

Data Types

Household:

- Email: string
- Phone number:
 - Area code: int
 - Local number: int
 - Phone # Type: int
- Sq. footage: int
- Occupants #: int
- Bedroom #: int
- Household Type: enum
- Postal Code: int

Bathroom:

- ID (order): int
- Sink #: int
- Commode #: int
- Bidet #: int
- Half-Bathroom:
 - Name: string
- Full Bathroom:
 - Tub #: int
 - Shower #:int
 - Tub/shower #: int
 - Is Primary: BOOL

Manufacturer:

- Name: string

Appliance:

- ID (order): int
- Model: string
- Refrigerator / Freezer:
 - Type: enum
 - Oven:
 - Type: enum
 - Heat Source: enum
- Cooktop:
 - Heat Source: enum

Washer:

- Load Type: enum

Dryer:

- Heat Source: enum

TV:

- Display Type: enum
- Display Size: float
- Maximum Resolution: enum

Constraints

- A household-type must be either apartment, townhome, condominium, or mobile home.
- Households must have at least one bathroom.
- A household should at least have one primary bathroom.
- Cooktop heat sources must be either of the following gas, electric, radiant electric, or induction.
- The oven heat source can be one or more of the following: gas, electric or microwave.
- The washer loading type must be either top or front.
- TV display type must be either tube, DLP, plasma, LCD, or LED.
- Maximum resolution must be either 480i, 576i, 720p, 1080i, 1080p, 1440p, 2160p(4K), or 4320p(8K).

Task Decomposition and Abstract Code

View Bathroom Listing

Task Decomp

Lock Types: Read-only on [Household](#), [Bathroom](#), [Full Bathroom](#) and [Half Bathroom](#)

Number of Locks: 4 schemas

Enabling Conditions: User has entered the bathroom information

Frequency: ~200 per day (~2 bathrooms per household)

Consistency (ACID): consistency required - need to display updated

Subtasks: Mother task is not needed. No decomposition needed

Abstract Code

- Show **Bathroom Listings** once bathroom information has been added for at least 1 bathroom in **Add Bathroom** form.
- Show bathroom number, bathroom type (half or full) and if it is a primary bathroom, in a tabular column based on [Full Bathroom](#), [Half Bathroom](#) and [Bathroom](#)
- Upon clicking *Add another bathroom*, show the **Add Bathroom** form to enter additional bathrooms, if any.
- If there is no additional bathroom to be added, click the button *Next* on the bottom right corner of the screen to **Add Appliance** information.

View manufacturer details

Task Decomp

Lock Types: Read-only on [Appliance](#), [Manufacturer](#), [Refrigerator/Freezer](#), [Cooker](#), [Oven](#), [Cooktop](#), [Washer](#), [Dryer](#), [TV](#)

Number of Locks: 9 schemas

Enabling Conditions: User clicked View Reports / Query Data, selected a Top 25 manufacturer View and clicked on a specific manufacturer

Frequency: High

Consistency (ACID): some consistency required, OK if new household entries are not reflected instantly

Subtasks: Mother task is not needed. No decomposition needed

Abstract Code

- User clicks a specific manufacturer from **Top 25 Manufacturers**.

- For selected (\$Manufacturer) display name and count of every type of appliance for that manufacturer based on [Appliance](#), [Manufacturer](#), [Refrigerator/Freezer](#), [Cooker](#), [Oven](#), [Cooktop](#), [Washer](#), [Dryer](#), [TV](#)
- If user clicks ***Back*** go to **[View top 25 manufacturers](#)**

Aggregate Bathroom Statistics

Task Decomp

Lock Types: Read-only on [Household](#), [Bathroom](#), [Full Bathroom](#), [Half Bathroom](#) and [Postal Code](#)

Number of Locks: 5 schemas

Enabling Conditions: User clicked View Reports / Query Data and selected Bathroom statistics report option

Frequency: High

Consistency (ACID): some consistency required, OK if new household entries are not reflected instantly

Subtasks: Mother task is not needed. No decomposition needed

Abstract Code

- Display min, avg., max of bathrooms per household based on [Bathroom](#) and [Household](#)
- Display min, avg., max of half bathrooms per household based on [Bathroom](#), [Half Bathroom](#) and [Household](#)
- Display min, avg., max of full bathrooms per household based on [Bathroom](#), [Full Bathroom](#) and [Household](#)
- [Display min, avg., max of](#) commodes per household based on [Bathroom](#) [Household](#)
- Display min, avg., max of sink per household based on [Bathroom](#) and [Household](#)
- Display min, avg., max of bidet per household based on [Bathroom](#) and [Household](#)
- Display min, avg., max of bathtub per household based on [Bathroom](#), [Full Bathroom](#) and [Household](#)
- Display min, avg., max of showers per household based on [Bathroom](#), [Full bathroom](#) and [Household](#)
- Display min, avg., max of Tub/showers per household based on [Bathroom](#), [Full bathroom](#) and [Household](#)
- Display the state that has the highest count of bidets and display the count based on [Bathroom](#), [Household](#), and [Postal Code](#)
- Display the postal code with the highest count of bidets and the count based on [Bathroom](#), [Household](#), and [Postal Code](#)
- Display the count of households that has only a single primary bathroom with no additional bathrooms based on [Bathroom](#), [Full Bathroom](#), and [Household](#)