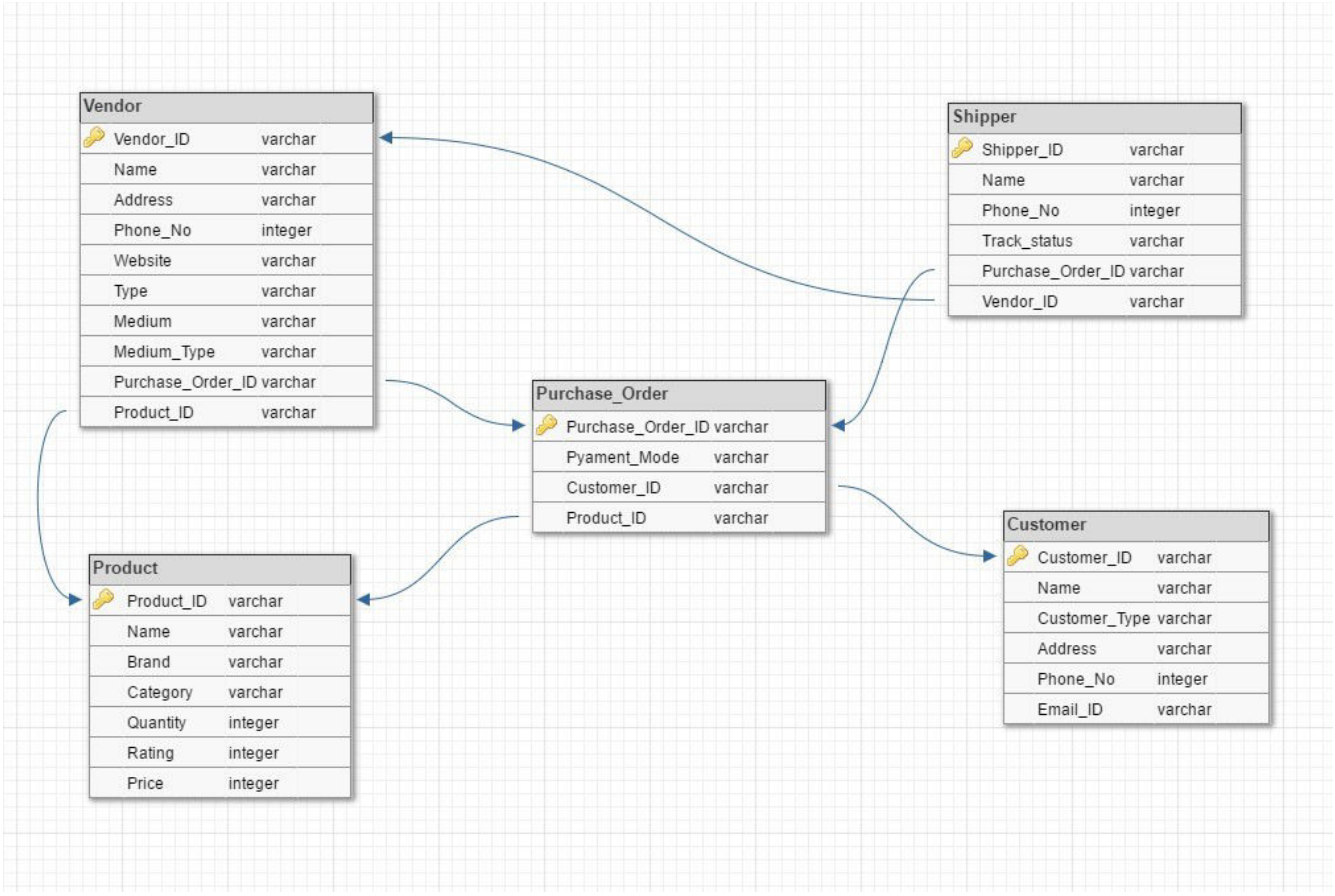
SQLITE : Purchase Order Management System

DB SCHEMA:-

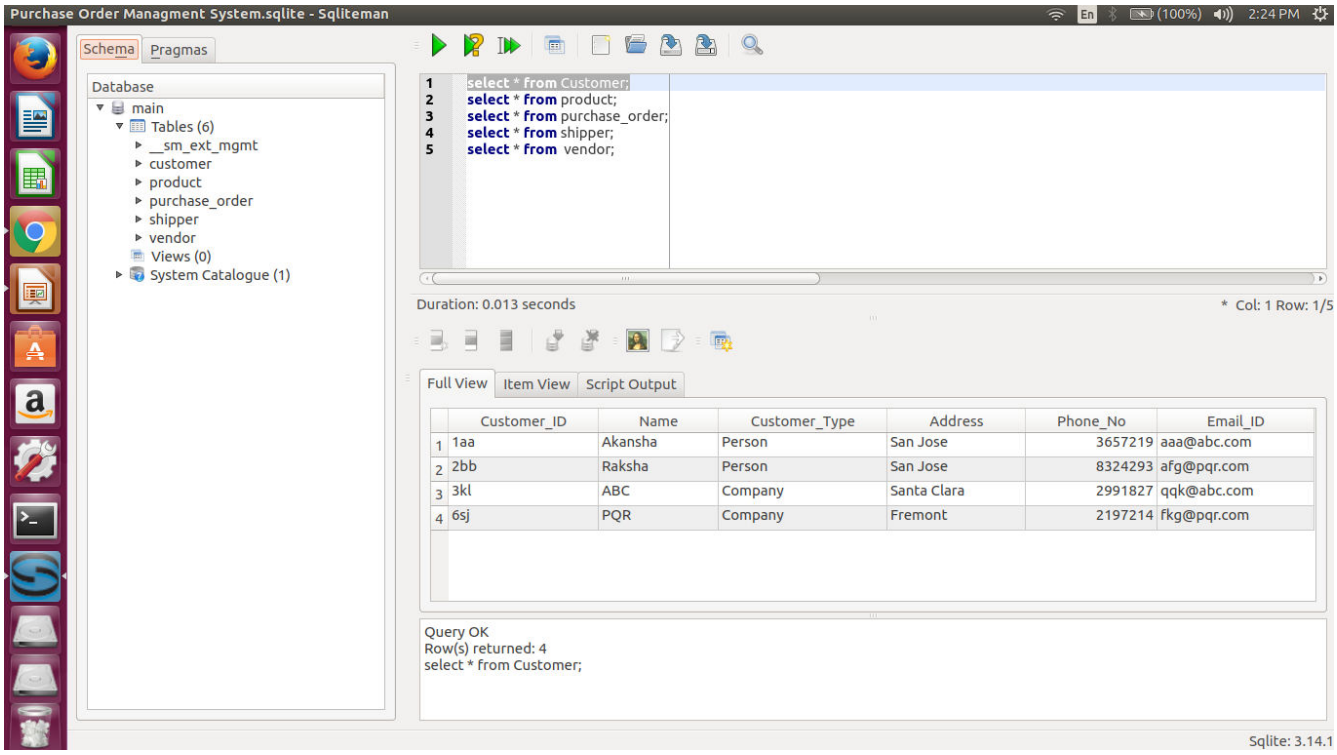
```
CREATE TABLE "customer"(
  Customer_ID varchar PRIMARY KEY NOT NULL,
  Name varchar NOT NULL,
  Customer_Type varchar NOT NULL,
  Address varchar,
  Phone_No integer,
  Email_ID varchar
 );
;
CREATE TABLE __sm_ext_mgmt (`id` integer primary key, `type` text not null , `value` text);
CREATE TABLE Product(
  Product_ID varchar PRIMARY KEY NOT NULL,
  Name varchar NOT NULL,
Brand varchar NOT NULL,
  Category varchar NOT NULL,
  Quantity varchar NOT NULL,
  Rating varchar NOT NULL,
  Price varchar NOT NULL);
;
CREATE TABLE "purchase_order"(
  Purchase_Order_ID varchar PRIMARY KEY NOT NULL,
  Payment_Mode varchar NOT NULL,
Customer_ID varchar NOT NULL,
  Product_ID varchar NOT NULL,

FOREIGN KEY(Customer_ID) REFERENCES Customer(Customer_ID)
FOREIGN KEY(Product_ID) REFERENCES Product(Product_ID));
;
CREATE TABLE Vendor(
  Vendor_ID varchar PRIMARY KEY NOT NULL,
  Name varchar NOT NULL,
Address varchar NOT NULL,
 Phone_No Integer NOT NULL,
Website varchar NOT NULL,
Type varchar NOT NULL,
Medium varchar NOT NULL,
Medium_Type varchar NOT NULL,
  Purchase_Order_ID varchar NOT NULL,
Product_ID varchar NOT NULL,

FOREIGN KEY(Purchase_Order_ID) REFERENCES "Purchase_Order"(Purchase_Order_ID)
FOREIGN KEY(Product_ID) REFERENCES Product(Product_ID));
;
```

```
CREATE TABLE Shipper(
  Shipper_ID varchar PRIMARY KEY NOT NULL,
  Name varchar NOT NULL,
 Phone_No Integer NOT NULL,
Track_status varchar NOT NULL,

Purchase_Order_ID varchar NOT NULL,
Vendor_ID varchar NOT NULL,

FOREIGN KEY(Purchase_Order_ID) REFERENCES "Purchase_Order"(Purchase_Order_ID)
FOREIGN KEY(Vendor_ID) REFERENCES Vendor(Vendor_ID));
;
```

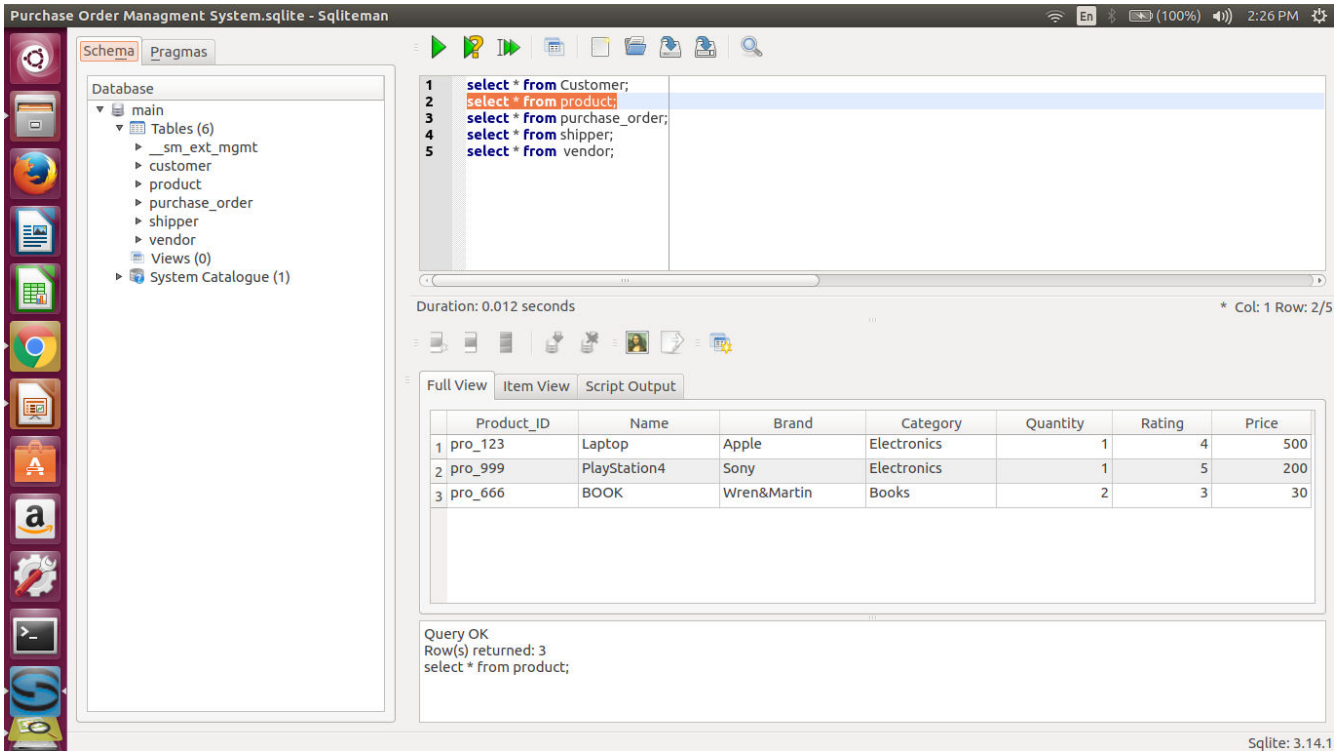
ER DIAGRAM:



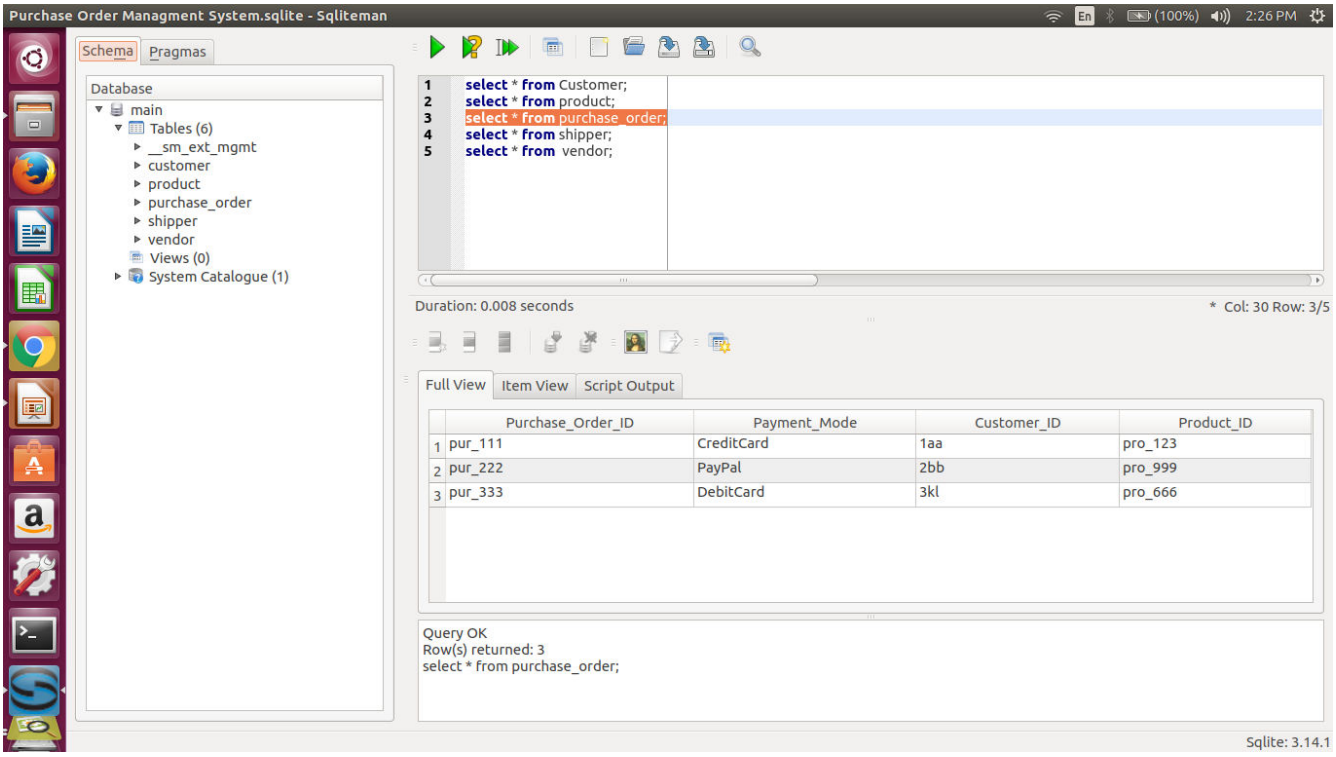
1.) Screenshot for Table Customer :



