CS 432: Databases

Assignment 2: Advanced SQL and Formal Relational Query Languages

_____

Total marks: 25
Submission deadline: 11:59PM, 28th Feb 2020.
Submission guidelines: Submit the zipped folder containing all the files (database and the python script) using the Google form. Name your submission as 'RollNumber_Name'. Submissions in the incorrect format will not be accepted. **Any late submission will be summarily given zero marks without any further discussion.**

_____

Question 1 carries 20 marks with each query given equal weightage (1 mark). Question 2 carries 5 marks with each query given equal weightage (1 mark). **No partial marks for any questions.**

1. Implement the backend connectors (some references: [1], [2]) for the E-Commerce database created in Assignment 1. Ensure that input sanitization (reference: [3]) checks are performed before the query is executed on the database. Submit a method definition for **Questions 1-20** of the SQL queries implemented in Assignment 1.
2. Write the tuple relational calculus and the domain relational calculus queries for the following:
   a. List all electronics products in the price range 10k-20k.
   b. Find email addresses of all the users who reside in the city 'Mumbai' and have made a total purchase greater than or equal to Rs. 5000 in the past.
   c. List all books published after 2001.
   d. List all products that were added to the database after 27/07/2019.
   e. List all retailer ids whose products, userid = 55 has purchased.