Assignment 8

Name: Erin Ledford

Assignment # : Assignment 5

Due date: April 2nd, 2021

Honor Pledge: On my honor as a student of the University of Nebraska at Omaha, I have neither given nor received unauthorized help on this programming assignment.

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Partners: NONE

**Objectives**

This assignment will give you the opportunity to practice using PostgreSQL.

**Exercises**

Answer the following questions using the gene2pubmed and geneinfo tables as created in the video module “Data-bases (Part 2)”. Note that the taxonomy ID for humans is 9606 and that the taxonomy ID for mouse is 10090. As mentioned in the video lecture, the database I created is a much smaller version of what is in NCBI, to allow you to run it on the Virtual Machine. Therefore, the answers to some questions (e.g., question 4) are not going to be bio-logically correct.

For each question, record the complete SQL statement(s)—Questions 1 through 8 must be answered using only a single SQL statement; two statements can be used to answer Questions 9 and 10—that you used along with your answer in a text file. Name this file netID\_Assign8 where netID is your UNO NetID. Be sure to include your name in the file.

1.What is the gene\_id of the gene with symbol CD19?

SELECT gene\_id, symbol FROM geneinfo WHERE symbol = ‘CD19’;

The gene id with the symbol CD19 is 930.

2.What is the symbol and full name of the gene with gene\_id 7157?

SELECT symbol, full\_name, gene\_id FROM geneinfo WHERE gene\_id = ‘7157’;

The symbol is TP53 and the full\_name is tumor protein p53.

3.How many genes are on chromosome 1 (in mouse and human, total)?

SELECT COUNT(gene\_id) FROM geneinfo WHERE chromosome = ‘1’;

There are 341 genes on chromosome 1.

4.How many genes are on human chromosome 1?

SELECT COUNT(gene\_id) FROM geneinfo WHERE chromosome = ‘1’ AND tax\_id = ‘9606’;

There are 174 genes on human chromosome 1.

5.What synonyms exist for the gene with the symbol MYC?

SELECT synonyms, gene\_id, symbol FROM geneinfo WHERE symbol = ‘MYC’;

The synonyms that exist for the gene with the symbol MYC is MRTL, MYCC, bHLHe39, and c-Myc.

6.How many PubMed entries are there for gene\_id 4609?

SELECT pubmed\_id, gene\_id FROM gene2pubmed WHERE gene\_id = ‘4609’;

There are four pubmed entries for gene\_id 4609.

7.How many PubMed entries are there for genes with gene\_ids 1787 and 7157?

SELECT pubmed\_id, gene\_id FROM gene2pubmed WHERE gene\_id = ‘1787’ OR gene\_id = ‘7157’;

8.How many genes in the geneinfo table are human (tax\_id = 9606)?

SELECT COUNT(gene\_id) FROM geneinfo WHERE tax\_id = ‘9606’;

There are 1828 genes in the table that are human.

9.How many PubMed entries are there for the human gene with full name dystrophin?

SELECT gene2pubmed.pubmed\_id FROM geneinfo, gene2pubmed WHERE geneinfo.tax\_id = ‘9606’ AND geneinfo.full\_name = ‘dystrophin’;

There are 19 entries for the human gene with the full name dystrophin.

10.Given that PubMed ID’s are issued consecutively, what is the pubmed\_id of the most recent paper in PubMed about the human gene TP53?

SELECT pubmed\_id, gene\_id FROM gene2pubmed WHERE gene\_id = ‘7157’ ORDER BY pubmed\_id DESC;

The most recent paper on the human gene TP53 has a pubmed ID of 33579943.

How to Submit

Upload your text file to Canvas.