**Validations to Account for and Test**

**Queries –** If any of the queries **DON’T RETURN ANY RECORDS…**

**No Transactions Found**

**2.1 Transaction Details Module – 1-Transaction**

**Select the option you would like to run.**

**2.1.1 –** Used to display the transactions made by customers living in a given **zip code** for a given **month** and **year**. Order by day in descending order

1- Display the transactions made by customers living in a given zip code for a given month and year

* **Zip Code –** Prompt the user:
  + **Please enter in a 5-digit zip code, 12345.**
  + Check that a length of “5” and numeric was entered. If yes, then move on to the **Month** prompt for data.
  + If the user enters in zip code < 5 **Please enter in a 5-digit zip code, 12345.**
  + **Press Enter to Exit Back to the Main Menu**

**Database Test for zip codes < 5**

SELECT CUST\_ZIP FROM cdw\_sapp\_customer WHERE length(CUST\_ZIP) <> 5

SELECT CUST\_ZIP FROM cdw\_sapp\_customer WHERE length(CUST\_ZIP) < 5

* **Month –**Prompt the user:
  + **Please enter in a 2-digit month between 01-12, MM.**
  + Check for a length of “2” was entered and in the range of 01-12. If yes, then move on to the **Year** prompt for data.
  + If the user enters in month < 2 **Please enter in a 2-digit month between 01-12, MM.**
  + **Press Enter to Exit Back to the Main Menu**
* **Year -** Prompt the user:
  + **Please enter in a 4-digit year, YYYY.**
  + Check for a length of “4” was entered and **NOT** 2018 then just say no records found. If yes ie 2018, then run the database query.
  + If the user enters in year < 4 **Please enter in a 4-digit year, YYYY.**
  + **Press Enter to Exit Back to the Main Menu**
* **Returns No records found if query has no records for the data entered.**

**2.1.2 –** Used to display the **number** and **total values** of a **transaction** for a given **type**.

2- Display the number and total values of transactions for a given type

* **Type –** Prompt the user:
  + **Please select one of the following types. Enter the number that corresponds to your choice type.**
  + Check what the user entered: 1-Bills, 2-Education, 3-Entertainment, 4-Gas, 5-Grocery, 6-Healthcare, 7-Test
  + If the user enters in anything other than 1-7. **Please select one of the following types. Enter the number that corresponds to your choice type.**
  + **Press Enter to Exit Back to the Main Menu**

**2.1.3 –** Used to display the **total number** and **total values** of **transactions** for branches in a given **state**.

3- Display the number and total values of transactions for a branches in a given state

* **State -** Prompt the user:
  + **Please enter in a 2 Letter State, Example GA.**
  + If the user enters an invalid state. **Please enter in a 2 Letter State, Example GA.**
  + **Press Enter to Exit Back to the Main Menu**

**If the user doesn’t choose one of the three options (say they enter 4), then Not an option- Start Over – Press Enter to Exit Back to the Main Menu**

**2.2 Customer Details Module – 2-Customer**

**Select the option you would like to run.**

**2.2.1 –** Used to check the exiting account details of a customer.

1- Check the existing account details of a customer

**SSN –** Prompt the user:

* + **Please enter your SSN**
  + **1- Last Name**
  + **2- Street Address**
  + **3- City**
  + **4- State**
  + **5- Country (remove this)**
  + **6- Zip Code**
  + **7- Phone**

**2.2.2 –** Used to modify the existing account details of a customer.

2- Modify the existing account details of a customer

**2.2.3 –** Used to generate a monthly bill for a credit card number for a given month and year.

3- Generate a monthly bill for a credit card number for a given month and year

* **Credit Card Number -** Prompt the user:
  + **Please enter in a 16 digit the credit card number**
  + If the user enters in anything less than 16 or greater than 16 or not numeric or = 16 and has any alphabetic characters. **Please enter in a 16 digit the credit card number**
  + **Press Enter to Exit Back to the Main Menu**
* **Month -** Prompt the user:
  + **Please enter in a 2-digit month between 01-12, MM.**
  + Check for a length of “2” was entered and is in 01-12. If yes, then move on to the next prompt for data.
  + If the user enters in month < 2 **Please enter in a 2-digit month between 01-12, MM.**
  + **Press Enter to Exit Back to the Main Menu**
* **Year -** Prompt the user:
  + **Please enter in a 4-digit year, YYYY.**
  + Check for a length of “4” was entered and if **NOT** 2018 then just say no records found. If 2018, then run the database query.
  + If the user enters in year < 4 **Please enter in a 4-digit year, YYYY.**
  + **Press Enter to Exit Back to the Main Menu**

**2.2.4 –** Used to display the transactions made by a customer between two dates. Order by year, month, and day in descending order.

