# INST126 Intro to Programming for Information Science

Spring 2024

# Driver: Navigator:

## Problem Formulation: Personalized Grocery Coupons

The local grocery chain EasyWays it in the process of updating its checkout experience, and as part of this overhaul, your team is in charge of building a system that generates personalized coupons to customers. You are given access to a database of the most recent customer purchases. The database contains the following information, where there is one record per customer:

NNNN-NNN-NNN; YYYY-MM-DD; ITEM1, ITEM2, …, ITEMN;

Here NNNN-NN-NNN is the credit card number, where the first for digits indicate the company (1010 = Visa, 3567 = Mastercard, 8754 = American Express), while YYYY-MM-DD stands for date of birth, and it is present if the customer previously registered for the EasyWay loyalty program, otherwise it is set to 0000-00-00.

For example, one possible record could be

1010-123-4567; 1984-04-28; Eggs (dozen), Nyquill, LED Light Bulbs, Bud Light 6-pack

You are also given access to the complete inventory of items sold by EasyWay, currently organized around 4 major departments:

1. Produce & Deli
2. Pharmacy
3. Home essentials
4. Wine & Liquor *(only available to customer 21+)*

## Your Task

1. Create a Lucid Chart with a problem formulation diagram. The coupons should be for items that the customer is likely to purchase next time they shop at EasyWay, so you will need to give them good suggestions for items they are likely to need or want, based on their previous purchase. Include a link to the chart on this document (make sure to “share with all” when you generate the link).
2. On this document, briefly describe your approach. Describe in particular:
   * The main data you plan to use and their Python types
   * The main operations / functions you will need to use
   * The overall logical flow.

# Lucid Chart Link

# Chart Description