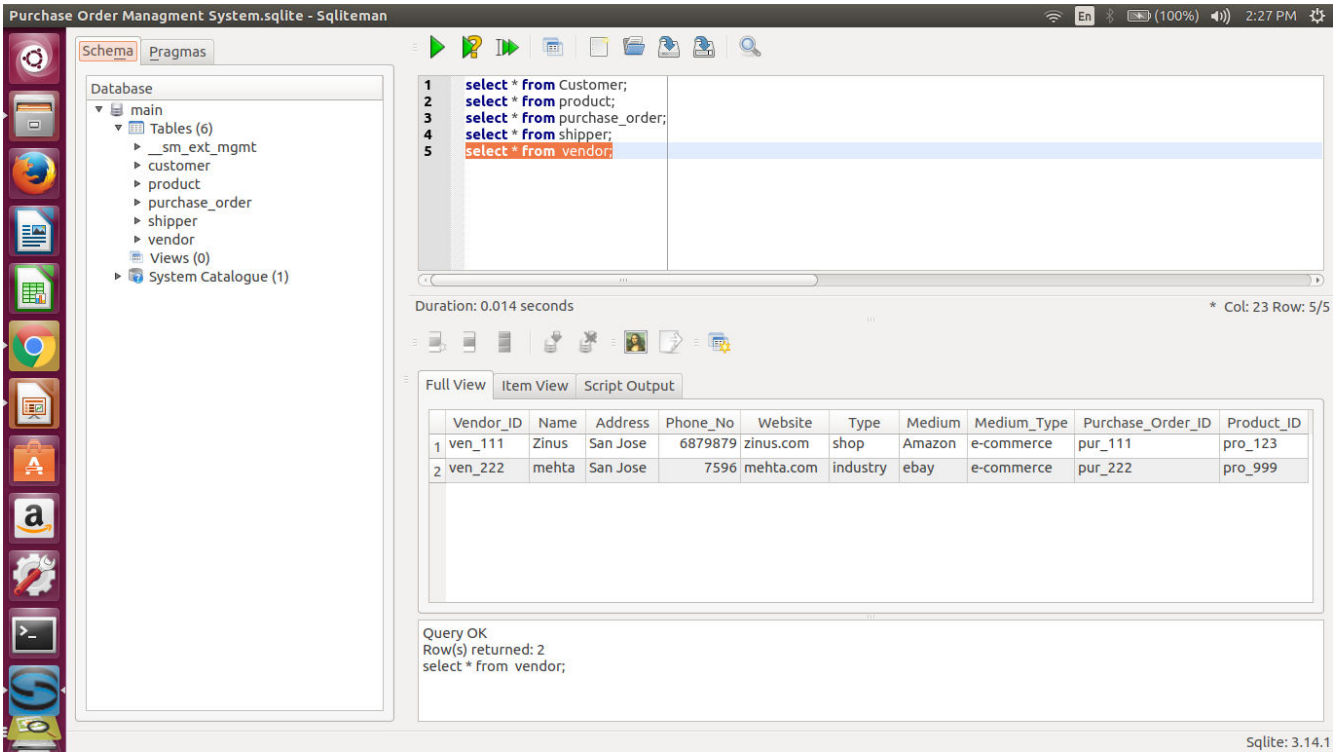
2.) Screenshot for Table product :



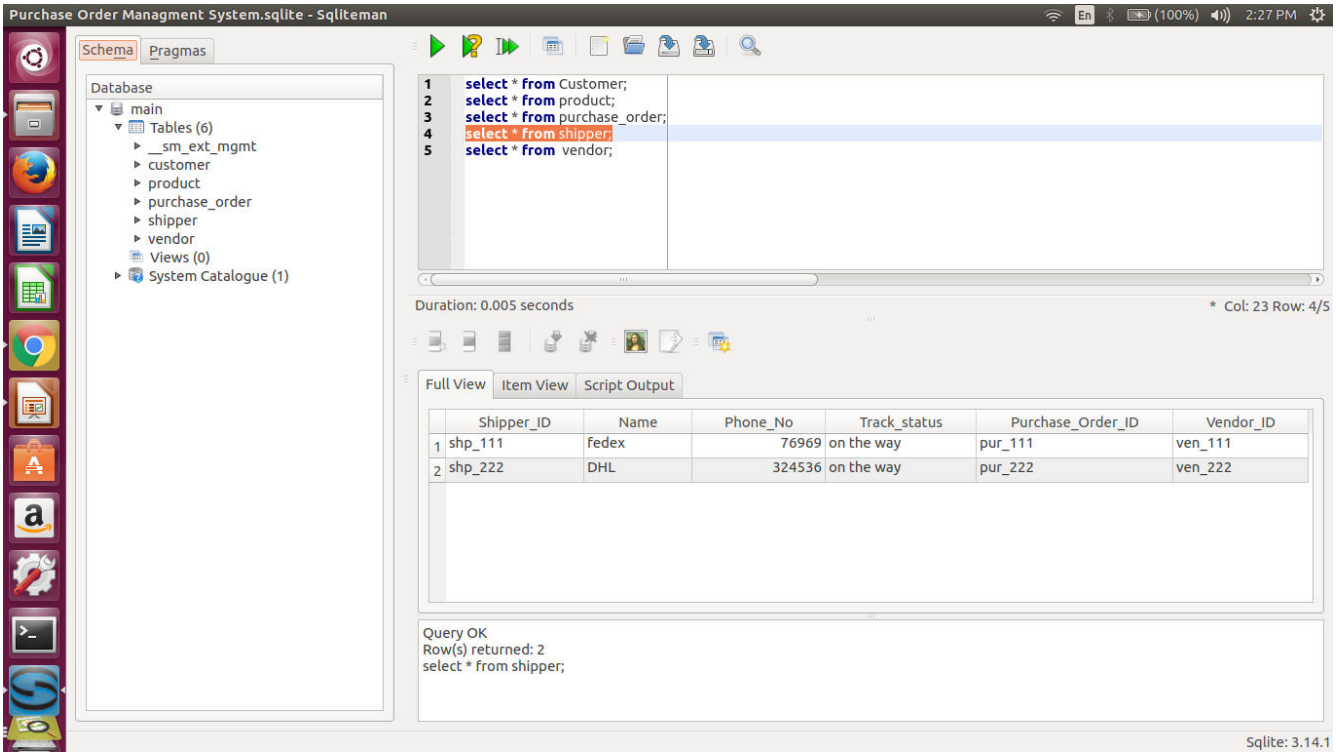
3.) Table purchase_order :



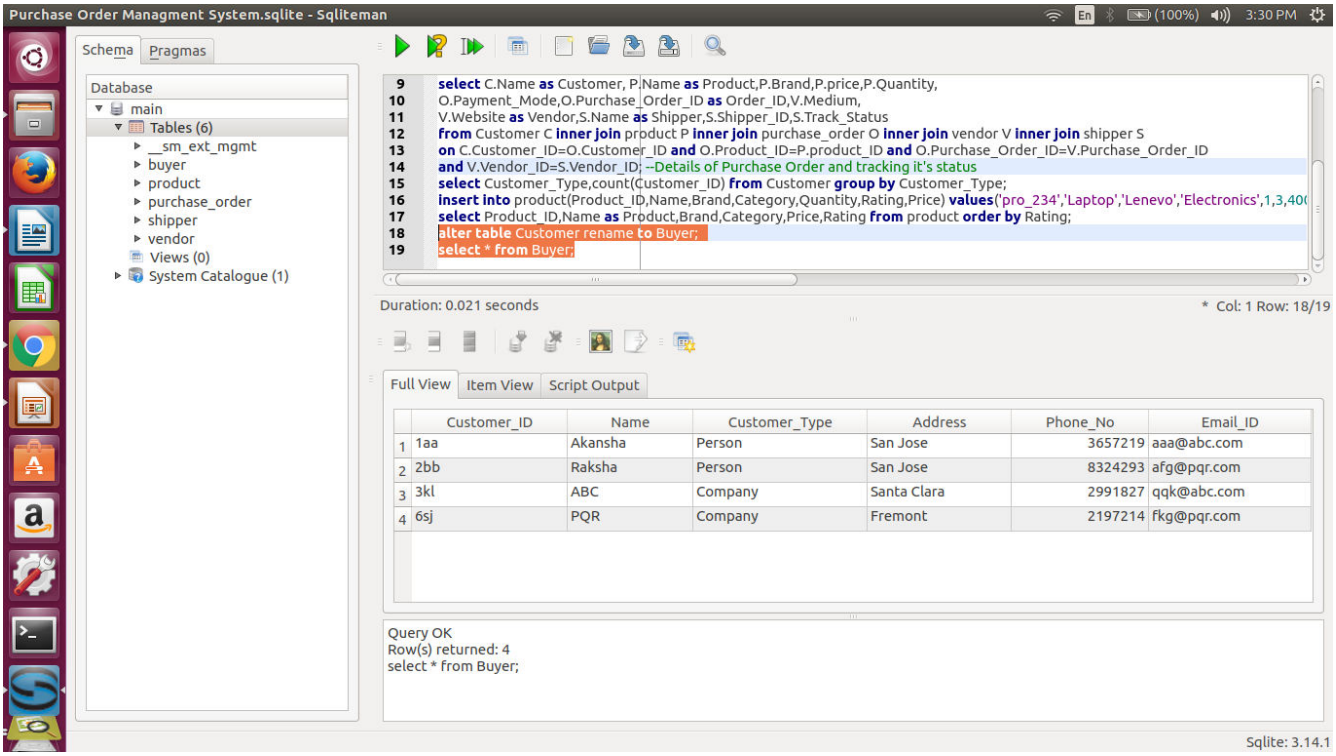
4.) Table vendor :



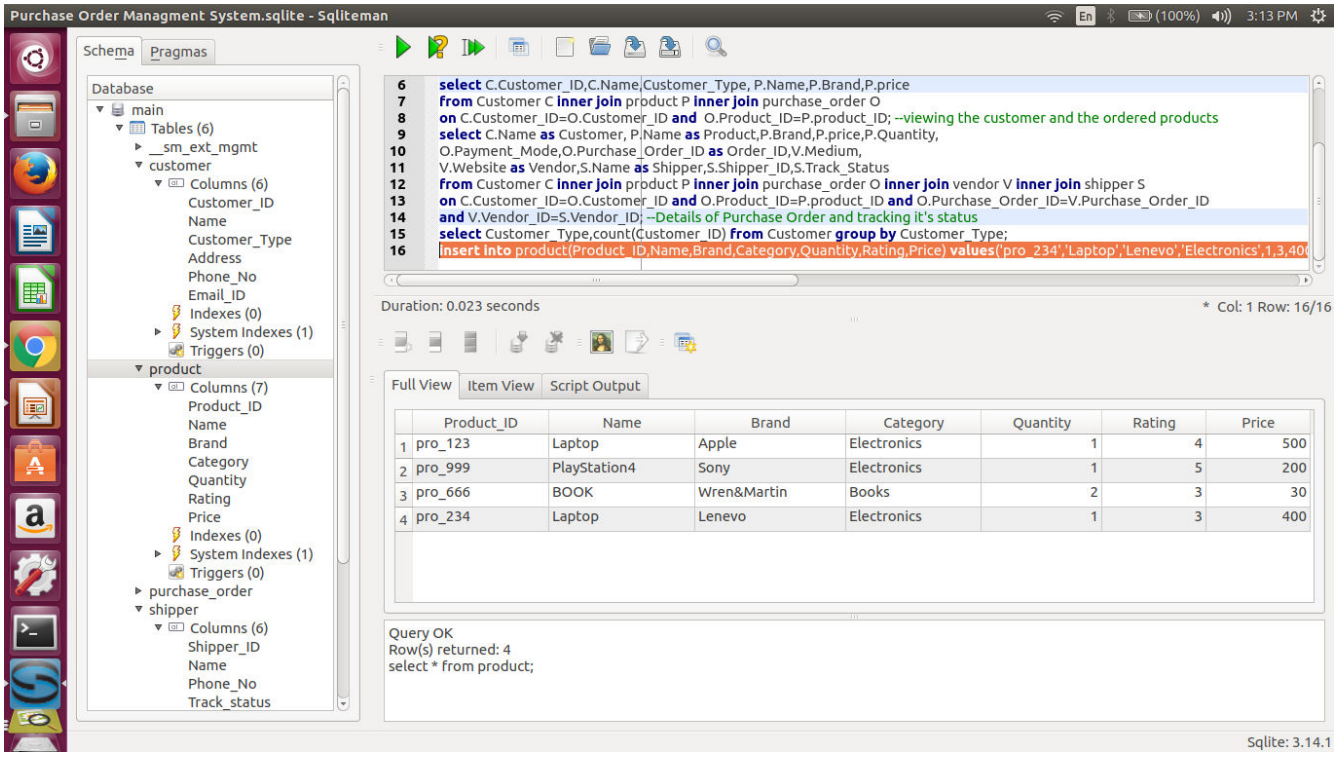
5.) Table shipper :



6.) Alter Query :

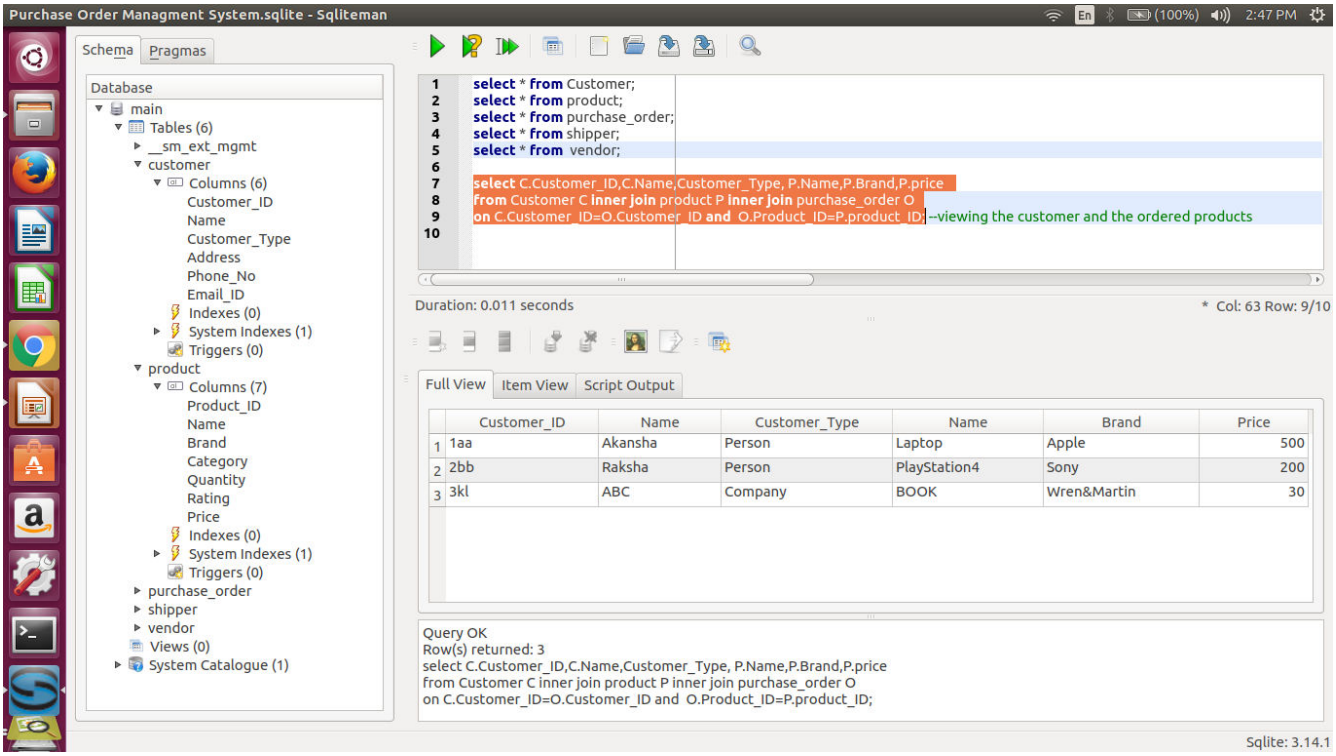


7.) Insert Query :

