The IIT Campus schema initially contained the following tables:

<table>
<thead>
<tr>
<th>Tables</th>
<th>Attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td>road_centerline</td>
<td>RoadID, width, type, geometry(POLYLINE)</td>
</tr>
</tbody>
</table>

Here, 'type' denotes whether the road is a Motorway, Pathway, Approach Road or a Corridor.

Now, the network model that was created out of this schema consisted of the following tables:

<table>
<thead>
<tr>
<th>Tables</th>
<th>Attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arc</td>
<td>ArcID, width, length, type, start_node, end_node, geometry (POLYLINE)</td>
</tr>
<tr>
<td>Node</td>
<td>NodeID, geometry(POINT)</td>
</tr>
<tr>
<td>Node_arcs</td>
<td>NodeID, ArcID, type, length</td>
</tr>
</tbody>
</table>

**Algorithm:**

Construct a table **Arc** with the attributes mentioned above.
Populate it as follows:

For every road_centerline:

1. Arc.ArcID = “Road_centerline.ID”
2. Arc.width = Road_centerline.width
3. Arc.type = 3 if Road_centerline.type = “Motorway” or “Approach Road”
   2. 2 if Road_centerline.type = “Pathway”
   1 otherwise
4. Arc.geometry = Road_centerline.geometry
5. Arc.length = length(Arc.geometry) where length() is a postgres function.

Compute the end-points of road_centerline using ST_StartPoint and ST_EndPoint functions.

Insert these points into the table **Node** (without repetition) with:

1. Node.NodeID = “NOD” + count
2. Node.geometry = ST_StartPoint(road_centerline.geometry) or ST_EndPoint(road_centerline.geometry)
3. Arc.start_node = Node.NodeID such that ST_StartPoint(Arc.geometry) = Node.geometry
4. Arc.end_node = Node.NodeID such that ST_EndPoint(Arc.geometry) = Node.geometry

End for
Construct a table **Node_arcs** and populate it as follows:

For every node:

   For every arc such that Arc.start_node or Arc.end_node is equal to Node.NodeID

      Insert a new row in the table Node_arcs with:

      Node_arcs.NodeID = Node.NodeID
      Node_arcs.ArcID = Arc.ArcID
      Node_arcs.length = Arc.length
      Node_arcs.type = Arc.type

   End for

End for