

## Homework #1

### CPSC332 File Structures and Database Systems

spring 2023, due 02/15/2023

**Please write the last 4 digits of your campus wide ID on the front page of your homework.**

**Problem 1:** You are asked to design a database for a supermarket (selling toys) that satisfies the following requirements:

1. Each employee record has the social security number, name, address, telephone number, and salary.
2. Each category has a unique identifying number, a name, the aisle numbers where items from this category are arranged, and the employee who is in charge of managing that category. Only some employees are in charge of managing categories.
3. Each item has a name and is assigned a unique item number. One employee is designated to take care of the supply of the item.
4. The same item may have several sub-items. Each sub-item is given a sub-item number that is unique only within the item. Each sub-item has a retail price and the quantity of it left in the supermarket. Each sub-item is supplied by a specific manufacturer.
5. Each customer is assigned a unique customer number. The customer record keeps track of each customer's name, address, and telephone number. The name includes first name and last name. The address includes street address, city, state, and zip code. The telephone number includes area code and number.
6. The transaction record includes a customer, the date and time of the transaction, the sub-item in the transaction, and the quantity of the purchase.
7. The information of each manufacturer includes its unique name, address, telephone number, and the name of the person to contact.

Design the database using the Entity-Relationship model.

**Problem 2:** Do 3.21 in the book(7<sup>th</sup> edition).