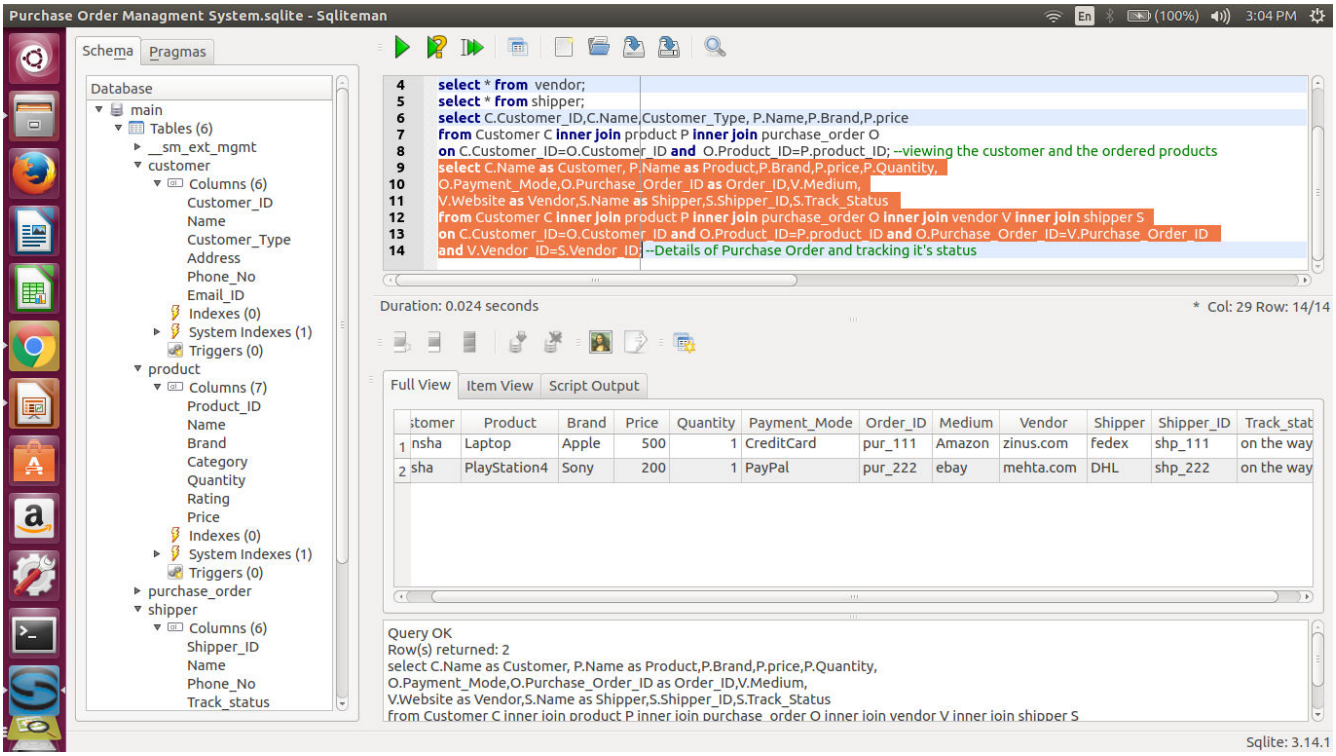


8.) JOIN Query :

Viewing customer, it’s type and ordered products:

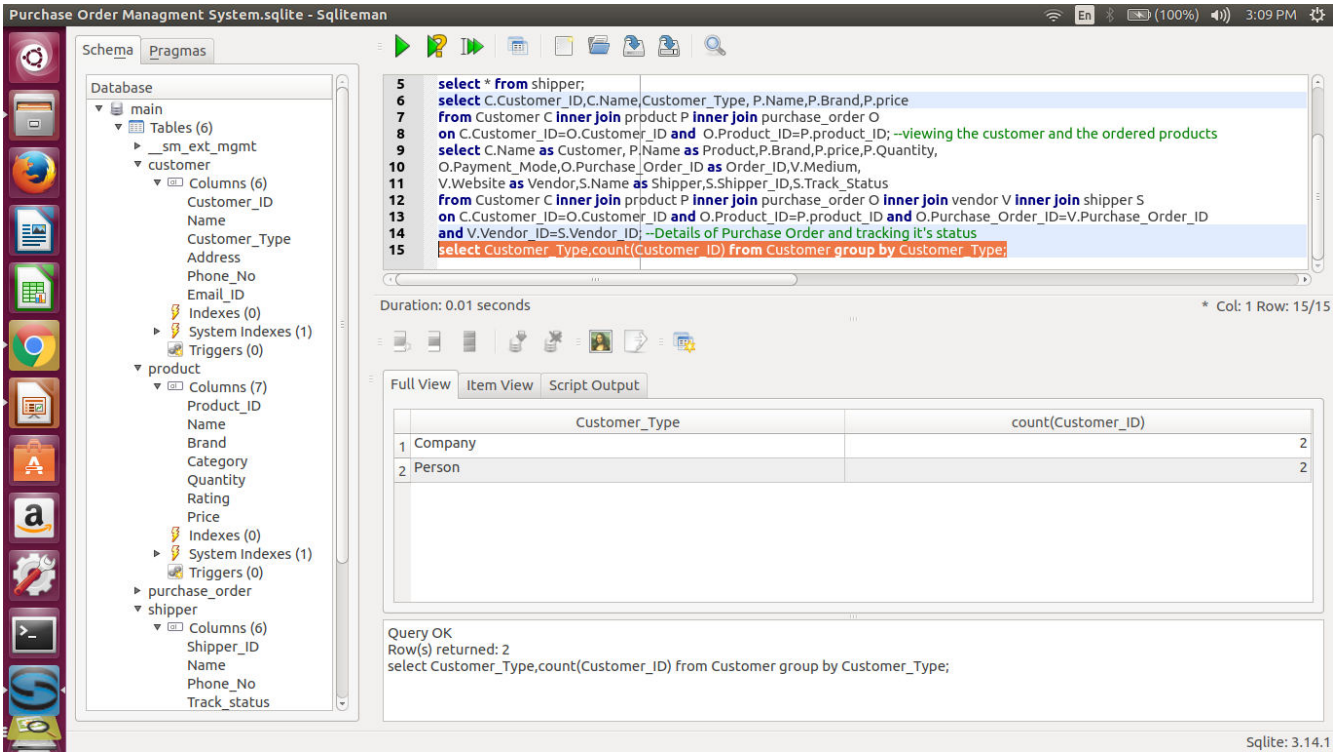


Viewing details of purchased order and traking status of ordered product:

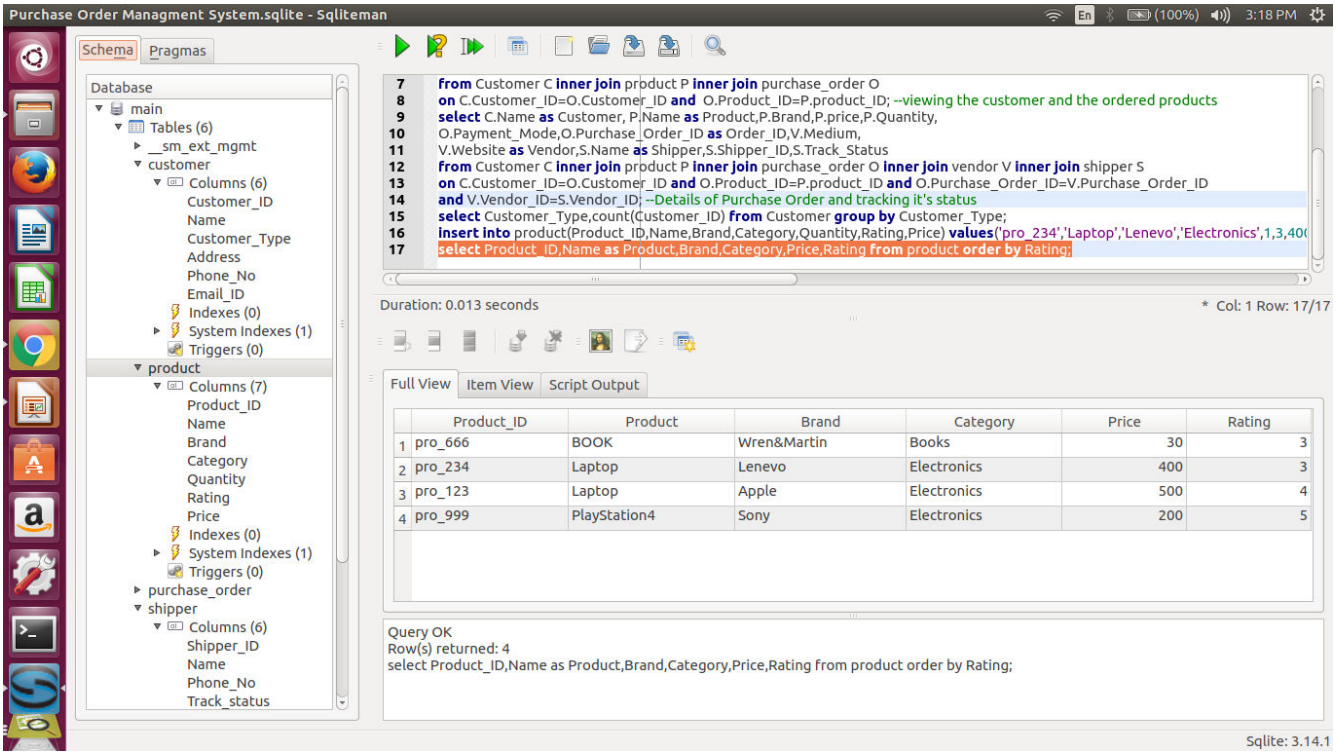


9.) Group By Query :

Counting customers grouped on their type(Company/Person):

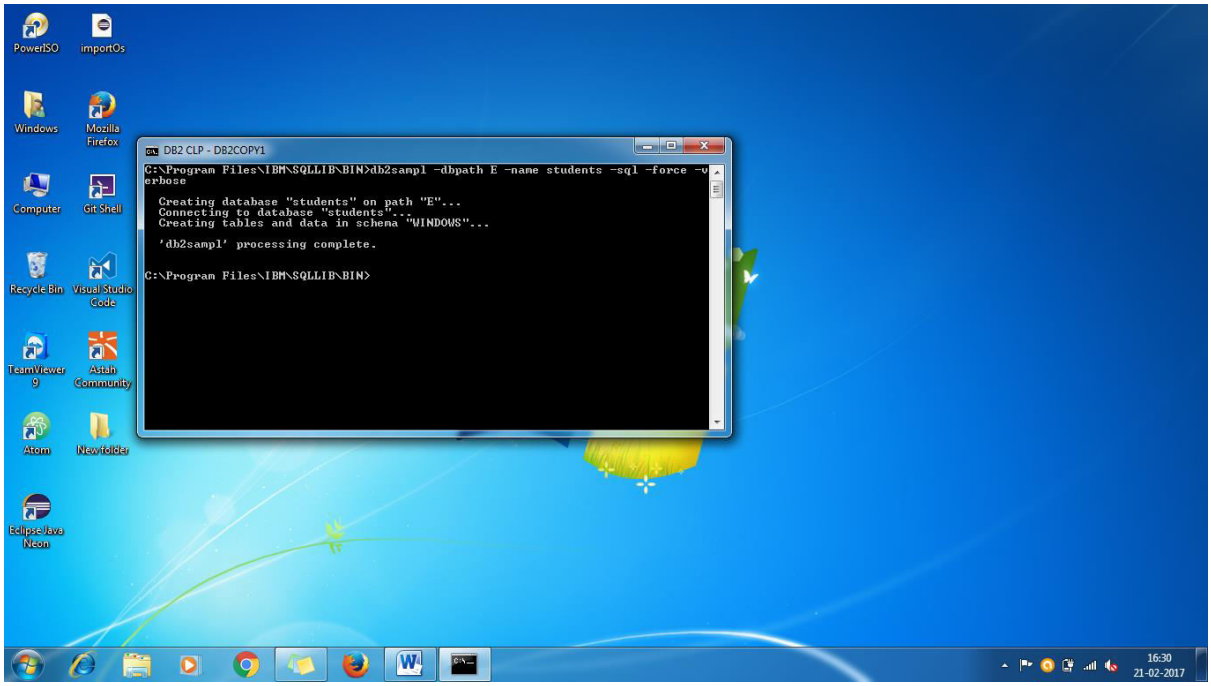


10.) Order By Query :

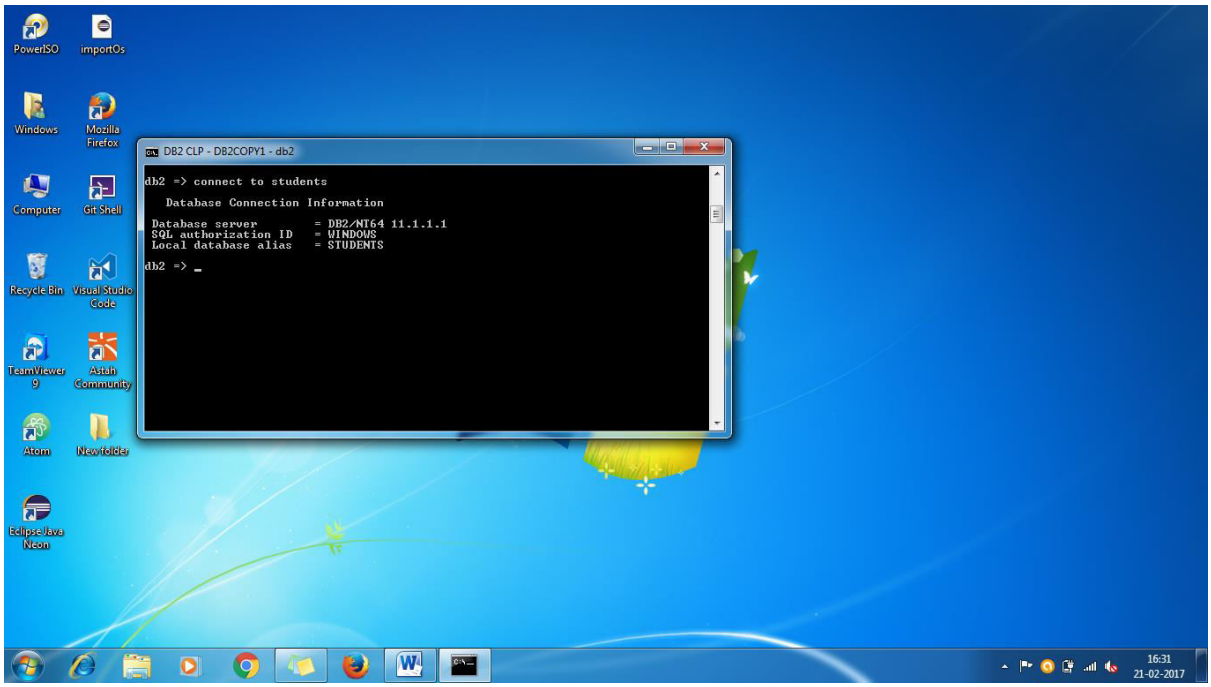


Steps to create a database using DB2 Express C:

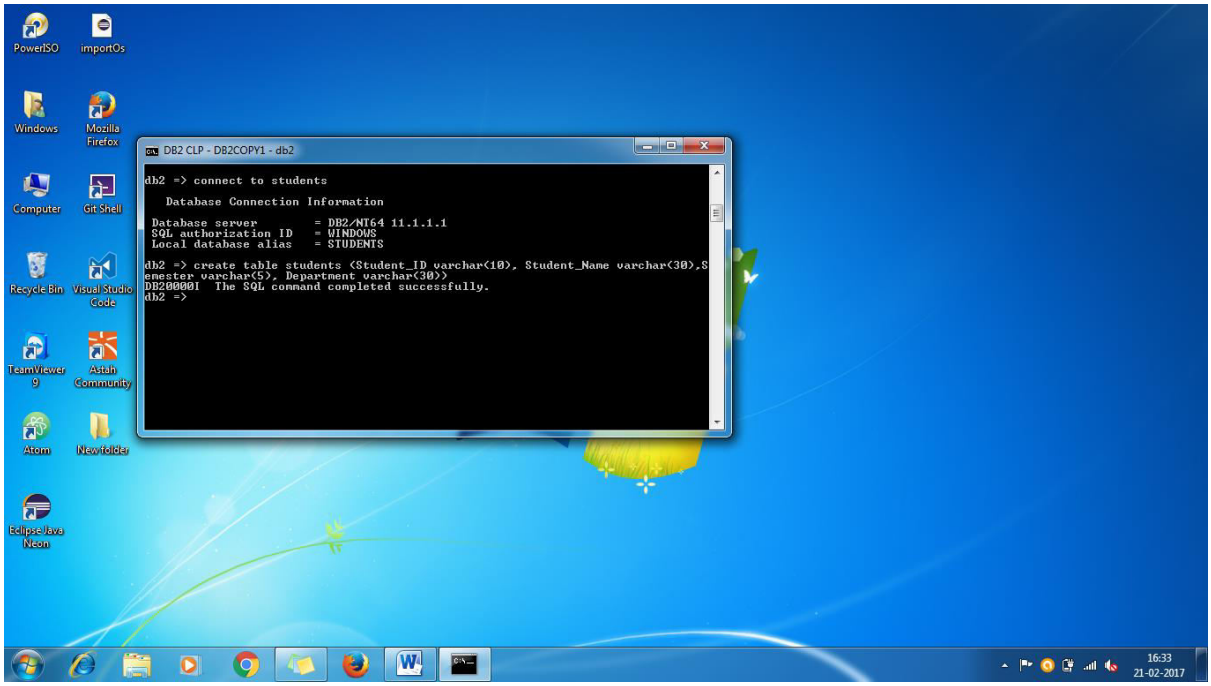
1. Using db2sampl command to create a sample database called “students”.



