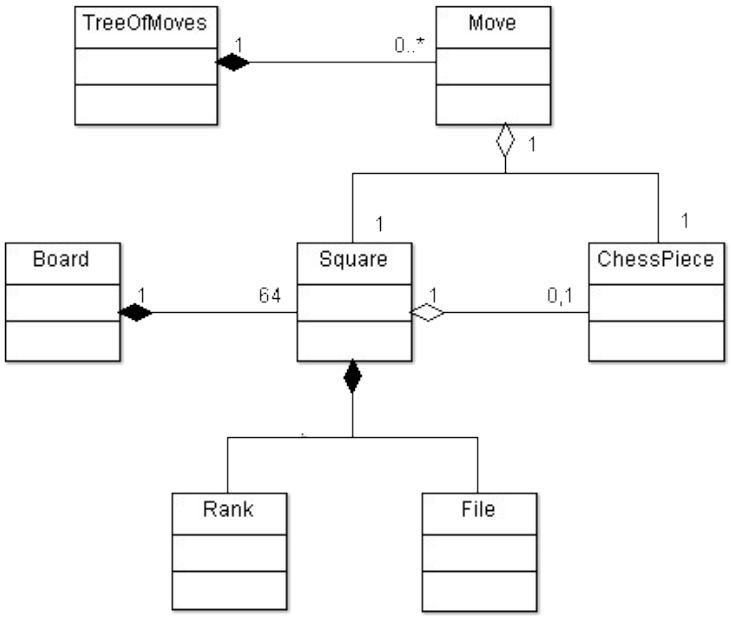
e)


Drive
1
1
Disc
1
Track, Sector would be qualifiers
if ArgoUML supported qualifiers...
1..*
FileSystem
1
1
1..*
File
BinaryFile
ASCIIFile
DirectoryFile

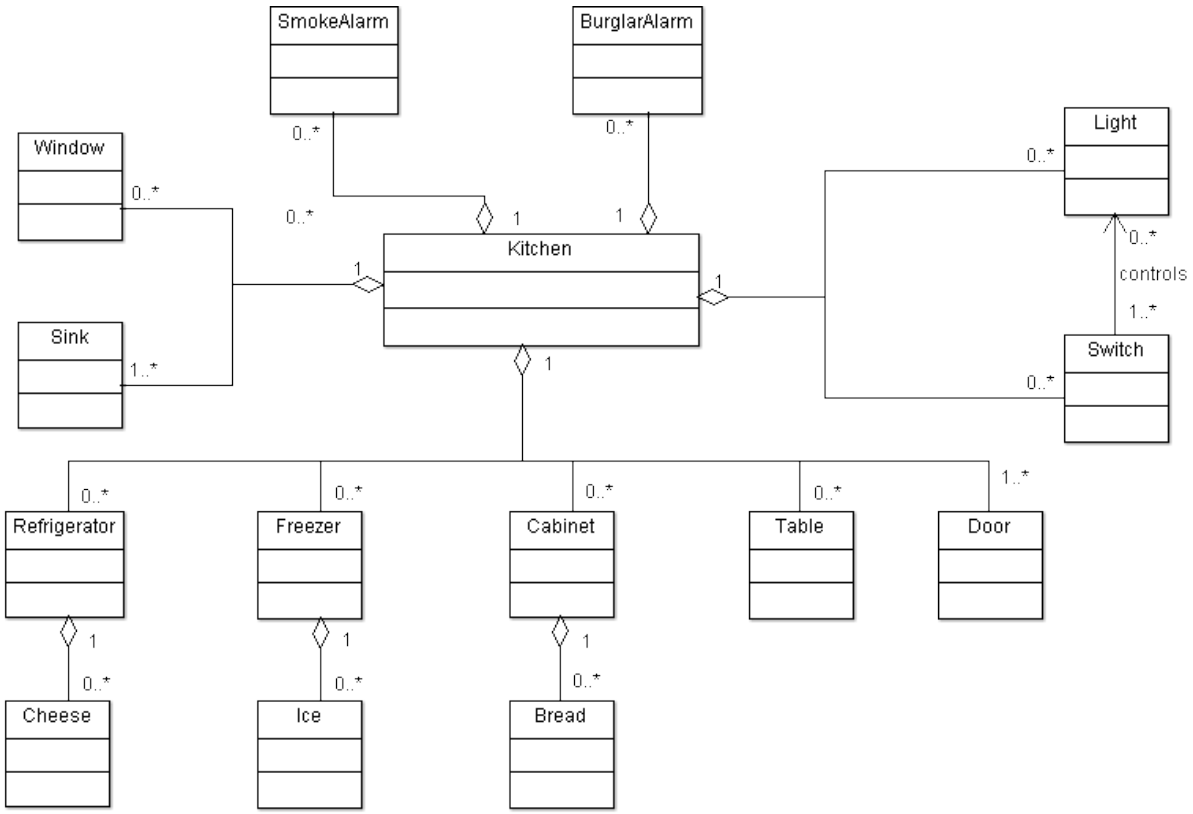
f)


