# Table: Tubes

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| **Schema:** | SystemSchematicBuilder |
| **Responsible:** | Kurt A Vedros |

Table holds the information on the tube part.

Tube – a malleable cylindrical object. May be from top to bottom or left to right on a grid square. Considered to have one entrance and one exit.

Note: Tubes and Pipes might be used as the same instance.

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| **Column Name** | **Data type** | **Description** |
| TubeID | Int | Primary Key |
| GradeID | Int | Foreign Key to connect the Grade Table. |
| MaterialID | Int | Foreign Key to connect the Material Table. |
| Name | String | User given name of the tube (can be left blank). |
| Diameter | Float | The diameter of the tube in meters. |
| Distance | Float | The distance (length or height which ever user prefers to reference it as) given in meters. |

**Procedures (Database functions)**

* sprocGetTubes
  + Returns a list of Tube objects that are currently stored in the database.
* sprocGetTube
  + Returns a Tube object that is currently stored in the database that has the given Tube ID number.
* sproc\_TubeAdd
  + Stores the given Tube object into the database and returns its assigned Tube ID number.
* sproc\_TubeUpdate
  + Changes information of the Tubes Table in the database with the given primary key to the given Tube class object.
* sproc\_TubeRemove
  + Removes the Tube from the Tubes Table with the given Tube ID number.

**DAL (Software Functions)**

* TubesGetAll()
  + Returns a list of Tube objects that are currently stored in the database.
* TubeGet(int ID)
  + Returns a Tube object that is currently stored in the database that has the given Tube ID number.
* TubeAdd(Tube Tube)
  + Stores the given Tube object into the database and returns its assigned Tube ID number. Returns -1 if error occurred, otherwise returns null.
* TubeUpdate(Tube Tube)
  + Changes a Tube object that is currently stored in the database with the given Tube’s Tube.ID with the Tube’s information.
* TubeRemove(int ID)
  + Removes the Tube object stored in the database with the given Tube ID number. Returns -1 if error occurred, otherwise returns null.