

CSE 3330

PROJECT 2 PART 3

Car Rental DB GUI

by Mubtasim Ahmed Rakheen, Bishal Giri,  
Subash Bhusal

## **Honor Code**

I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.

I promise that I will submit only work that I personally create or that I contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.

## # Task 1:

Query 1: Add an extra column 'Returned' to the RENTAL table. Values will be 0-for non-returned cars, and 1-for returned cars. Then update the 'Returned' column with '1' for all records that they have a payment date and with '0' for those that they do not have a payment date.

```
ALTER TABLE RENTAL ADD COLUMN Returned INTEGER DEFAULT 0;
```

Then we update the Rental Column

```
UPDATE RENTAL SET Returned = 1 WHERE PaymentDate <> 'NULL';
```

CustID	VehicleID	StartDate	OrderDate	RentalType	Qty	ReturnDate	TotalAmount	PaymentDate	Returned
203	JM3KE4DY4F0441471	2019-09-09	2019-05-22	1	4	2019-09-13	460	2019-09-09	1
210	19VDE1F3XEE414842	2019-11-01	2019-10-28	7	2	2019-11-15	1200	NULL	0
210	JTHFF2C26F1358X45	2019-05-01	2019-04-15	7	1	2019-05-08	600	2019-05-08	1
210	JTHFF2C26F1358X45	2019-11-01	2019-10-28	7	2	2019-11-15	1200	NULL	0
210	WAUTFAFH0E0010613	2019-11-01	2019-10-28	7	2	2019-11-15	1200	NULL	0
210	WBA3A9G51ENN73366	2019-11-01	2019-10-28	7	2	2019-11-15	1200	NULL	0
210	WBA3B9C59EP458859	2019-11-01	2019-10-28	7	2	2019-11-15	1200	NULL	0
210	WDCGG0EB0EG188709	2019-11-01	2019-10-28	7	2	2019-11-15	1200	NULL	0
212	19VDE1F3XEE414842	2019-06-10	2019-04-15	7	3	2019-07-01	1800	2019-06-10	1
216	1N6BF0KM0EN101134	2019-08-02	2019-03-15	7	4	2019-08-30	2740	2019-08-02	1
216	1N6BF0KM0EN101134	2019-08-30	2019-03-15	1	2	2019-09-01	230	2019-08-02	1
221	19VDE1F3XEE414842	2019-07-01	2019-06-12	7	1	2019-07-08	600	2019-07-01	1
221	19VDE1F3XEE414842	2019-07-09	2019-06-12	1	2	2019-07-11	200	2019-07-01	1
221	19VDE1F3XEE414842	2020-01-01	2019-12-15	7	4	2020-01-29	2400	NULL	0
221	JTHFF2C26F1358X45	2020-01-01	2019-12-15	7	4	2020-01-29	2400	NULL	0
221	WAUTFAFH0E0010613	2019-07-01	2019-06-12	7	1	2019-07-08	600	2019-07-01	1
221	WAUTFAFH0E0010613	2019-07-09	2019-06-12	1	2	2019-07-11	200	2019-07-01	1
221	WAUTFAFH0E0010613	2020-01-01	2019-12-15	7	4	2020-01-29	2400	NULL	0
221	WBA3A9G51ENN73366	2020-01-01	2019-12-15	7	4	2020-01-29	2400	NULL	0
221	WBA3B9C59EP458859	2020-01-01	2019-12-15	7	4	2020-01-29	2400	NULL	0
221	WDCGG0EB0EG188709	2020-01-01	2019-12-15	7	4	2020-01-29	2400	NULL	0
229	19VDE1F3XEE414842	2019-05-06	2019-04-12	1	4	2019-05-10	400	2019-05-06	1
229	WAUTFAFH0E0010613	2019-05-06	2019-04-12	1	4	2019-05-10	400	2019-05-06	1

**Query 2:** Create a view vRentalInfo that retrieves all information per rental. The view should have the following attributes:

- OrderDate
- StartDate
- ReturnDate
- Total Days per Rental as 'TotalDays'
- Vehicle's ID as 'VIN'
- Vehicle's Description as 'Vehicle'
- Vehicle's Type as 'Type'
- Vehicle's Category as 'Category'
- Customer's ID as 'CustomerID'

- Customer's Name as 'CustomerName'
- Order Total Amount as 'OrderAmount',
- Order Remaining Amount as 'RentalBalance'

```
CREATE VIEW vRentalInfo AS
SELECT R.OrderDate, R.StartDate, R.ReturnDate,
CAST(JULIANDAY(R.ReturnDate) - JULIANDAY(R.StartDate) AS INTEGER) AS TotalDays,
R.VehicleId AS VIN, V.Description AS Vehicle,
CASE V.Type
    WHEN 1 THEN 'Compact'
    WHEN 2 THEN 'Medium'
    WHEN 3 THEN 'Fullsize'
    WHEN 4 THEN 'SUV'
    WHEN 5 THEN 'Truck'
    WHEN 6 THEN 'Van'
END AS Type,
CASE V.Category
    WHEN 0 THEN 'Basic'
    WHEN 1 THEN 'Luxury'
END AS Category,
R.CustID AS CustomerID, C.Name AS CustomerName, R.TotalAmount AS OrderAmount,
CASE
    WHEN R.PaymentDate = 'NULL' THEN R.TotalAmount
    WHEN R.PaymentDate <> 'NOT NULL' THEN 0
END AS RentalBalance
FROM RENTAL AS R JOIN VEHICLE AS V ON R.VehicleId = V.VehicleId
JOIN CUSTOMER AS C ON R.CustID = C.CustID
ORDER BY StartDate ASC;
```

CustID	VehicleID	StartDate	OrderDate	RentalType	Qty	ReturnDate	TotalAmount	PaymentDate	Returned
203	JM3KE4DY4F0441471	2019-09-09	2019-05-22	1	4	2019-09-13	460	2019-09-09	1
210	19VDE1F3XEE414842	2019-11-01	2019-10-28	7	2	2019-11-15	1200	NULL	0
210	JTHFF2C26F1358X45	2019-05-01	2019-04-15	7	1	2019-05-08	600	2019-05-08	1
210	JTHFF2C26F1358X45	2019-11-01	2019-10-28	7	2	2019-11-15	1200	NULL	0
210	WAUTFAFH0E0010613	2019-11-01	2019-10-28	7	2	2019-11-15	1200	NULL	0
210	WBA3A9G51ENN73366	2019-11-01	2019-10-28	7	2	2019-11-15	1200	NULL	0
210	WBA3B9C59EP458859	2019-11-01	2019-10-28	7	2	2019-11-15	1200	NULL	0
210	WDCGG0EB0EG188709	2019-11-01	2019-10-28	7	2	2019-11-15	1200	NULL	0
212	19VDE1F3XEE414842	2019-06-10	2019-04-15	7	3	2019-07-01	1800	2019-06-10	1
216	1N6BF0KM0EN101134	2019-08-02	2019-03-15	7	4	2019-08-30	2740	2019-08-02	1
216	1N6BF0KM0EN101134	2019-08-30	2019-03-15	1	2	2019-09-01	230	2019-08-02	1
221	19VDE1F3XEE414842	2019-07-01	2019-06-12	7	1	2019-07-08	600	2019-07-01	1
221	19VDE1F3XEE414842	2019-07-09	2019-06-12	1	2	2019-07-11	200	2019-07-01	1
221	19VDE1F3XEE414842	2020-01-01	2019-12-15	7	4	2020-01-29	2400	NULL	0
221	JTHFF2C26F1358X45	2020-01-01	2019-12-15	7	4	2020-01-29	2400	NULL	0
221	WAUTFAFH0E0010613	2019-07-01	2019-06-12	7	1	2019-07-08	600	2019-07-01	1
221	WAUTFAFH0E0010613	2019-07-09	2019-06-12	1	2	2019-07-11	200	2019-07-01	1
221	WAUTFAFH0E0010613	2020-01-01	2019-12-15	7	4	2020-01-29	2400	NULL	0
221	WBA3A9G51ENN73366	2020-01-01	2019-12-15	7	4	2020-01-29	2400	NULL	0
221	WBA3B9C59EP458859	2020-01-01	2019-12-15	7	4	2020-01-29	2400	NULL	0
221	WDCGG0EB0EG188709	2020-01-01	2019-12-15	7	4	2020-01-29	2400	NULL	0
229	19VDE1F3XEE414842	2019-05-06	2019-04-12	1	4	2019-05-10	400	2019-05-06	1
229	WAUTFAFH0E0010613	2019-05-06	2019-04-12	1	4	2019-05-10	400	2019-05-06	1

```
sqlite> SELECT COUNT(ReturnDate) AS N_ROWS
...> FROM vRentalInfo;
```

