Assignment 1

MTAI 411 Data Mining Lab
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Date: 10/01/2026   Due date: 10/01/2026   12:50 PM   8 Marks

A relational database for AllElectronics. The AllElectronics company is described by the following relation tables: customer, item, employee, and branch. Fragments of the tables described here are shown in the Figure. Please fill up the tables with 10 entries each.

The relation customer consists of a set of attributes, including a unique customer identity number (cust ID), customer name, address, age, occupation, annual income, credit information, category, and so on.

Similarly, each of the relations item, employee, and branch consists of a set of attributes describing their properties.

Relational data can be accessed by database queries written in a relational query language. A query allows retrieval of specified subsets of the data. Here we will use python to access the relational database and to write the queries. Write the Python code to get the following results.

1. Show the types of all items that were made in India.
2. List all the items costing less than $1000.
3. Show the sales of December month grouped by customer.
4. Which sales person had the highest amount of sales?
5. Sort the employees in decreasing order of their salaries.
6. List the name of the employees working in a particular branch.
7. List all the customers who have income greater than $1000.
8. Which employee is associated with more number of transactions.

customer

cust_ID	name	address	age	income	credit_info	category	...
C1	Smith, Sandy	1223 Lake Ave., Chicago, IL	31	$78000	1	3	...
...	...	...	...	...	...	...	...

item

item_ID	name	brand	category	type	price	place_made	supplier	cost
I3	hi-res-TV	Toshiba	high resolution	TV	$988.00	Japan	NikoX	$600.00
I8	Laptop	Dell	laptop	computer	$1369.00	USA	Dell	$983.00
...	...	...	...	...	...	...	...	...

employee

empl_ID	name	category	group	salary	commission
E55	Jones, Jane	home entertainment	manager	$118,000	2%
...	...	...	...	...	...

branch

branch_ID	name	address
B1	City Square	396 Michigan Ave., Chicago, IL
...	...	...

purchases

trans_ID	cust_ID	empl_ID	date	time	method_paid	amount
T100	C1	E55	03/21/2005	15:45	Visa	$1357.00
...	...	...	...	...	...	...

items_sold

trans_ID	item_ID	qty
T100	I3	1
T100	I8	2
...	...	...

works_at

empl_ID	branch_ID
E55	B1
...	...

1.