1. **Business Questions**:

How do promotions in different display/mailer locations (e.g., in-store, mailers) impact customer purchase behavior?

1. **Datasets**: <https://bradleyboehmke.github.io/completejourney/articles/completejourney.html>

* Coupon redemptions
* Transactions
* Products
* Promotions
* *Data Assumptions:*

Other than the FK (foreign keys) and PK (primary keys), we assume that the redemption\_date on coupon\_redemptions dataset is the same as transaction\_timestamp on transactions dataset.

1. **Hypotheses**:
2. Customer is likely to buy stuff at store-front even without coupons.
3. Stuff at certain display\_location with coupons will have the most purchase.
4. Customer is likely to redeem coupons if products are in mail (mailer\_location) at interior page feature.
5. Customer doesn’t use the coupons if products are not shown in mail (mailer\_location).

# Data explanation

1. **Final\_Transactions\_With\_Redemptions.csv**

* Including every transaction having coupons redeemed
* No unique key included
* No total\_sales calculated

1. **Transactions\_W\_Redemptions\_Display\_Location.csv**

* Unique key combination: product\_id, store\_id
* Including total\_sales of each unique combination of product\_id and store\_id, along with other info about department, product\_type, product\_category
* Only have display\_location != 0
* Display location (0-no display, 1-store front, 2-store rear, 3-front end cap, 4-mid-aisle end cap, 5-rear end cap, 6-side aisle end cap, 7-in-aisle, 9-secondary location display, A-in-shelf)

1. **Transactions\_W\_Redemptions\_Mailer\_Location.csv**

* Unique key combination: product\_id, store\_id
* Including total\_sales of each unique combination of product\_id and store\_id, along with other info about department, product\_type, product\_category
* Only have mailer\_location != 0
* Mailer location (0-not on ad, A-interior page feature, C-interior page line item, D-front page feature, F-back page feature, H-wrap front feature, J-wrap interior coupon, L-wrap back feature, P-interior page coupon, X-free on interior page, Z-free on front page, back page, or wrap)

1. **Transactions\_W\_Redemptions\_Not\_Displayed.csv**

* Unique key combination: product\_id, store\_id
* Including total\_sales of each unique combination of product\_id and store\_id, along with other info about department, product\_type, product\_category
* Only have display\_location == 0
* Display location (0-no display, 1-store front, 2-store rear, 3-front end cap, 4-mid-aisle end cap, 5-rear end cap, 6-side aisle end cap, 7-in-aisle, 9-secondary location display, A-in-shelf)

1. **Transactions\_W\_Redemptions\_Not\_Mailed.csv**

* Unique key combination: product\_id, store\_id
* Including total\_sales of each unique combination of product\_id and store\_id, along with other info about department, product\_type, product\_category
* Only have mailer\_location == 0
* Mailer location (0-not on ad, A-interior page feature, C-interior page line item, D-front page feature, F-back page feature, H-wrap front feature, J-wrap interior coupon, L-wrap back feature, P-interior page coupon, X-free on interior page, Z-free on front page, back page, or wrap)

# Insights:

## Coupon types effect on sales:

* The superior performance of Type A highlights its potential as a model for future campaigns. Exploring the factors contributing to its success (e.g., product selection, customer targeting, promotional timing) could provide insights for improving the other campaign types.
* The lack of sales in certain departments for the other campaigns warrants further investigation. Understanding whether this is due to a lack of customer interest in those products, insufficient promotion visibility, or other factors could help refine future promotional strategies.