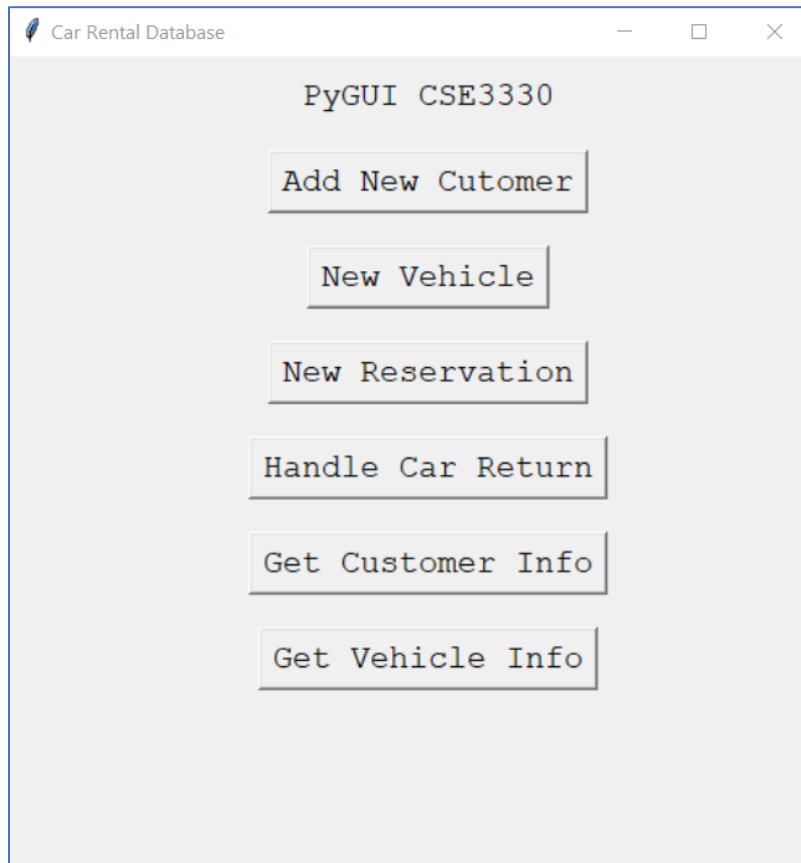
N\_ROWS

-----

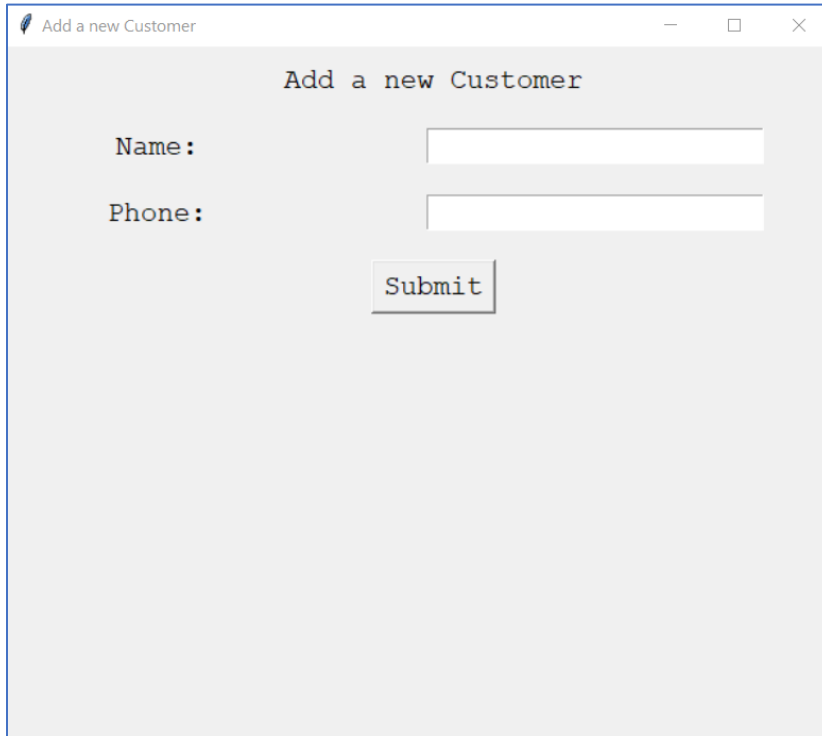
23

## # Task 2:

### Main Menu:



## Add a new Customer:



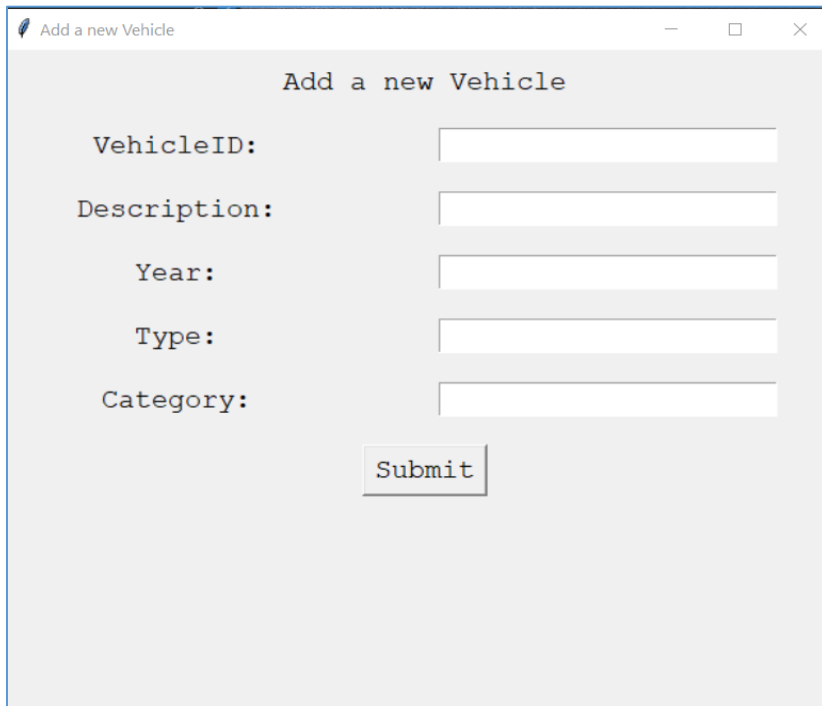
The screenshot shows a web application window with the title "Add a new Customer". The window has a light gray background and a white title bar with standard minimize, maximize, and close buttons. The main content area is titled "Add a new Customer" in a monospace font. Below the title, there are two input fields: "Name:" and "Phone:". Each field is followed by a white text input box. Below the "Phone:" field, there is a "Submit" button with a black border and white text.

Add a new Customer

Name:

Phone:

## Add a new Vehicle:



The screenshot shows a web application window with the title "Add a new Vehicle". The window has a light gray background and a white title bar with standard minimize, maximize, and close buttons. The main content area is titled "Add a new Vehicle" in a monospace font. Below the title, there are five input fields: "VehicleID:", "Description:", "Year:", "Type:", and "Category:". Each field is followed by a white text input box. Below the "Category:" field, there is a "Submit" button with a black border and white text.