4- Display the transactions made by a customer between two dates

* **SSN -** Prompt the user:
  + **Please enter your 9-digit SSN.**
  + If the user enters in anything less than 9 digits or greater than 9 digits or not numeric or = 9 and has any alphabetic characters. **Check can just be for SSN = 9 and numeric**. **Please enter your 9-digit SSN.**
  + **Press Enter to Exit Back to the Main Menu**
* **First Date -** Prompt the user:
  + **Please enter in the first date as YYYYMMDD**
  + Check to see if the date is in this format. (Note year can only be 2018). **Please enter in the first date as YYYYMMDD.**
  + **Press Enter to Exit Back to the Main Menu**
* **Second Date -** Prompt the user:
  + **Please enter in the second date as YYYYMMDD**
  + Check to see if the date is in this format. (Note year can only be 2018). **Please enter in the second date as YYYYMMDD.**
  + **Press Enter to Exit Back to the Main Menu**
* **If Both dates are valid then check to ensure the second date is greater than the first date.** Prompt the user:
  + **Please enter a second date that is greater than the first date.**
  + **Press Enter to Exit Back to the Main Menu**
* **Year -** Check in the YYYYMMDD – maybe python has a date validation function? If so then just collect the data and check if valid do query otherwise tell the user to enter in a valid date
  + **4-digit year, YYYY.**
  + Check for a length of “4” was entered and if **NOT** 2018 then just say no records found. If 2018, then run the database query if the **Month** and **Day** checks are met.
* **Month -** Check in the YYYYMMDD
  + **2-digit month between 01-12, MM.**
  + Check for a length of “2” was entered and is in 01-12.
* **Day -** Check in the YYYYMMDD
  + **2-digit month between 01-31, DD.**
  + Check for a length of “2” was entered and is in 01-31.

SELECT BRANCH\_ZIP FROM cdw\_sapp\_branch WHERE length(CUST\_ZIP) <> 5

SELECT BRANCH\_ZIP FROM cdw\_sapp\_branch WHERE length(CUST\_ZIP) < 5

**Database Test for zip codes < 5**

**Validations to Account for and Test**

1. Load the data first – This was checked first.

1. Interface – This is where the bulk of the testing was done.

1. These are the things to test in each selection that the customer makes for **Transactions/1** and **Customer/2 – plus anywhere the data entered/updated.**
2. Looked at GitHub –

**Validations/Inputs:**

**Zip Code** – 5 Digits/Numeric – they will give you zip codes that are less than 5

– **Please enter a valid Zip Code.**

**Month** – Numeric/2 digits/between 01-12 – **Please enter a valid two-digit month.**

**Year** – 2018 **“Please enter a valid Year.**

**State** – Validate (Chatgpt can generate a list of two-character state abbreviations)

The database has some states like New Mexico/NM, Montana/MT, don’t have data. – **Please enter a valid State Abbreviation.**

**Queries –** If any of the queries **DON’T RETURN ANY RECORDS…**

**No Transactions Found**

**Customer –** SSN/< 9 digits and Numeric – **Please enter a valid 9-digit SSN.**

SSN/returns no records - **No customer found.**

**Really checked this one – Updates to customer data**

**Only use the SSN for updating the records** –

* Check to ensure that this is a valid SSN/Customer in the bank.
* Could have the right number of digits, be numeric.
* Still not a valid SSN in the database.

**SSN** - 9 digits/numeric/SSN exists in this database – The interface does not allow updates to SSN

**Credit Card Number (4210653312478046)** - Check the number of digits is 16 / numeric

**First Name and Last Name**/Uppercase and alpha, **Middle Name**/lowercase

**Phone Number -** 10 digits and added to the database using the correct format/could force them to enter it in the proper format like (206)123-4567

**Email Validation -  Use regex find out on the**

Email Check - @ and a . are in the format (ask Ben)

Chatgpt- How to validate an email address.

**Monthly Bill** - Month, Year, Credit Card Number

**Date Range for the Transactions between two dates (Really Tested)**

Ensure that the date is entered properly.

Check that the first date is less than the second date.

No transactions found for that date range.

**Updates for Customer – Categories to Test**

1.) Tests - 1 with No changes.

2.) Tests - 2 changes to the data by the customer

3.) Tests - Everything changed.

**Code to run at a console and be able to use functions for validations above the main.**

**Example:**

**If \_name\_ == “main\_”**

**Console\_Program()**

**Then at the top of the code put:**

**Def console\_program():**

**Notes that I cleaned up above – these are just for reference purposes ie messy notes**

**175 Zip code** - 5 digits and numeric - enter a valid 5-digit zip code / input

**178 Month** - numeric and two digits and 01-12 or less then 1 or greater than 12

**Year** - Check for the year **2018 - Please enter a valid year**

valid state abbreviation - use chat gpt in the list some states like new Mexico Montana don't have any transaction data - set the branch transaction sum to zero dollars for this state

If the select doesn't return any records - for any of the 7 selects not a valid entry for zip, month, year

check the categories - don't need to check the valid

no transactions found for any zip code, year, month

**Customer Details**

check for customer details - is the ssn less than 9 digits and numeric - ask the user to input a valid ssn - if the ssn is not in the data then need to say no customer found

**Really checked this one**

only use the ssn for updating the records - check to ensure that this is a valid ssn/customer in the bank could have the right number of digits, numeric but still not a valid ssn in the database

user updates - ssn 9 digits/numeric/if this ssn exists in this database too

credit card number - check the number of digits and is numeric -

first name and last name uppercase and alpha - middle lowercase and alpha

**3 Updates for Customer**

1.) Tested - 1 with No changes

2.) Tested - 2 changes

3.) Everything changed

phone number is 10 digits and added to the database using the correct format

**Email Validation -  use regex find out on the**

email check - @ and a .

how to find a validate an email address

Monthly Bill - month, year, credit card number

**Really Tested**

ensure that the date is entered properly

check that the first date is less than the other date - then no transactions found for that date range