**OfferFit Engineering**

*Web/Full Stack Home Assignment*

**Data visualization for marketing personalization solution**

World Grocer is a premium grocery chain based in the United States. For several months, you have been working with World Grocer to implement a next-generation marketing personalization solution. The solution uses advanced statistical techniques to recommend which offer to send each customer such that Customer Lifetime Value (CLV) is maximized.

The pilot consists of a development period followed by a 2-month “go live & measure uplift” period. You have been asked to develop a data visualization tool to enable World Grocer stakeholders to analyze the solution performance over the course of the go-live period. A workshop with World Grocer helped generate the tool’s minimum requirements:

* See today’s date (2021-04-30)
* View KPIs at the top:
  + Total offers sent to date
  + Total repeaters (experiment group vs. control) to date
  + Total CLV (experiment group vs. control) to date
* Daily trending view of CLV, split between experiment group and control group

World Grocer provided a few additional tips:

* Customers in this campaign received only one offer
* offer\_history dataset (see dictionary below) indicates when in the campaign a customer received an offer, and if the customer became a Repeater
* Repeater is defined as a customer who has (1) redeemed the offer, and (2) returned at least once and completed a transaction after the offer redeem day
* CLV for each customer is calculated as follows: $50 \* is\_repeater - offervalue
* Feel free to go above and beyond minimum requirements, but you should focus on the quality and functionality of the visualization, not non-visualization related features (authentication etc.). We would prefer that the bulk of your time be spent on the front end as opposed to the API or data infrastructure.

**You have 48 hours to develop a prototype. When you are finished, please compress your solution (including a README with clear instructions on how to install and run your application) and upload it to the submission portal (alternatively, send over email to** [**nathan@offerfit.ai**](mailto:nathan@offerfit.ai)**). Good luck!**

Reference - data dictionary:

offer\_history

* **campaign\_day** - **Day number of campaign**
* **offerdate** - The date a customer received the offer
* **customer\_id** - A unique id representing a customer
* **chain\_id** - An integer representing a store chain
* **offer\_id** - An id representing a certain offer
* **market\_id** - An id representing a geographical region
* **is\_repeater** - A boolean, 1 = customer has become a repeat customer based on transaction data (not provided)

offer\_lookup

* **offer\_id** – An id representing a certain offer
* **category\_id** - the product category (e.g., sparkling water)
* **quantity** – Number units one must purchase to get a discount
* **market\_id** – An id representing a geographical region
* **company\_id** - An id of the company that sells the item
* **offervalue** - The dollar value of the offer
* **brand\_id** - An id of the brand to which the item belongs