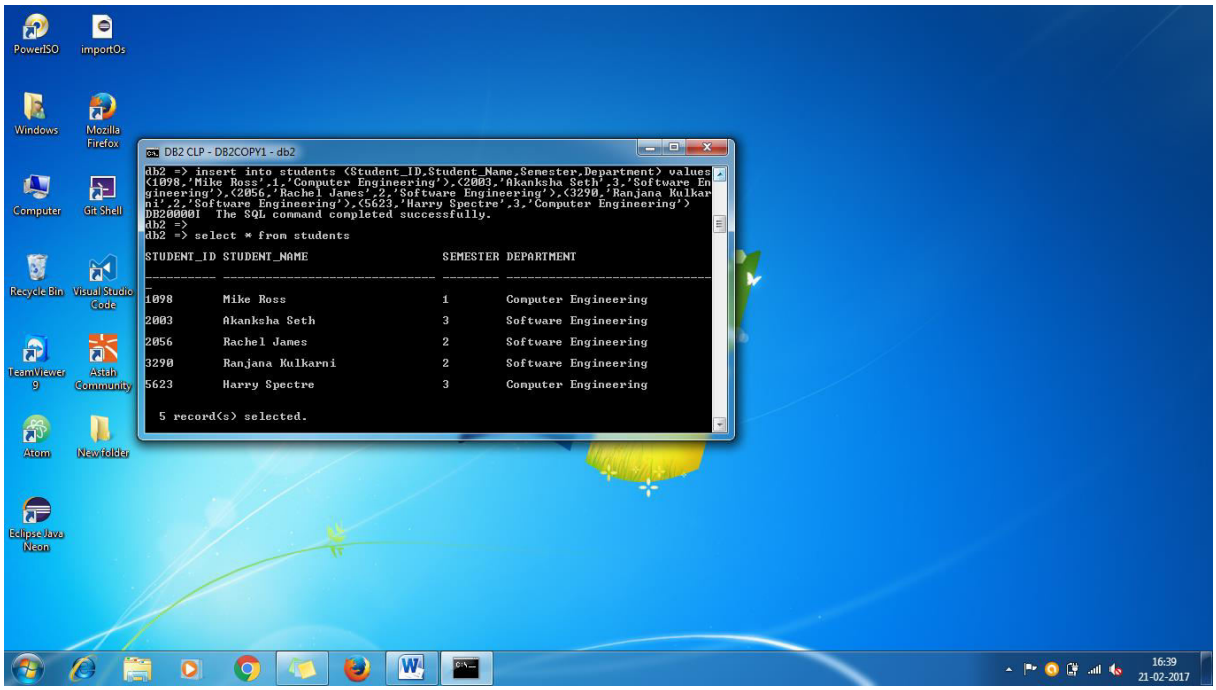
2. Connecting to the database “students”.



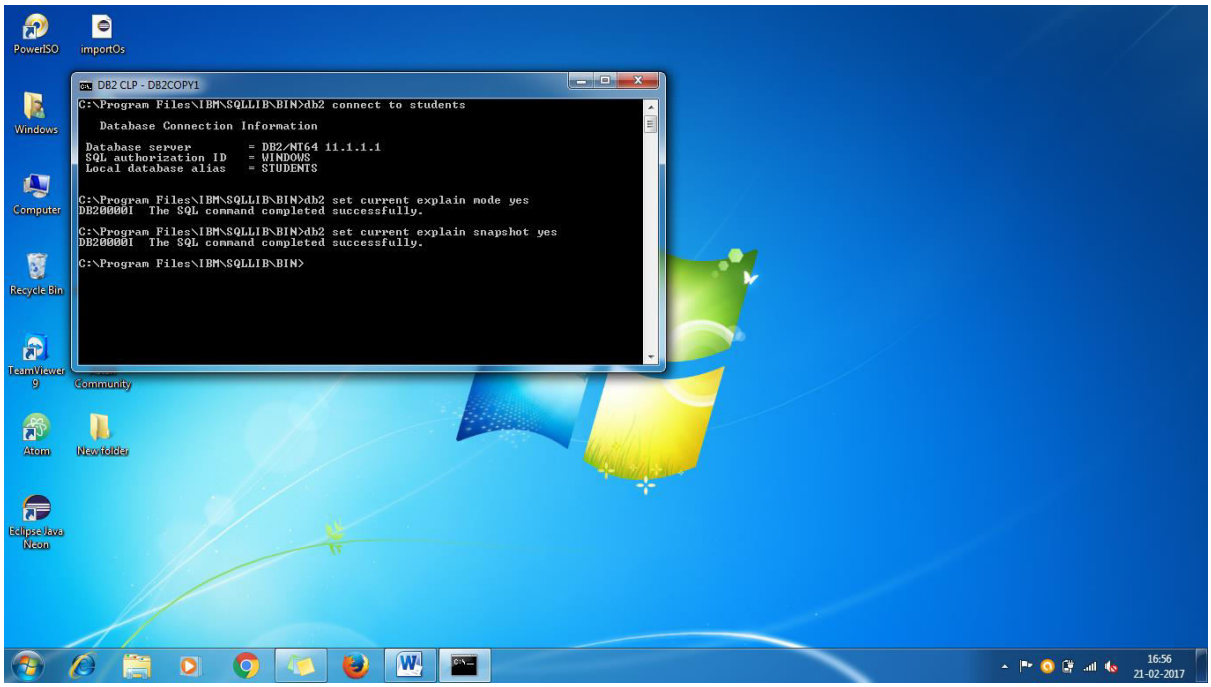
3. Creating a table “students” in the database using the ‘create table’ query.



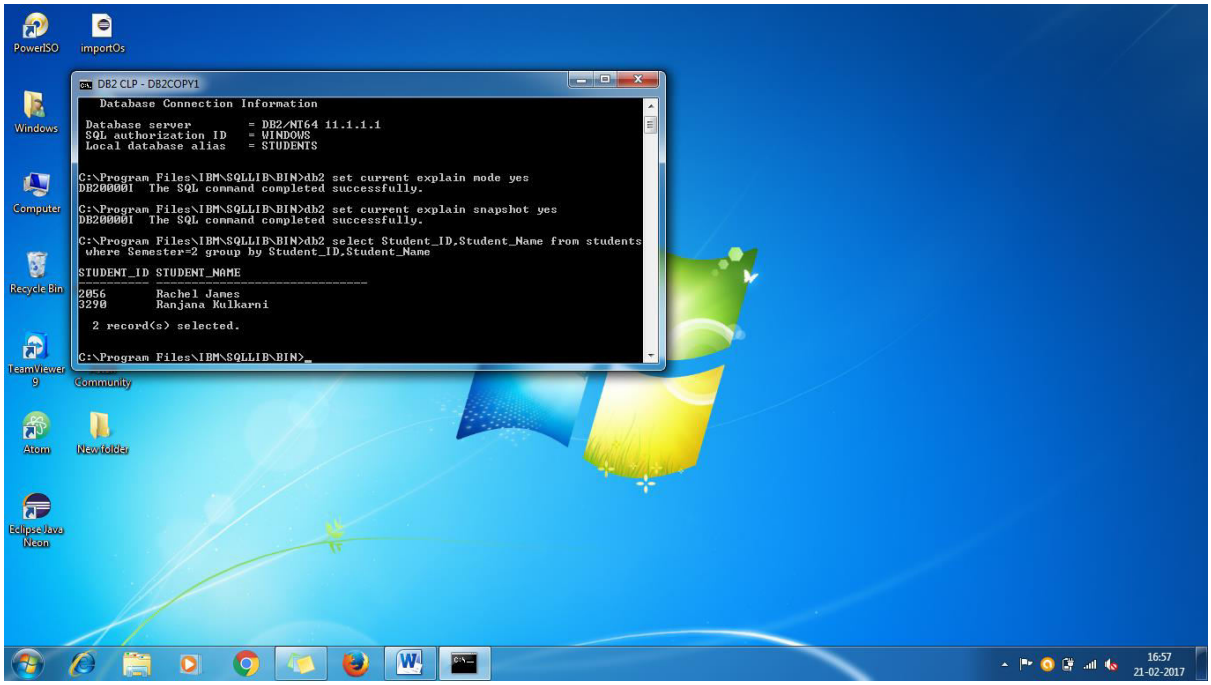
4. Insert sample data into the table “students” using ‘insert into table-name’ query.



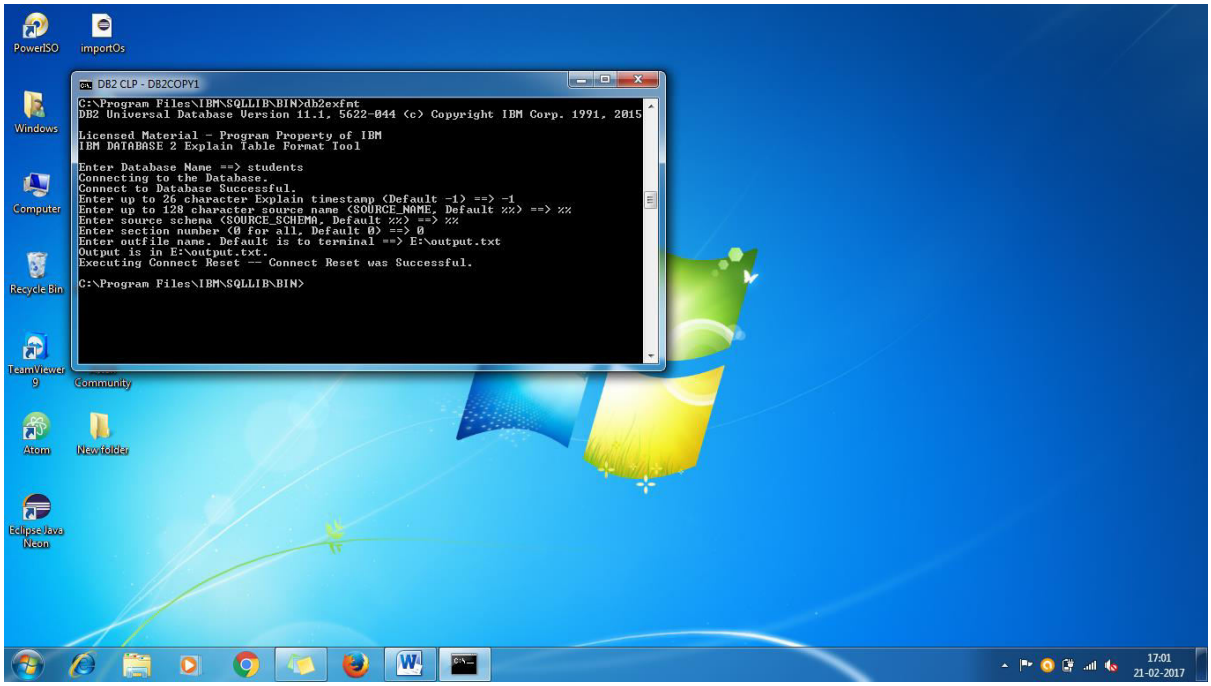
5. Setting the explain mode and snapshot to Yes using the ‘db2 set current explain mode’ query.



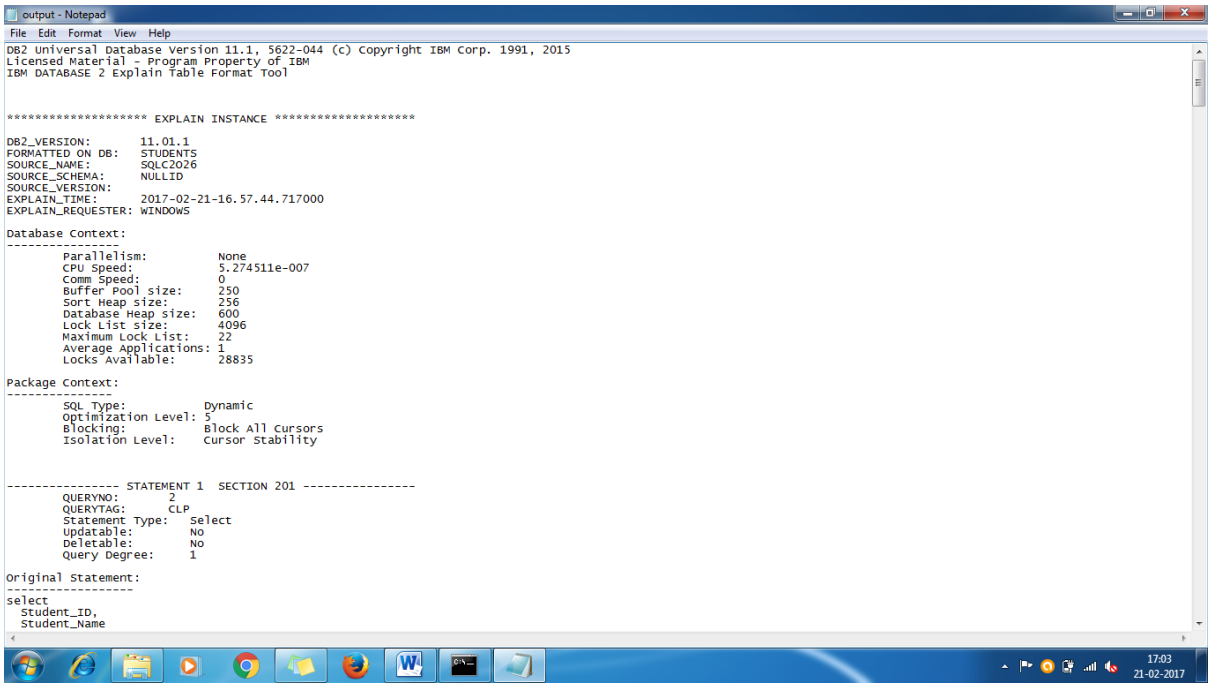
6. Run a sample query with ‘where’ and ‘group by’ clauses.