HumiditySensor
1..*
sends data
1..*
HumidityControl
1
controls
1..*
Humidifier
RoomThermostat
controls
FurnaceThermostat
1
1
1
1
1
1
controls
controls
1
1..*
GasControl
controls
GasFurnace
controls
1
BlowerControl
controls
Blower
blows
HotAirVent
1
1
1..*
1..*
1..*
1
1..*
BlowerMotor

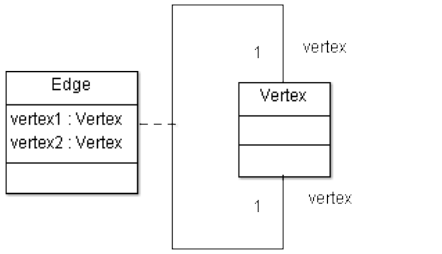
g)


TreeOfMoves
Move
1
0..*
1
1
1
Board
Square
ChessPiece
1
64
1
0,1
Rank
File

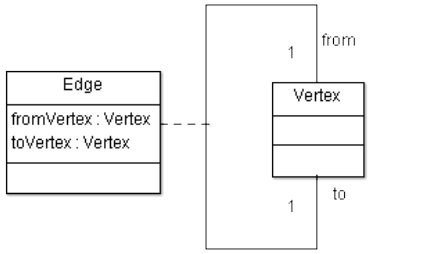
h)



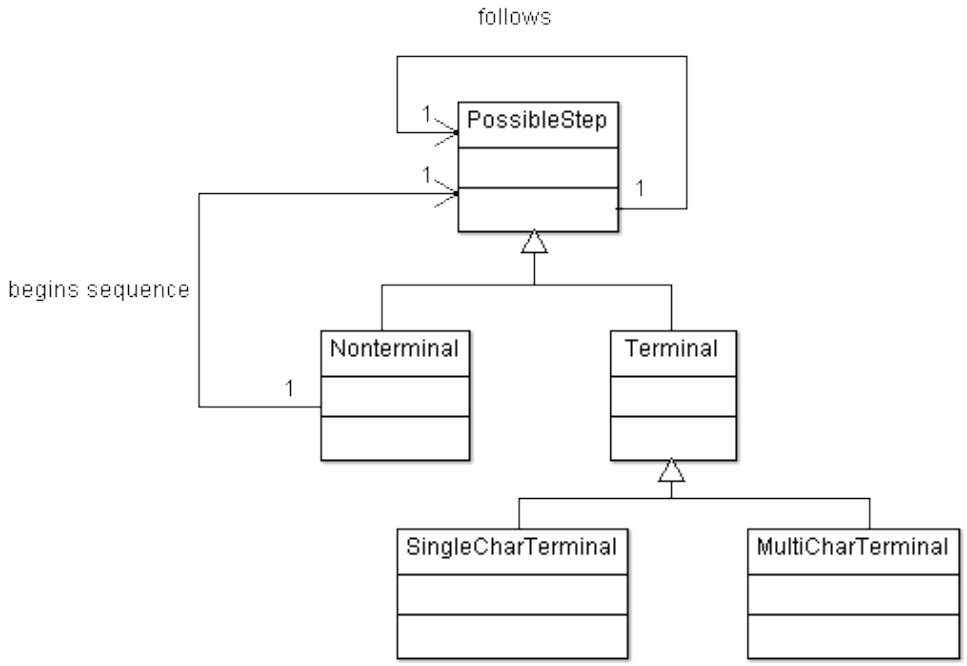
3.)



Note that each vertex in the undirected graph bears the association end name 'vertex', symbolizing that there is no precedence or functional differentiation between the two vertices.



Note that one vertex in one directed graph Edge Association bears the association end name 'from' while the other is named 'to', symbolizing that there is a specified direction between the two vertices.

4.)
a) Aggregation – A country **has a** capitol city.
b) Association – A dining philosopher **uses** a fork.
c) Generalization – A file **is an** ordinary file or (**is**) a directory.
d) Aggregation – Files **contain** records.
e) Aggregation (specifically Composition) – A polygon **is composed of** an ordered set of points.
f) Generalization – A drawing object **is a** text, a geometrical object, or a group.
g) Association (trinary) – A person **uses** a computer language **on a** project.
h) Generalization – Modems and keyboards **are** input/output devices.
i) Aggregation – Classes may **have** several attributes.
j) Association – A person **plays for** (ie. Is associated with) a team in a certain year.
k) Association – A route **connects** two cities.
l) Association (trinary)– A student **takes** a course **from** a professor.

5.)