

Student Name: \_\_\_\_\_

## Database Normalization

For each of the normal forms (0NF, 1NF, 2NF and 3NF) provide the following:

1. A description of the requirements of the Normal Form
2. A listing of all violations of each of the requirements
3. A \*complete\* data model diagram for each normal form (each normal form's diagram must be standalone)
4. Cardinality ratios using crows feet notation
5. Any assumptions you are making as you complete your solution
6. ALL PRIMARY KEYS (including COMPOSITE) must be CLEARLY MARKED.

Scenario: your DB Instructors have started a friendly Monopoly competition and meet whenever possible to play. We want to keep track of our statistics over time. We started writing everything down, but since we play so often, think it'd be helpful to use a DBMS instead. Please help by designing this for us!

### Monopoly Game Statistics

Game Number: 5      (*note: this will always be unique*)

Start Date/Time: Mar 31, 2022 1000

End Date/Time: Mar 31, 2022 1150

Duration: 110 minutes

Location: Capstone Room (*note: this is the unique name our group calls each place we play*)

Location Address: WC202, 11762 106 ST NW, Edmonton, AB T5G 2R1

### Player: Herb Vanselow, FIRST PLACE

- Final Cash Held: \$255
- Total Property Value: \$4325
- Net Worth: \$4580
- Properties Held:
  1. Boardwalk (Not Mortgaged)
    - a. Purchase Value: \$400
    - b. Improvements: \$600
  2. Park Place (Not Mortgaged)
    - a. Purchase Value: \$350
    - b. Improvements: \$400
  3. St. James Place (Not Mortgaged)
    - a. Purchase Value: \$180
    - b. Improvements: \$500
  4. New York Avenue (Not Mortgaged)
    - a. Purchase Value: \$200
    - b. Improvements: \$500
  5. Tennessee Avenue (Not Mortgaged)
    - a. Purchase Value: \$180
    - b. Improvements: \$500
  6. Ventnor Avenue (Not Mortgaged)
    - a. Purchase Value: \$260
    - b. Improvements: \$0

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## Player: Simran Aulakh, SECOND PLACE

- Final Cash Held: \$555
- Total Property Value: \$800
- Net Worth: \$1355
- Properties Held:
  1. Mediterranean Avenue (Not Mortgaged)
    - a. Purchase Value: \$60
    - b. Improvements: \$100
  2. Baltic Avenue (Not Mortgaged)
    - a. Purchase Value: \$40
    - b. Improvements: \$40

## Player: Steven Dytliuk, THIRD PLACE

- Final Cash Held: \$0
- Total Property Value: \$75
- Net Worth: \$75
- Properties Held:
  1. Water Works (Mortgaged)
    - a. Purchase Value: \$150
    - b. Improvements: \$0

\*note that purchase value is always the price associated to the property as listed on the Monopoly board.