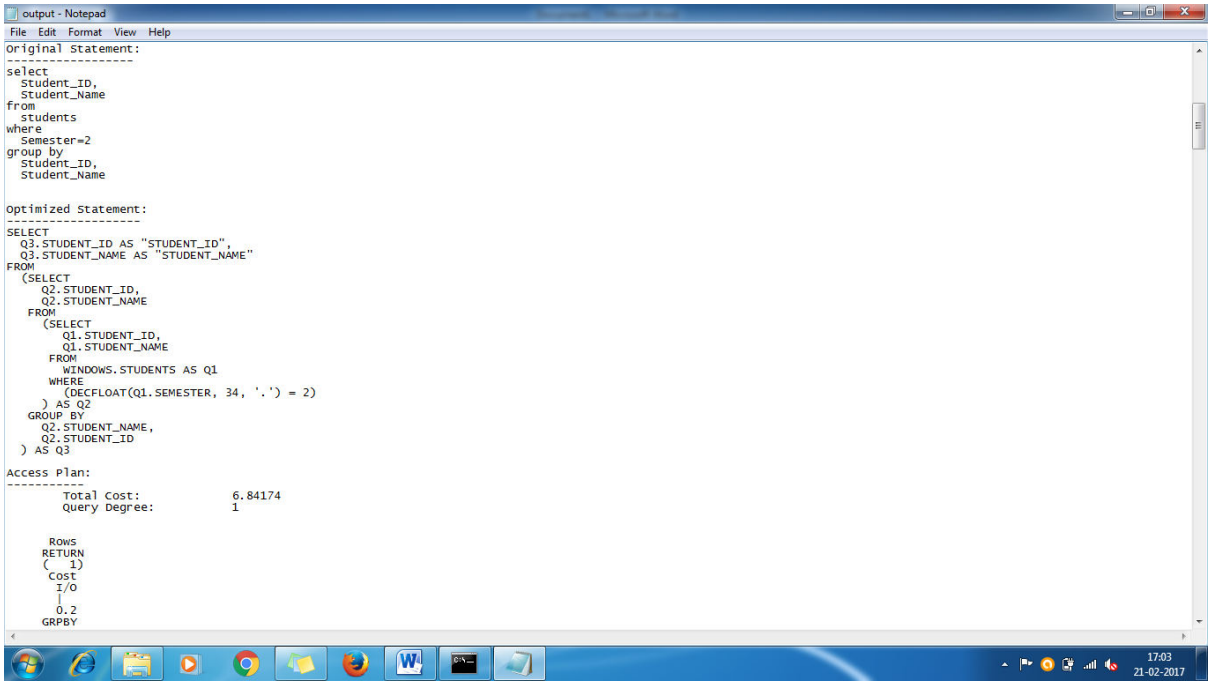


7. Generating query explain plan using ’db2exfmt’ tool.



8. Snapshots of the ‘db2exfmt’ output.

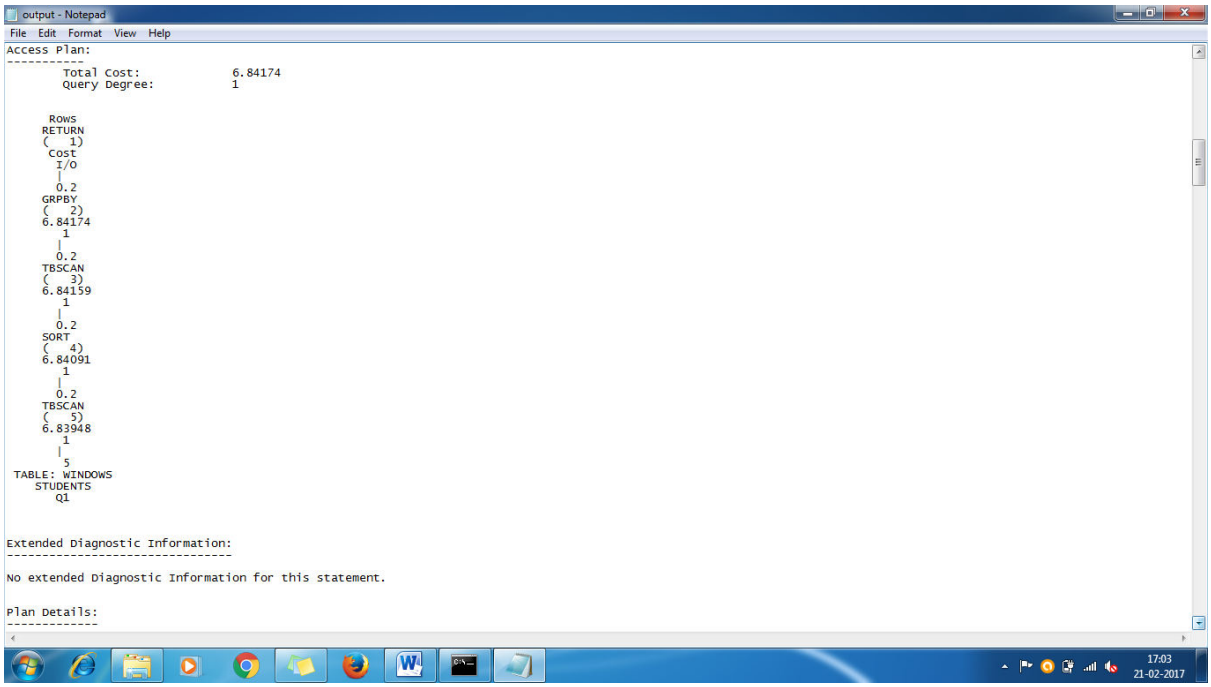




output - Notepad

File Edit Format View Help

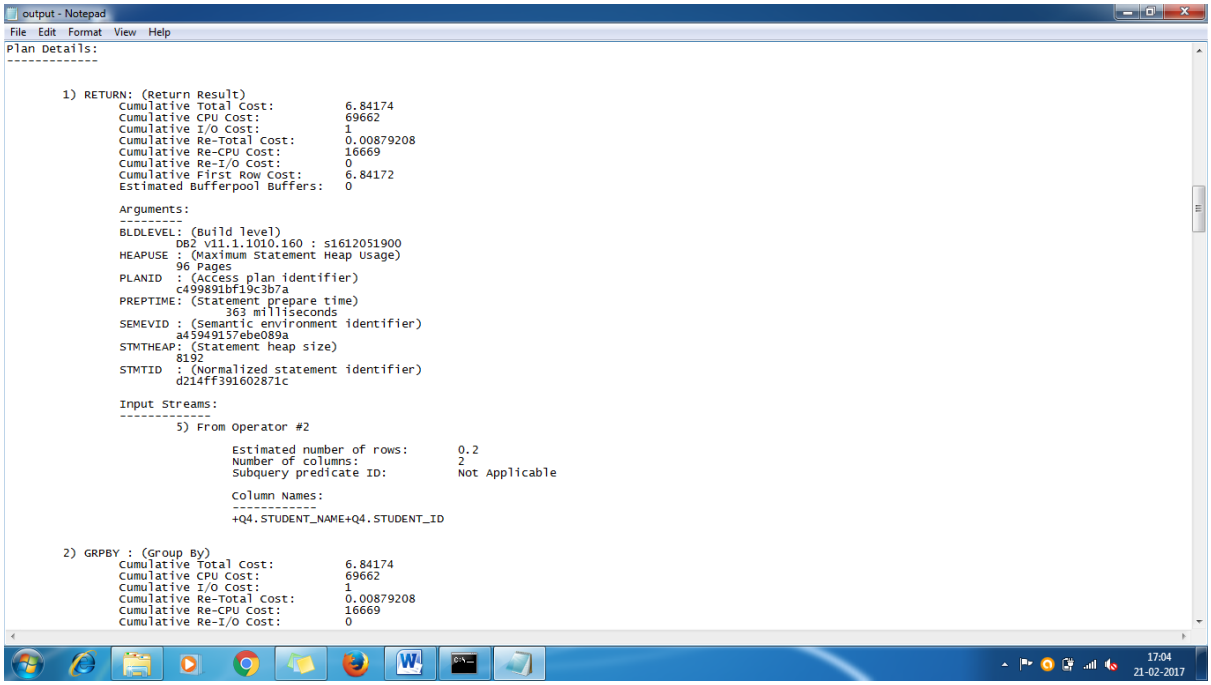
```
Original Statement:
-------------------
select
  Student_ID,
  Student_Name
from
  students
where
  Semester=2
group by
  Student_ID,
  Student_Name


Optimized Statement:
--------------------
SELECT
  Q3.STUDENT_ID AS "STUDENT_ID",
  Q3.STUDENT_NAME AS "STUDENT_NAME"
FROM
  (SELECT
     Q2.STUDENT_ID,
     Q2.STUDENT_NAME
   FROM
     (SELECT
        Q1.STUDENT_ID,
        Q1.STUDENT_NAME
      FROM
        WINDOWS.STUDENTS AS Q1
      WHERE
        (DECFLOAT(Q1.SEMESTER, 34, '.') = 2)
     ) AS Q2
   GROUP BY
     Q2.STUDENT_NAME,
     Q2.STUDENT_ID
  ) AS Q3

Access Plan:
------------
        Total Cost:             6.84174
        Query Degree:           1


      Rows
     RETURN
     (   1)
      Cost
       I/O
       |
       0.2
     GRPBY
```



output - Notepad

File Edit Format View Help

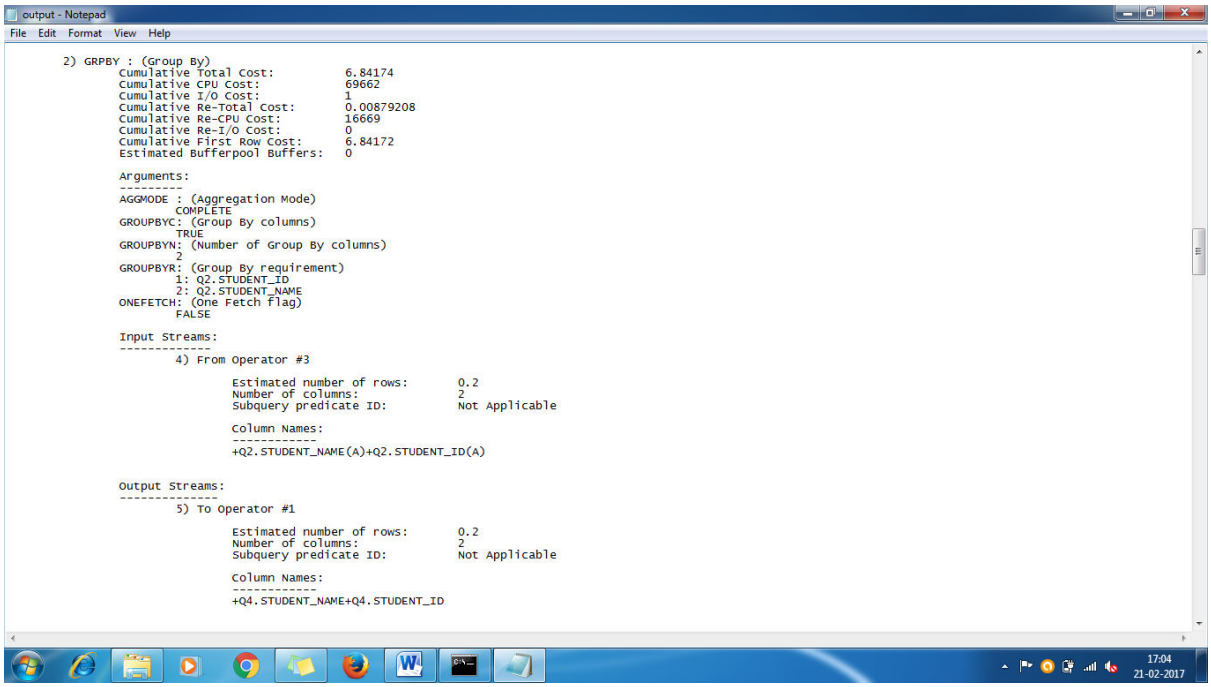
```
Access Plan:
------------
        Total Cost:             6.84174
        Query Degree:           1


      Rows
     RETURN
     (   1)
      Cost
       I/O
       |
       0.2
     GRPBY
     (   2)
     6.84174
       1
       |
       0.2
     TBSCAN
     (   3)
     6.84159
       1
       |
       0.2
     SORT
     (   4)
     6.84091
       1
       |
       0.2
     TBSCAN
     (   5)
     6.83948
       1
       |
       5
 TABLE: WINDOWS
    STUDENTS
       Q1


Extended Diagnostic Information:
--------------------------------

No extended Diagnostic Information for this statement.

Plan Details:
-------------
```



output - Notepad

File Edit Format View Help

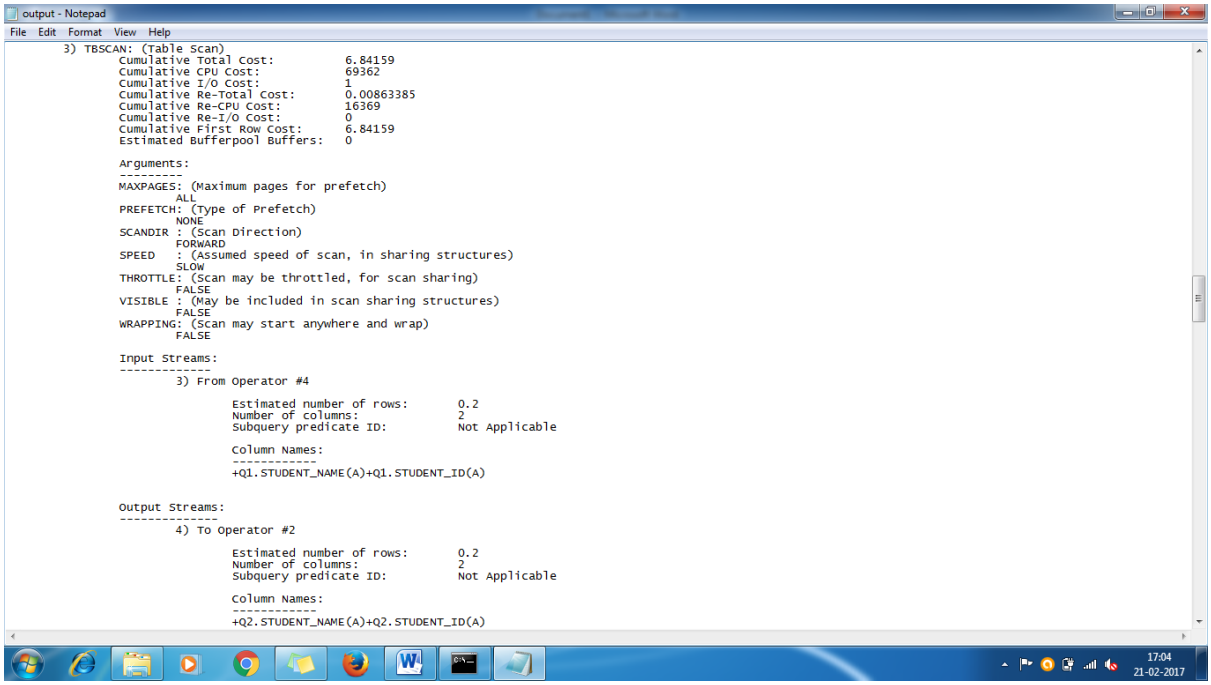
```
Plan Details:
-------------


        1) RETURN: (Return Result)
                Cumulative Total Cost:          6.84174
                Cumulative CPU Cost:            69662
                Cumulative I/O Cost:            1
                Cumulative Re-Total Cost:       0.00879208
                Cumulative Re-CPU Cost:         16669
                Cumulative Re-I/O Cost:         0
                Cumulative First Row Cost:      6.84172
                Estimated Bufferpool Buffers:   0

                Arguments:
                ---------
                BLDLEVEL: (Build level)
                        DB2 v11.1.1010.160 : s1612051900
                HEAPUSE : (Maximum Statement Heap Usage)
                        96 Pages
                PLANID  : (Access plan identifier)
                        c499891bf19c3b7a
                PREPTIME: (Statement prepare time)
                        363 milliseconds
                SEMEVID : (Semantic environment identifier)
                        a45949157ebe089a
                STMTHEAP: (Statement heap size)
                        8192
                STMTID  : (Normalized statement identifier)
                        d214ff391602871c

                Input Streams:
                -------------
                        5) From Operator #2

                                Estimated number of rows:       0.2
                                Number of columns:              2
                                Subquery predicate ID:          Not Applicable

                                Column Names:
                                ------------
                                +Q4.STUDENT_NAME+Q4.STUDENT_ID


        2) GRPBY : (Group By)
                Cumulative Total Cost:          6.84174
                Cumulative CPU Cost:            69662
                Cumulative I/O Cost:            1
                Cumulative Re-Total Cost:       0.00879208
                Cumulative Re-CPU Cost:         16669
                Cumulative Re-I/O Cost:         0
```

output - Notepad

File Edit Format View Help

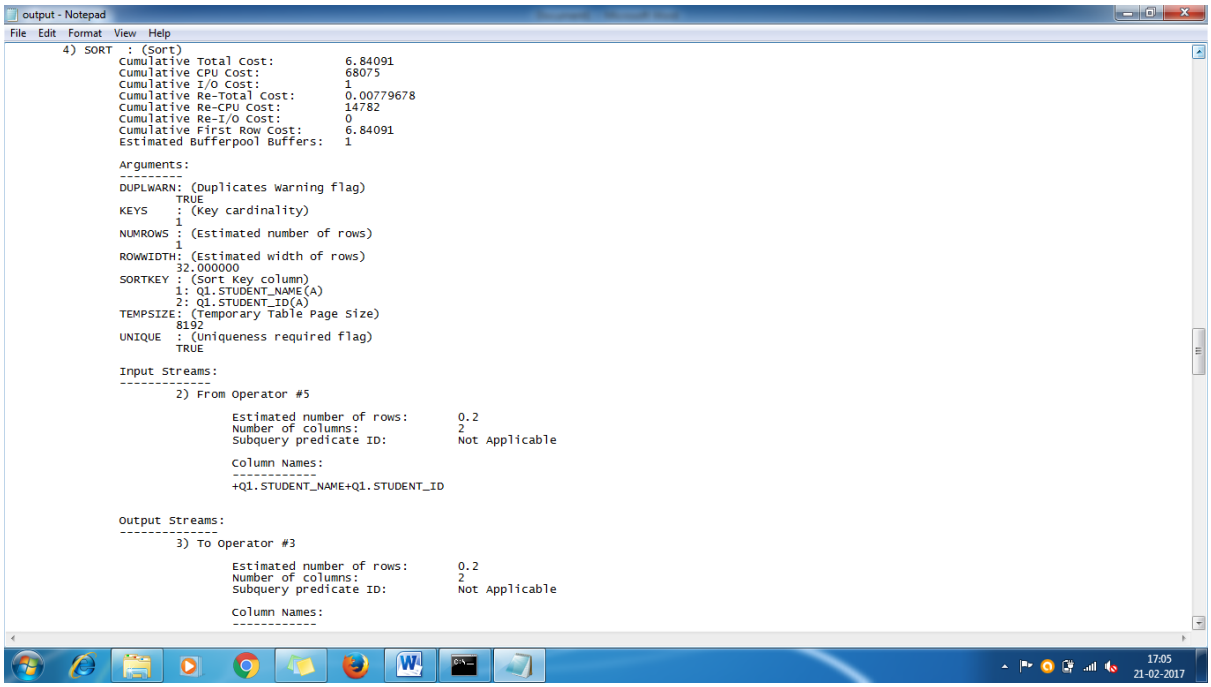
```
        2) GRPBY : (Group By)
                Cumulative Total Cost:          6.84174
                Cumulative CPU Cost:            69662
                Cumulative I/O Cost:            1
                Cumulative Re-Total Cost:       0.00879208
                Cumulative Re-CPU Cost:         16669
                Cumulative Re-I/O Cost:         0
                Cumulative First Row Cost:      6.84172
                Estimated Bufferpool Buffers:   0

                Arguments:
                ---------
                AGGMODE : (Aggregation Mode)
                        COMPLETE
                GROUPBYC: (Group By columns)
                        TRUE
                GROUPBYN: (Number of Group By columns)
                        2
                GROUPBYR: (Group By requirement)
                        1: Q2.STUDENT_ID
                        2: Q2.STUDENT_NAME
                ONEFETCH: (One Fetch flag)
                        FALSE

                Input Streams:
                -------------
                        4) From Operator #3

                                Estimated number of rows:       0.2
                                Number of columns:              2
                                Subquery predicate ID:          Not Applicable

                                Column Names:
                                ------------
                                +Q2.STUDENT_NAME(A)+Q2.STUDENT_ID(A)


                Output Streams:
                --------------
                        5) To Operator #1

                                Estimated number of rows:       0.2
                                Number of columns:              2
                                Subquery predicate ID:          Not Applicable

                                Column Names:
                                ------------
                                +Q4.STUDENT_NAME+Q4.STUDENT_ID
```