Add a new Vehicle

VehicleID:

Description:


Year:

Type:

Category:



## Add a new Reservation:

 Add a new Reservation

—

□

×

Add a new Reservation

CustID:

VehicleId:

StartDate:

OrderDate:

RentalType:

Qty:

ReturnDate:

TotalAmount:

PaymentDate:

Submit

## Handle Car Return:

Handle Car Return

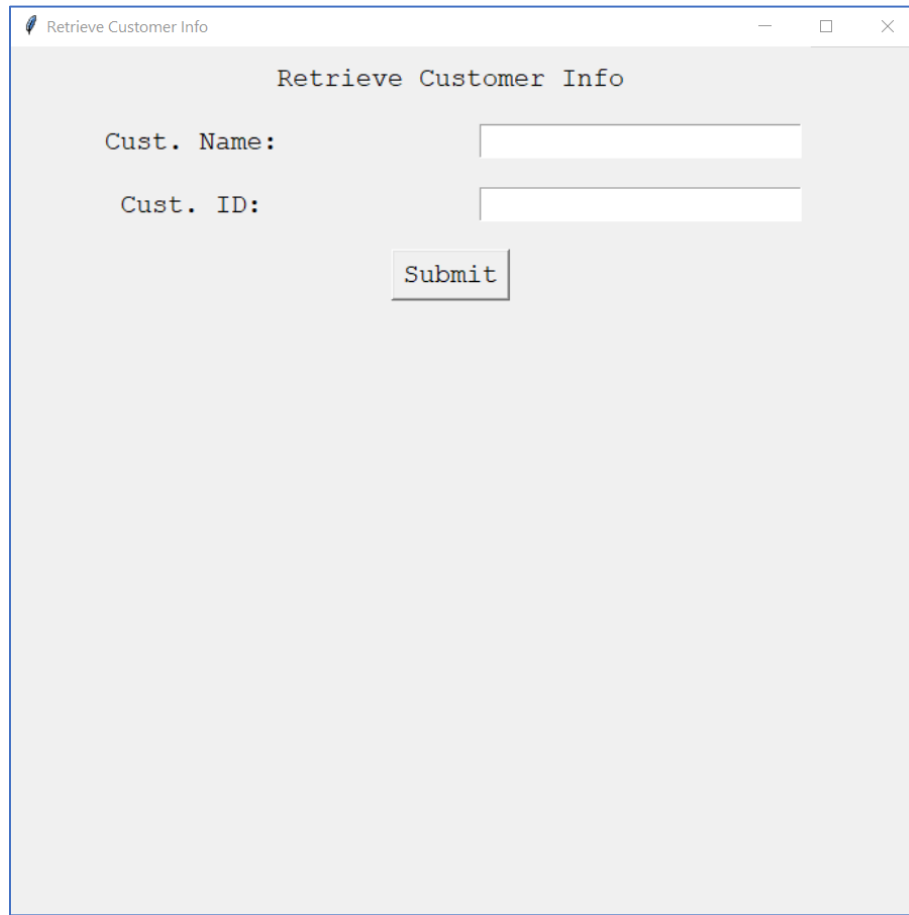
Cust. Name:

VehicleId:

ReturnDate:

Submit

## Get Customer Information:



The screenshot shows a web application window with the title "Retrieve Customer Info". The window has a light gray background and a white title bar with standard window controls (minimize, maximize, close). The main content area is light gray and contains the following elements:

- The title "Retrieve Customer Info" centered at the top.
- A label "Cust. Name:" followed by a white text input field.
- A label "Cust. ID:" followed by a white text input field.
- A "Submit" button located below the input fields.

The window is framed by a blue border, and there is a thick black horizontal line below the window.

Group Contribution(s):

Ahmed: Write the queries and the submission documents

Subash: Help Ahmed with query no.2 and Bishal with Tkinter

Bishal: Create the GUI using Tkinter (Python)