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***Mention all the database queries we made**

Part 1: Enter household information

- Enter household email: team003@gatech.edu
 - Invalid format (e.g., "xxx") => error message
 - Email exists in database => error message
 - Email validated => email stores at frontend for the time being, insert into database when all the info required by Household table collected
- Enter postal code: 00211
 - Invalid format (should be 5-digit) => error message
 - Postal code does not exist in Location table (00000) => error message
 - Postal code exists in Location table => show associated city and state
 - User confirms => postal code stores at frontend and go to next page
 - User rejects => go back to previous page
- Enter phone number
 - User chooses to enter phone number (3-digit area code, 7-digit phone number, phone type)
 - Any field missing => error message
 - Invalid format (e.g., "0.3" for area code) => error message
 - Phone number already exist in database => error message
 - Seven-digit with/without dash at index 3
 - Phone number does not exist in database => stores at frontend and go to next page
 - User chooses not to enter phone number: directly go to next page
- Enter other household info: {house, 1000, 2, 3}
 - Any field missing => error message
 - Validated => one row inserted into Household table, one row inserted into PhoneNumber table if user chooses to enter phone number in last page (phone number is inserted after household to avoid foreign key violation)
 - `SELECT * FROM Household WHERE email = 'team003@gatech.edu';`
 - `SELECT * FROM PhoneNumber WHERE email = 'team003@gatech.edu';`
- Add bathroom:
 - Add half
 - Enter {0, 0, 0} => error message (sum need >= 1)
 - Name is optional
 - Enter {1, 1, 0, first floor} => inserted into database (bathroom_no should be 1)
 - `SELECT * FROM Bathroom WHERE email = 'team003@gatech.edu';`
 - Directed the page to show current bathrooms associated with current email
 - Add full
 - Enter {0, 1, 0, 0, 0, 0} => error message (sum for last three need >= 1)

- Enter {0, 0, 0, 0, 1, 0, check primary} => inserted into database (bathroom_no should be 2)
 - `SELECT * FROM Bathroom WHERE email = 'team003@gatech.edu';`
 - Directed the page to show current bathrooms associated with current email
 - Add full again
 - Primary check box should be disabled
 - View bathrooms: list displayed at frontend is identical to list stored in database
 - Added appliance (manufacturer list retrieved from database)
 - Add cooker: (insert into Appliance, Cooker, Oven or/and Cooktop)
 - Add cooker with Oven (appliance_no should be 1)
 - Add cooker with cooktop (appliance_no should be 2)
 - Add cooker with both oven and cooktop (appliance_no should be 3)
 - Add fridge...
 - Add washer...
 - Add dryer...
 - Add TV
 - Display size needs to be an integer or decimal number scale up to the tenth of an inch. (Invalid format => error)
 - View appliances: list displayed at frontend is identical to list stored in database
 - Return to main menu

Part 2: View report

- Top 25 manufacturers + drill-down list (all manufacturers in top 25 list only produce one type of appliance in seed data)
- Bathroom statistics:
 - Min, max, avg count of X per household (all household in seed data)
 - State has most bidets
 - Postal code has most bidets
 - Count of households have only one bathroom, and it's primary
- Extra fridge:
 - Count of household with more than 1 fridges
 - For each state: count of household with more than 1 fridges and percentages
- Avg TV display size by state:
 - Drill-down table: for each pair of Screen Type and Maximum Resolution, avg display size
- Laundry Center:
 - most common washer type and dryer heat source by state (assume every state has at least one washer and dryer <https://piazza.com/class/l6i6xu2gry94t3/post/602>)
 - In each state, number of households with washing machine, but no dryer
- Search manufacturers and mode name: search 'ad' (case insensitive)
- Household Averages by Radius
 - Enter {01111, 0}: error – no household exists in this range

- Enter {00000, 0}: error – invalid postal code
- Enter {01111, 5}: result
- If in current range, no household have appliance with heat source: show '--'