output - Notepad

File Edit Format View Help

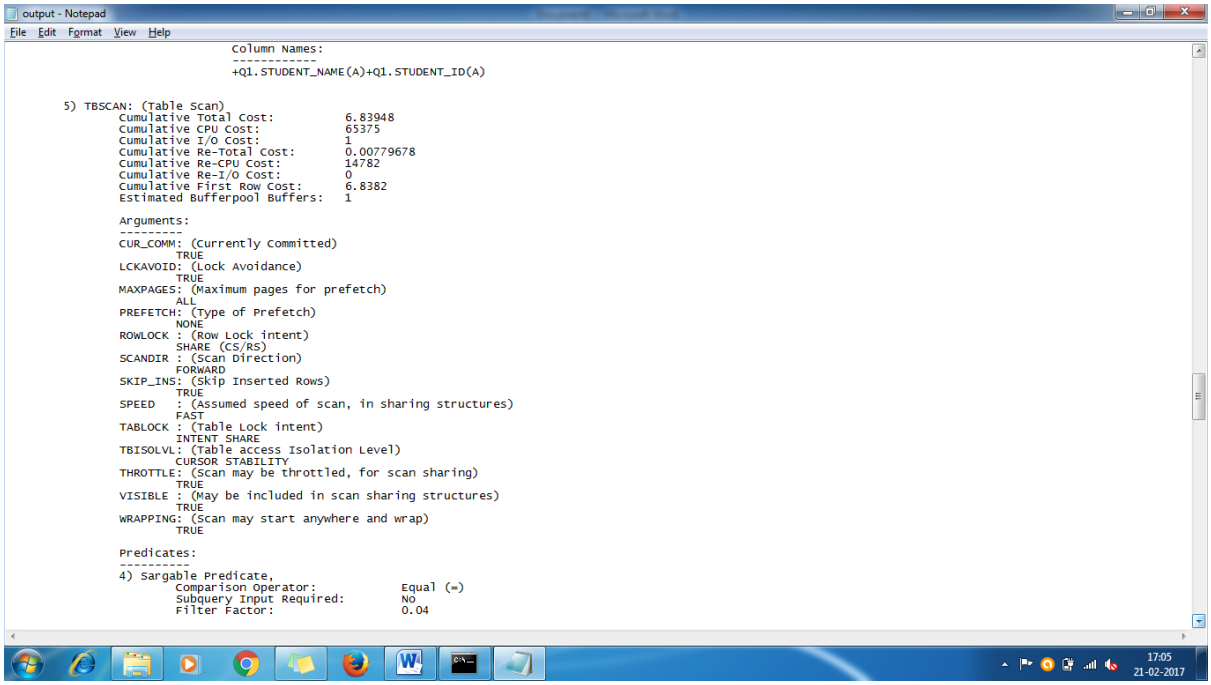
```
        3) TBSCAN: (Table Scan)
                Cumulative Total Cost:          6.84159
                Cumulative CPU Cost:            69362
                Cumulative I/O Cost:            1
                Cumulative Re-Total Cost:       0.00863385
                Cumulative Re-CPU Cost:         16369
                Cumulative Re-I/O Cost:         0
                Cumulative First Row Cost:      6.84159
                Estimated Bufferpool Buffers:   0

                Arguments:
                ---------
                MAXPAGES: (Maximum pages for prefetch)
                        ALL
                PREFETCH: (Type of Prefetch)
                        NONE
                SCANDIR : (Scan Direction)
                        FORWARD
                SPEED   : (Assumed speed of scan, in sharing structures)
                        SLOW
                THROTTLE: (Scan may be throttled, for scan sharing)
                        FALSE
                VISIBLE : (May be included in scan sharing structures)
                        FALSE
                WRAPPING: (Scan may start anywhere and wrap)
                        FALSE

                Input Streams:
                -------------
                        3) From Operator #4

                                Estimated number of rows:       0.2
                                Number of columns:              2
                                Subquery predicate ID:          Not Applicable

                                Column Names:
                                ------------
                                +Q1.STUDENT_NAME(A)+Q1.STUDENT_ID(A)


                Output Streams:
                --------------
                        4) To Operator #2

                                Estimated number of rows:       0.2
                                Number of columns:              2
                                Subquery predicate ID:          Not Applicable

                                Column Names:
                                ------------
                                +Q2.STUDENT_NAME(A)+Q2.STUDENT_ID(A)
```



output - Notepad

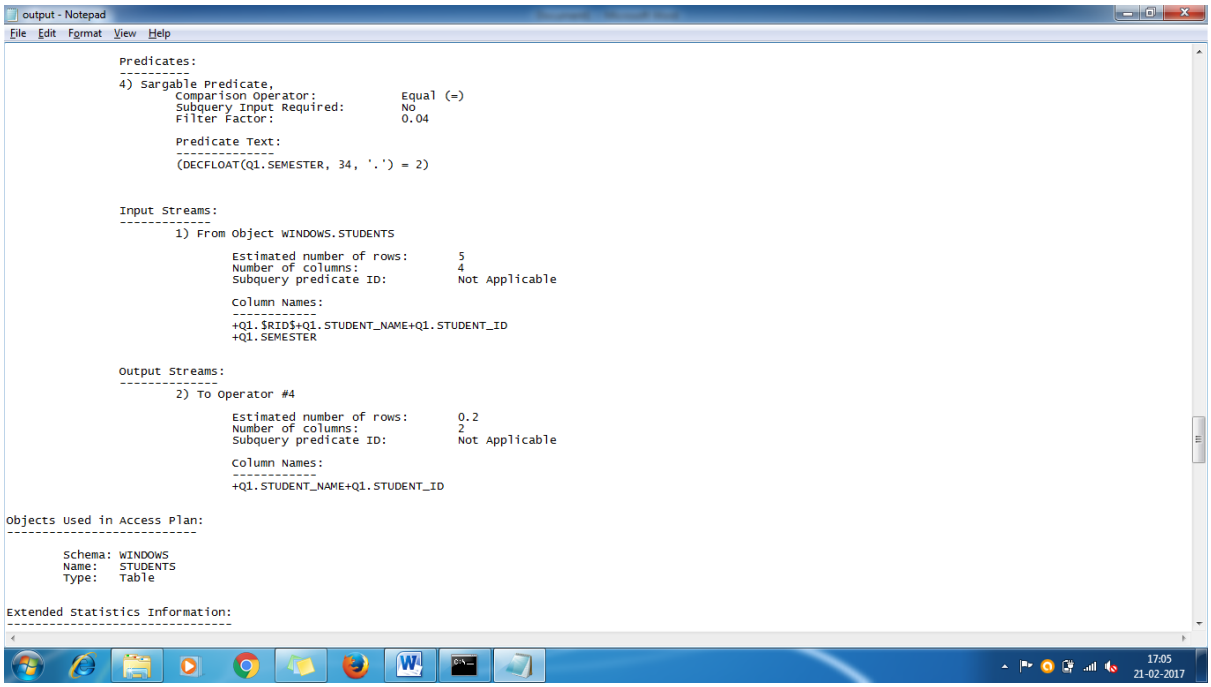
File Edit Format View Help

```
        4) SORT  : (Sort)
                Cumulative Total Cost:          6.84091
                Cumulative CPU Cost:            68075
                Cumulative I/O Cost:            1
                Cumulative Re-Total Cost:       0.00779678
                Cumulative Re-CPU Cost:         14782
                Cumulative Re-I/O Cost:         0
                Cumulative First Row Cost:      6.84091
                Estimated Bufferpool Buffers:   1

                Arguments:
                ---------
                DUPLWARN: (Duplicates Warning flag)
                        TRUE
                KEYS    : (Key cardinality)
                        1
                NUMROWS : (Estimated number of rows)
                        1
                ROWWIDTH: (Estimated width of rows)
                        32.000000
                SORTKEY : (Sort Key column)
                        1: Q1.STUDENT_NAME(A)
                        2: Q1.STUDENT_ID(A)
                TEMPSIZE: (Temporary Table Page Size)
                        8192
                UNIQUE  : (Uniqueness required flag)
                        TRUE

                Input Streams:
                -------------
                        2) From Operator #5

                                Estimated number of rows:       0.2
                                Number of columns:              2
                                Subquery predicate ID:          Not Applicable

                                Column Names:
                                ------------
                                +Q1.STUDENT_NAME+Q1.STUDENT_ID


                Output Streams:
                --------------
                        3) To Operator #3

                                Estimated number of rows:       0.2
                                Number of columns:              2
                                Subquery predicate ID:          Not Applicable

                                Column Names:
                                ------------
```


output - Notepad
File Edit Format View Help
Column Names:

+Q1.STUDENT_NAME(A)+Q1.STUDENT_ID(A)
5) TBSCAN: (Table Scan)
Cumulative Total Cost: 6.83948
Cumulative CPU Cost: 65375
Cumulative I/O Cost: 1
Cumulative Re-Total Cost: 0.00779678
Cumulative Re-CPU Cost: 14782
Cumulative Re-I/O Cost: 0
Cumulative First Row Cost: 6.8382
Estimated Bufferpool Buffers: 1
Arguments:

CUR_COMM: (Currently Committed)
TRUE
LCKAVOID: (Lock Avoidance)
TRUE
MAXPAGES: (Maximum pages for prefetch)
ALL
PREFETCH: (Type of Prefetch)
NONE
ROWLOCK : (Row Lock intent)
SHARE (CS/RS)
SCANDIR : (Scan Direction)
FORWARD
SKIP_INS: (Skip Inserted Rows)
TRUE
SPEED : (Assumed speed of scan, in sharing structures)
FAST
TABLOCK : (Table Lock intent)
INTENT SHARE
TBISOLVL: (Table access Isolation Level)
CURSOR STABILITY
THROTTLE: (Scan may be throttled, for scan sharing)
TRUE
VISIBLE : (May be included in scan sharing structures)
TRUE
WRAPPING: (Scan may start anywhere and wrap)
TRUE
Predicates:
----
4) Sargable Predicate,
Comparison Operator: Equal (=)
Subquery Input Required: No
Filter Factor: 0.04
17:05
21-02-2017


output - Notepad
File Edit Format View Help
Predicates:
----
4) Sargable Predicate,
Comparison Operator: Equal (=)
Subquery Input Required: No
Filter Factor: 0.04
Predicate Text:

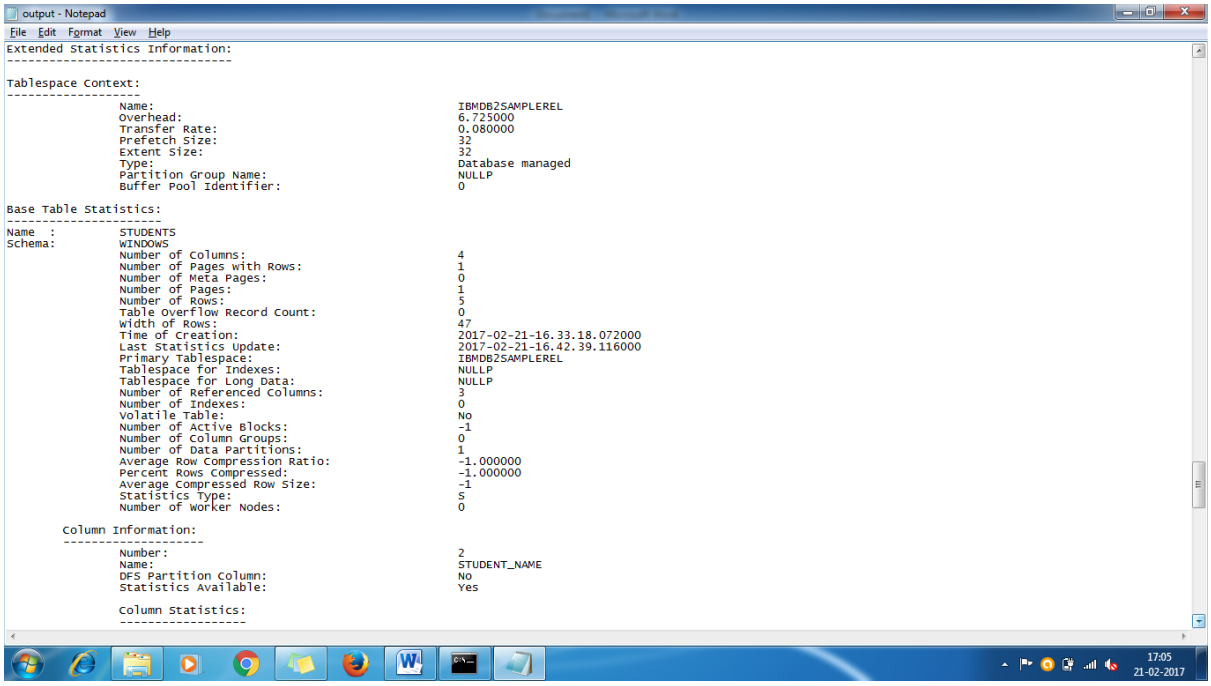
(DECFLOAT(Q1.SEMESTER, 34, '.') = 2)
Input Streams:
----
1) From Object WINDOWS.STUDENTS
Estimated number of rows: 5
Number of columns: 4
Subquery predicate ID: Not Applicable
Column Names:

+Q1.RID+Q1.STUDENT_NAME+Q1.STUDENT_ID
+Q1.SEMESTER
Output Streams:
----
2) To Operator #4
Estimated number of rows: 0.2
Number of columns: 2
Subquery predicate ID: Not Applicable
Column Names:

+Q1.STUDENT_NAME+Q1.STUDENT_ID
Objects Used in Access Plan:

Schema: WINDOWS
Name: STUDENTS
Type: Table
Extended Statistics Information:

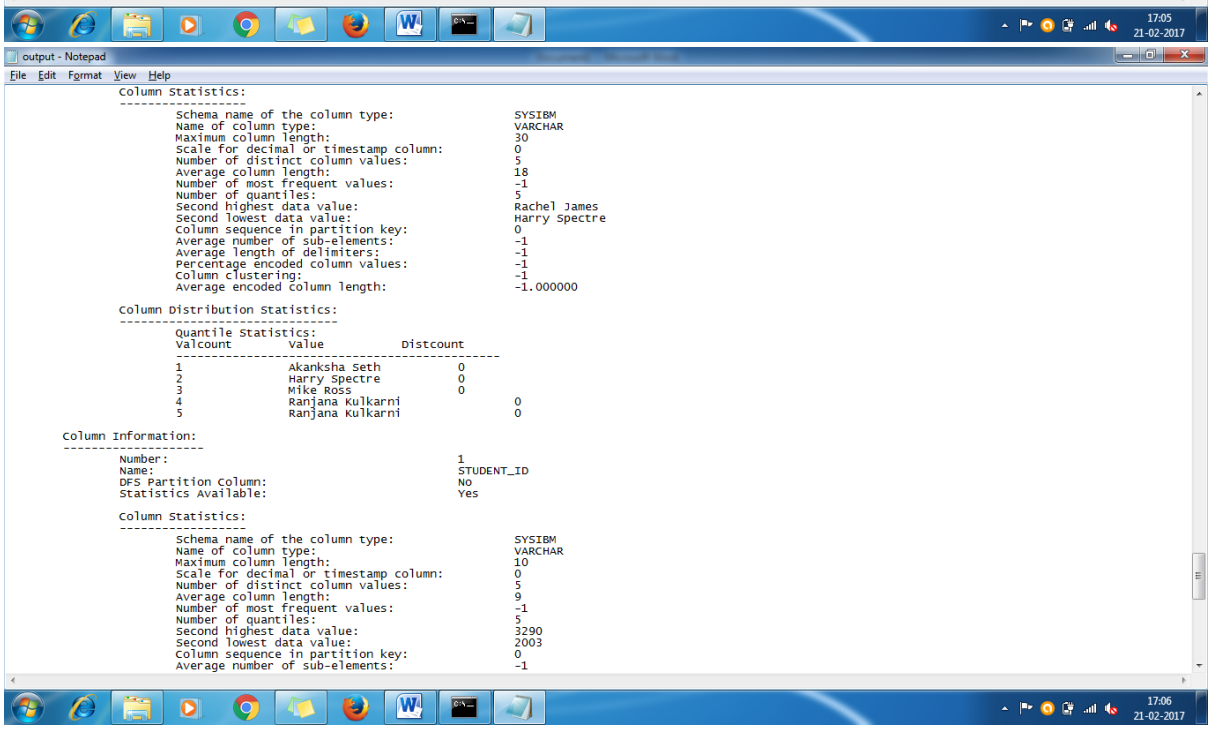
17:05
21-02-2017



output - Notepad

File Edit Format View Help

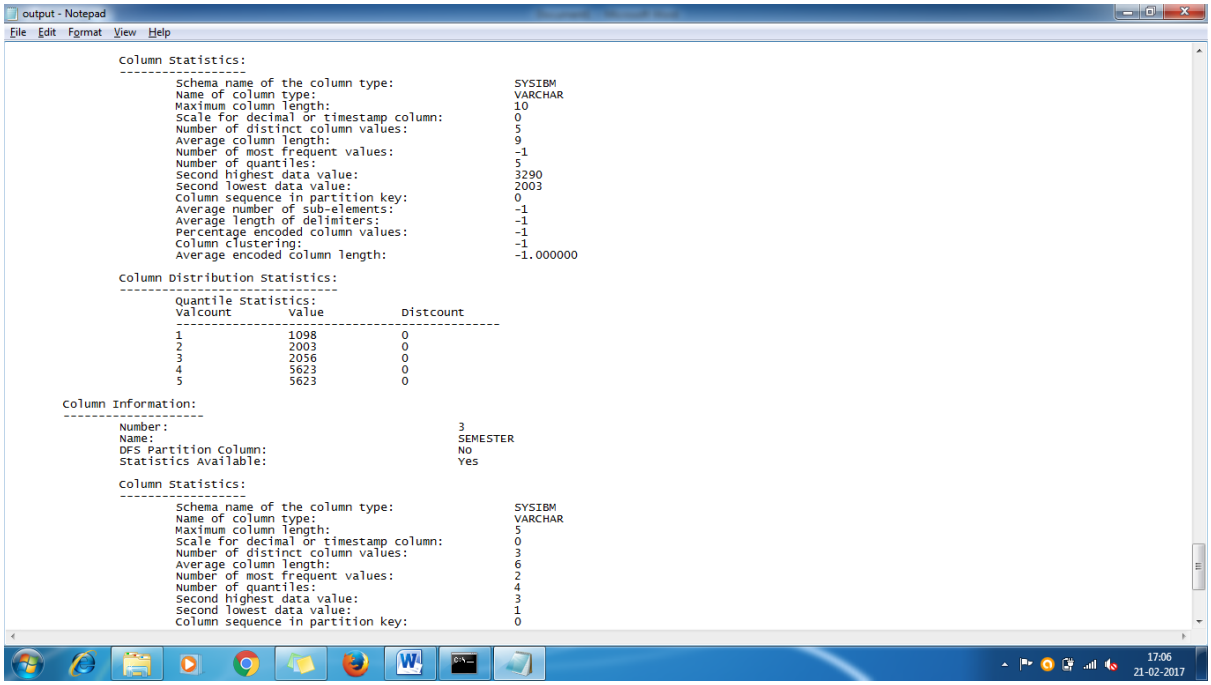
```
Extended Statistics Information:
--------------------------------

Tablespace Context:
-------------------
                Name:                                   IBMDB2SAMPLEREL
                Overhead:                               6.725000
                Transfer Rate:                          0.080000
                Prefetch Size:                          32
                Extent Size:                            32
                Type:                                   Database managed
                Partition Group Name:                   NULLP
                Buffer Pool Identifier:                 0

Base Table Statistics:
----------------------
Name   :        STUDENTS
Schema:         WINDOWS
                Number of Columns:                      4
                Number of Pages with Rows:              1
                Number of Meta Pages:                   0
                Number of Pages:                        1
                Number of Rows:                         5
                Table Overflow Record Count:            0
                Width of Rows:                          47
                Time of Creation:                       2017-02-21-16.33.18.072000
                Last Statistics Update:                 2017-02-21-16.42.39.116000
                Primary Tablespace:                     IBMDB2SAMPLEREL
                Tablespace for Indexes:                 NULLP
                Tablespace for Long Data:               NULLP
                Number of Referenced Columns:           3
                Number of Indexes:                      0
                Volatile Table:                         No
                Number of Active Blocks:                -1
                Number of Column Groups:                0
                Number of Data Partitions:              1
                Average Row Compression Ratio:          -1.000000
                Percent Rows Compressed:                -1.000000
                Average Compressed Row Size:            -1
                Statistics Type:                        S
                Number of Worker Nodes:                 0

        Column Information:
        -------------------
                Number:                                 2
                Name:                                   STUDENT_NAME
                DFS Partition Column:                   No
                Statistics Available:                   Yes

                Column Statistics:
                ------------------
```



output - Notepad

File Edit Format View Help

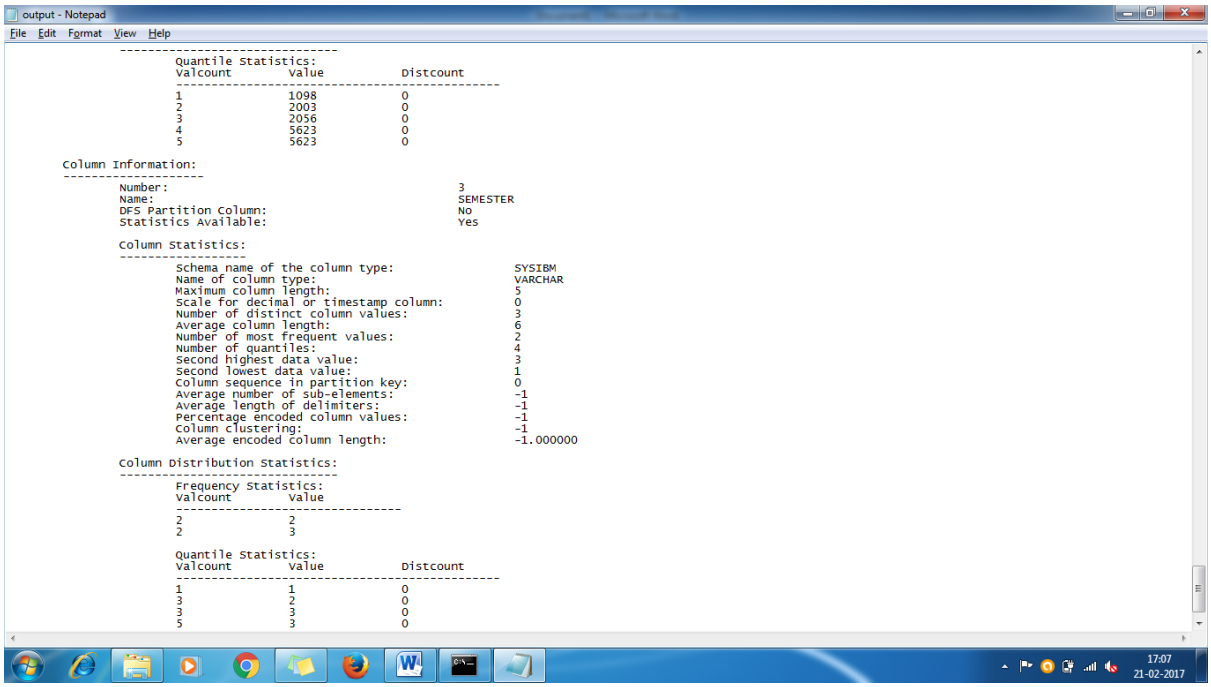
```
                Column Statistics:
                ------------------
                        Schema name of the column type:         SYSIBM
                        Name of column type:                    VARCHAR
                        Maximum column length:                  30
                        Scale for decimal or timestamp column:  0
                        Number of distinct column values:       5
                        Average column length:                  18
                        Number of most frequent values:         -1
                        Number of quantiles:                    5
                        Second highest data value:              Rachel James
                        Second lowest data value:               Harry Spectre
                        Column sequence in partition key:       0
                        Average number of sub-elements:         -1
                        Average length of delimiters:           -1
                        Percentage encoded column values:       -1
                        Column clustering:                      -1
                        Average encoded column length:          -1.000000

                Column Distribution Statistics:
                -------------------------------
                        Quantile Statistics:
                        Valcount        Value           Distcount
                        ---------------------------------------------
                        1               Akanksha Seth           0
                        2               Harry Spectre           0
                        3               Mike Ross               0
                        4               Ranjana Kulkarni                0
                        5               Ranjana Kulkarni                0

        Column Information:
        -------------------
                Number:                                 1
                Name:                                   STUDENT_ID
                DFS Partition Column:                   No
                Statistics Available:                   Yes

                Column Statistics:
                ------------------
                        Schema name of the column type:         SYSIBM
                        Name of column type:                    VARCHAR
                        Maximum column length:                  10
                        Scale for decimal or timestamp column:  0
                        Number of distinct column values:       5
                        Average column length:                  9
                        Number of most frequent values:         -1
                        Number of quantiles:                    5
                        Second highest data value:              3290
                        Second lowest data value:               2003
                        Column sequence in partition key:       0
                        Average number of sub-elements:         -1
```



output - Notepad

File Edit Format View Help

```
        Column Statistics:
        ------------------
                Schema name of the column type:                 SYSIBM
                Name of column type:                            VARCHAR
                Maximum column length:                          10
                Scale for decimal or timestamp column:          0
                Number of distinct column values:               5
                Average column length:                          9
                Number of most frequent values:                 -1
                Number of quantiles:                            5
                Second highest data value:                      3290
                Second lowest data value:                       2003
                Column sequence in partition key:               0
                Average number of sub-elements:                 -1
                Average length of delimiters:                   -1
                Percentage encoded column values:               -1
                Column clustering:                              -1
                Average encoded column length:                  -1.000000

        Column Distribution Statistics:
        -------------------------------
                Quantile Statistics:
                Valcount        Value           Distcount
                -------------------------------------------------
                1               1098            0
                2               2003            0
                3               2056            0
                4               5623            0
                5               5623            0

Column Information:
-------------------
        Number:                                         3
        Name:                                           SEMESTER
        DFS Partition Column:                           No
        Statistics Available:                           Yes

        Column Statistics:
        ------------------
                Schema name of the column type:                 SYSIBM
                Name of column type:                            VARCHAR
                Maximum column length:                          5
                Scale for decimal or timestamp column:          0
                Number of distinct column values:               3
                Average column length:                          6
                Number of most frequent values:                 2
                Number of quantiles:                            4
                Second highest data value:                      3
                Second lowest data value:                       1
                Column sequence in partition key:               0
```



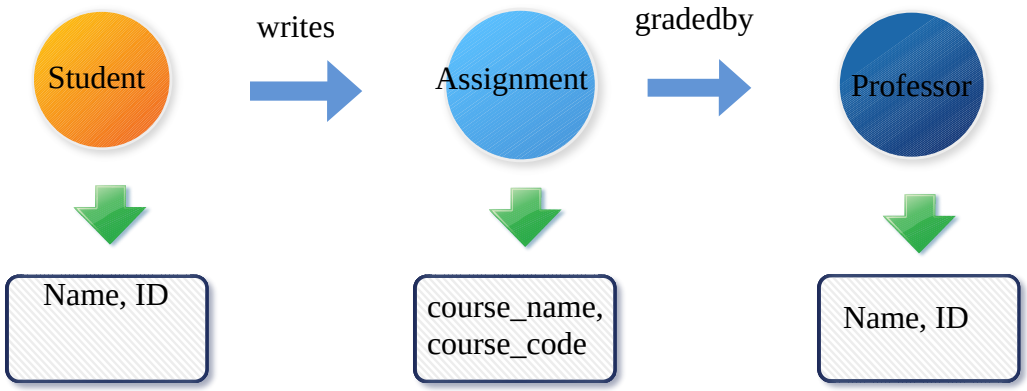
output - Notepad

File Edit Format View Help

```
        -------------------------------
                Quantile Statistics:
                Valcount        Value           Distcount
                -------------------------------------------------
                1               1098            0
                2               2003            0
                3               2056            0
                4               5623            0
                5               5623            0

Column Information:
-------------------
        Number:                                         3
        Name:                                           SEMESTER
        DFS Partition Column:                           No
        Statistics Available:                           Yes

        Column Statistics:
        ------------------
                Schema name of the column type:                 SYSIBM
                Name of column type:                            VARCHAR
                Maximum column length:                          5
                Scale for decimal or timestamp column:          0
                Number of distinct column values:               3
                Average column length:                          6
                Number of most frequent values:                 2
                Number of quantiles:                            4
                Second highest data value:                      3
                Second lowest data value:                       1
                Column sequence in partition key:               0
                Average number of sub-elements:                 -1
                Average length of delimiters:                   -1
                Percentage encoded column values:               -1
                Column clustering:                              -1
                Average encoded column length:                  -1.000000

        Column Distribution Statistics:
        -------------------------------
                Frequency Statistics:
                Valcount        Value
                ---------------------------------
                2               2
                2               3

                Quantile Statistics:
                Valcount        Value           Distcount
                -------------------------------------------------
                1               1               0
                3               2               0
                3               3               0
                5               3               0
```

IBM Bluemix Graph DB:

Dataset Model:



1.) Created Schemas for Student, Assignment and Professor.

Creating Student Schema :

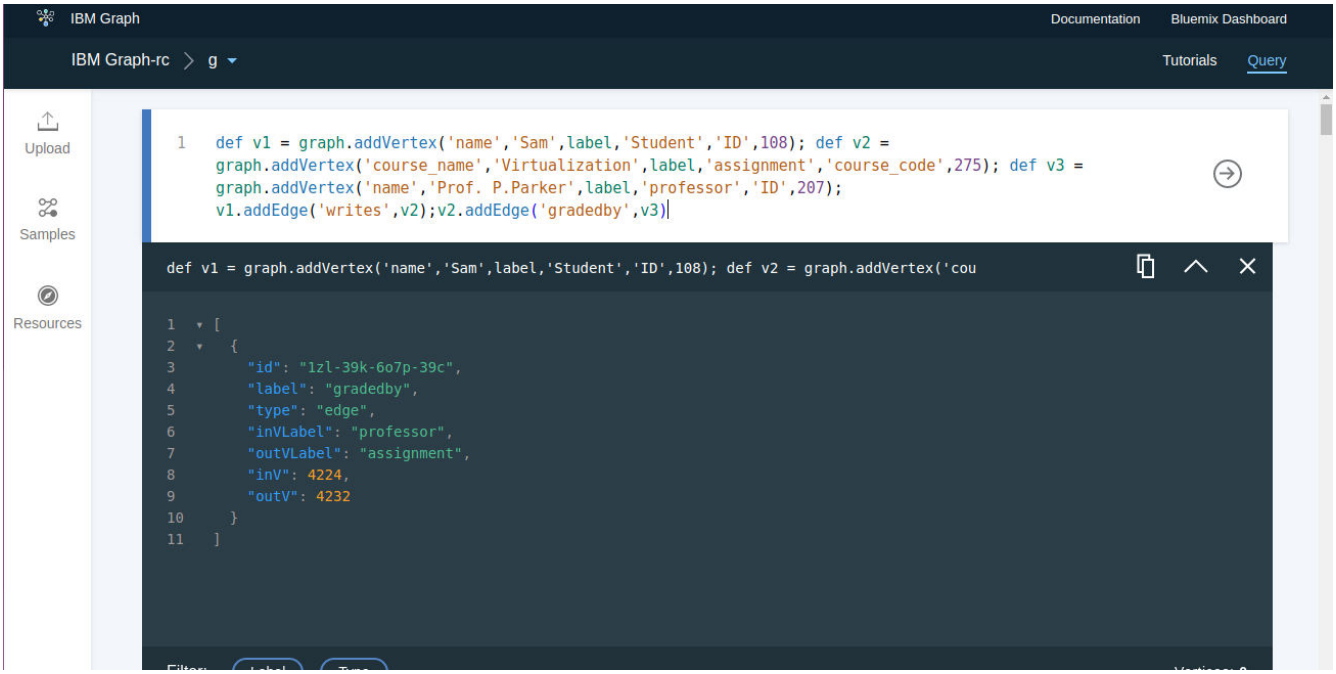
```
akansha@akansha-Lenovo-G50-80:~$ curl -X POST -d '{"propertyKeys":[{"name":"name","dataType":"String","cardinality":"SINGLE"},{"name":"ID","da
taType":"Integer", "cardinality" :"SINGLE"}],"vertexLabels":[{"name":"student"}],"vertexIndexes":[{"name":"vByName","propertyKeys":["name"],"co
mposite":true,"unique":true},{"name":"vByID","propertyKeys":["ID"],"composite":true,"unique":true}]}' -H 'Authorization: gds-token ZDIxNjMxOGIt
YWFiYy00YzYzLWEzN2QtYzdhMjhiMWFjNmNhOjE0ODgxNzcxMjk4MDM6SjJBQUdyOFV1QjB2Uk85WG84MDRaaTUrRDdaMEdDYkJ4cjBNN292a2xrYz0=' -H 'content-type:applicat
ion/json' https://ibmgraph-alpha.ng.bluemix.net/7b319cd6-c014-4389-b67d-031e3733a0de/g/schema
{"requestId":"942832a8-5ff8-443b-8b63-3e18412a0428","status":{"message":"","code":200,"attributes":{}},"result":{"data":[{"propertyKeys":[{"nam
e":"name","dataType":"String","cardinality":"SINGLE"},{"name":"ID","dataType":"Integer","cardinality":"SINGLE"}],"vertexLabels":[{"name":"stude
nt"}],"edgeLabels":[],"vertexIndexes":[{"name":"vByName","composite":true,"unique":true,"propertyKeys":["name"],"requiresReindex":false,"type":
"vertex"},{"name":"vByID","composite":true,"unique":true,"propertyKeys":["ID"],"requiresReindex":false,"type":"vertex"}],"edgeIndexes":[]}],"me
ta":{}}}akansha@akansha-Lenovo-G50-80:~$
```

2.) Inserting values in Student Schema :

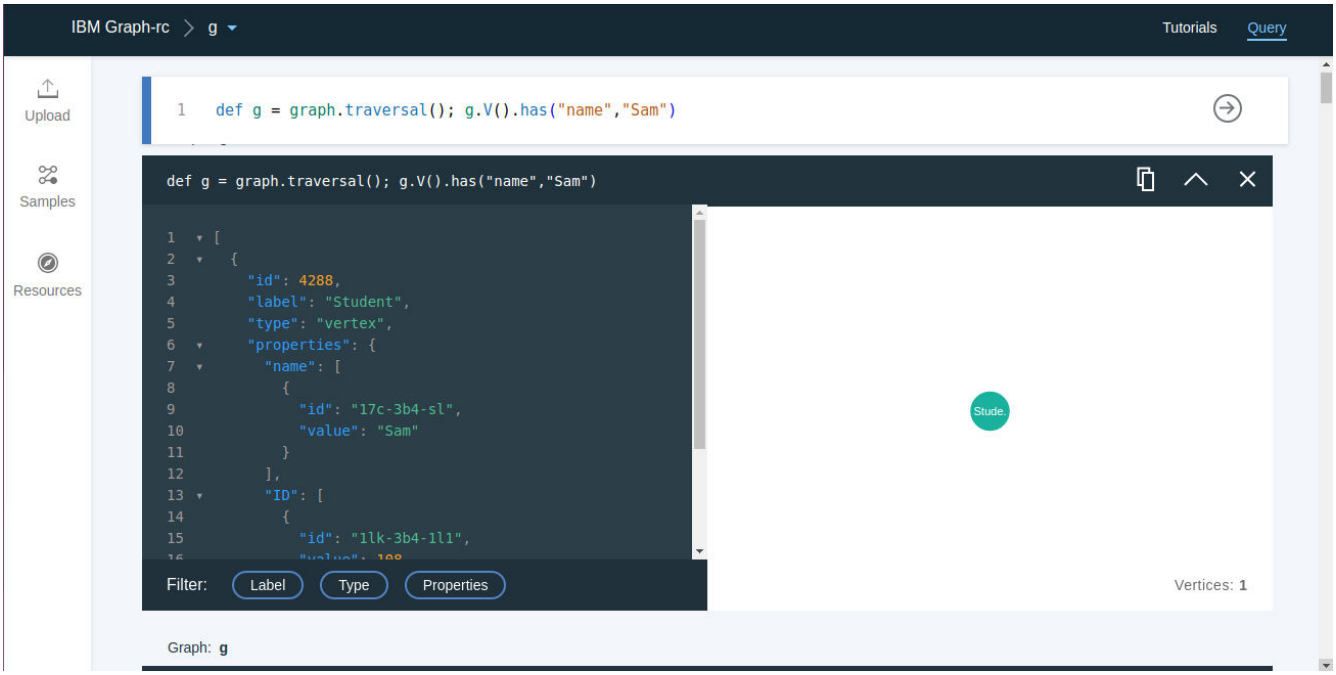
```
akansha@akansha-Lenovo-G50-80:~$ curl -X POST -d '{"name":"Jane","ID":102,"label":"Student"}' -H 'content-type: application/json' -H 'Authoriza
tion: gds-token ZDIxNjMxOGItYWFiYy00YzYzLWEzN2QtYzdhMjhiMWFjNmNhOjE0ODgxNzcxMjk4MDM6SjJBQUdyOFV1QjB2Uk85WG84MDRaaTUrRDdaMEdDYkJ4cjBNN292a2xrYz0
=' https://ibmgraph-alpha.ng.bluemix.net/7b319cd6-c014-4389-b67d-031e3733a0de/g/vertices
{"requestId":"7a56fb8a-f0a2-4437-b5a2-98ba996b6b3f","status":{"message":"","code":200,"attributes":{}},"result":{"data":[{"id":4264,"label":"St
udent","type":"vertex","properties":{"name":[{"id":"179-3ag-sl","value":"Jane"}],"ID":[{"id":"1lh-3ag-1l1","value":102}]}}],"meta":{}}}akansha@
akansha-Lenovo-G50-80:~$
akansha@akansha-Lenovo-G50-80:~$
akansha@akansha-Lenovo-G50-80:~$
akansha@akansha-Lenovo-G50-80:~$ curl -X POST -d '{"name":"John","ID":103,"label":"Student"}' -H 'content-type: application/json' -H 'Authoriza
tion: gds-token ZDIxNjMxOGItYWFiYy00YzYzLWEzN2QtYzdhMjhiMWFjNmNhOjE0ODgxNzcxMjk4MDM6SjJBQUdyOFV1QjB2Uk85WG84MDRaaTUrRDdaMEdDYkJ4cjBNN292a2xrYz0
=' https://ibmgraph-alpha.ng.bluemix.net/7b319cd6-c014-4389-b67d-031e3733a0de/g/vertices
{"requestId":"7d1f76c0-bbe1-4ce8-8ca0-ba52abfcadd0","status":{"message":"","code":200,"attributes":{}},"result":{"data":[{"id":4128,"label":"St
udent","type":"vertex","properties":{"name":[{"id":"16s-36o-sl","value":"John"}],"ID":[{"id":"1l0-36o-1l1","value":103}]}}],"meta":{}}}akansha@
akansha-Lenovo-G50-80:~$
akansha@akansha-Lenovo-G50-80:~$
akansha@akansha-Lenovo-G50-80:~$
akansha@akansha-Lenovo-G50-80:~$
```

Using the same command, created schemas for Assignment and Professor.

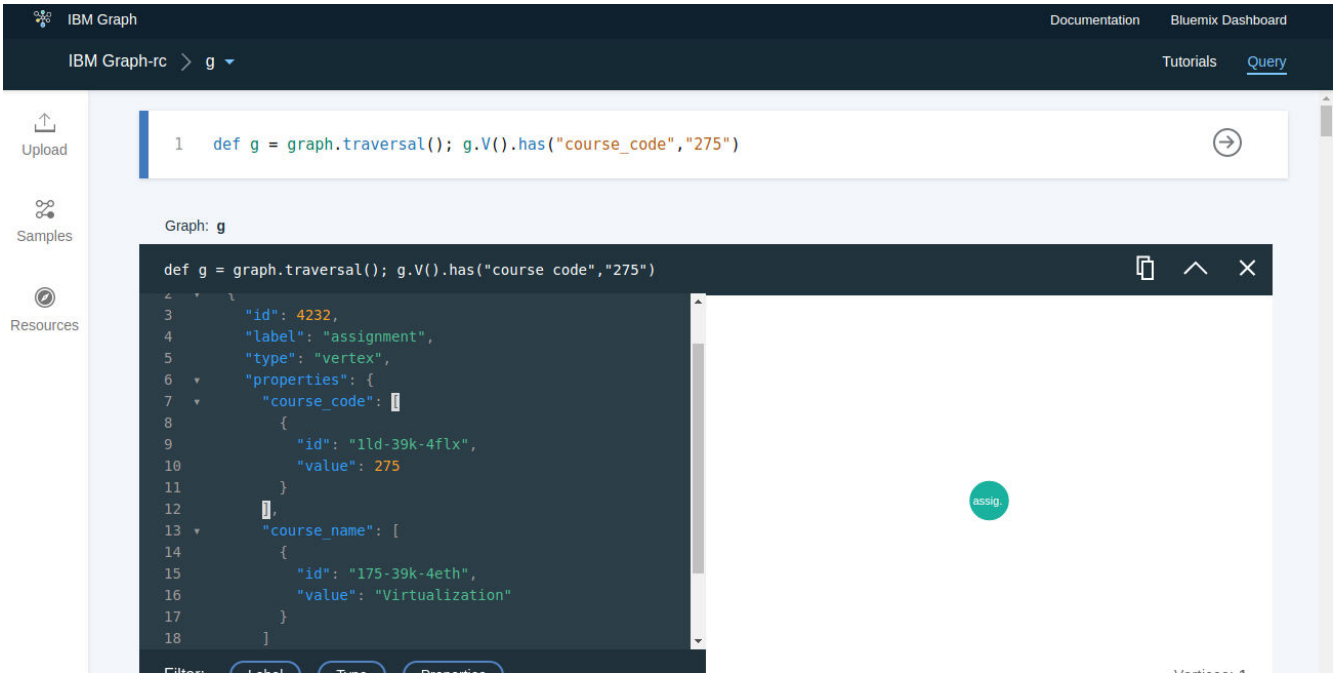
3.) Adding vertex to above schemas using gremlin query in IBM Graph Bluemix :



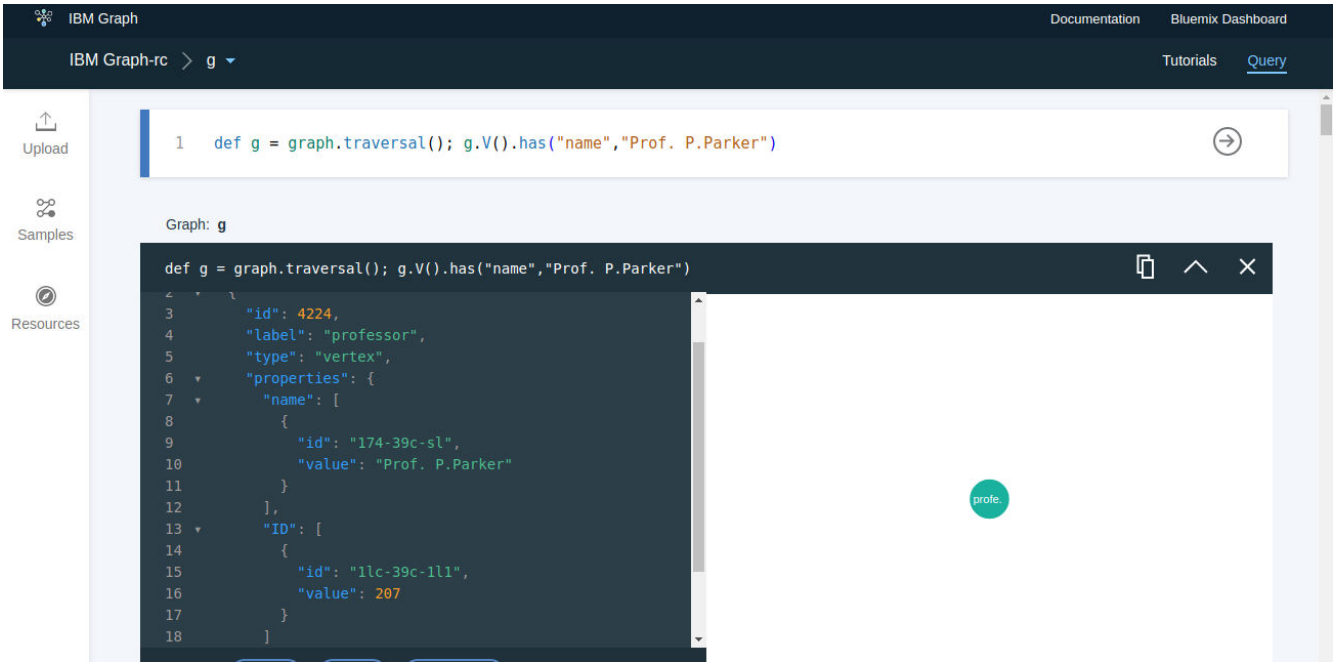
4.) Viewing Student Vertex :



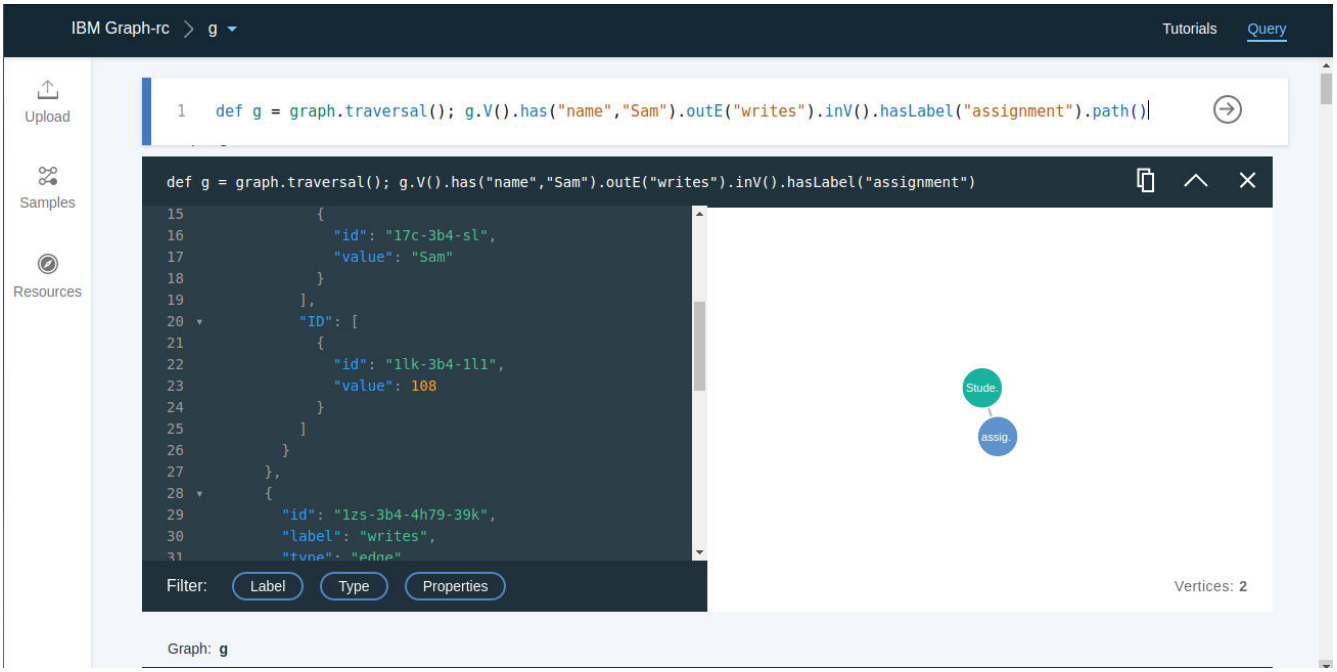
4.) Viewing Assignment vertex :



5.) Viewing Professor vertex :



6.) Viewing Student and Assignment vertices connected by an edge ‘writes’:



7.) Viewing all vertices and edges, visualizing the whole graph application :