**README**

Programming Language: Java 8

Referenced Libraries: java-json.jar

Input file: input.txt

Output file: output.txt

Code Flow:

* CodeRunner class reads the input file into a json array.
* CUSTOMER, SITE\_VISIT, IMAGE and ORDER type events are read from Json array, and based on the verb, the corresponding methods are called which stores/updates the values in the eventsList with HashMap data structure, where key is key field and other attributes are values.
* Then the user is asked to enter the number of top\_x LTV customers to be viewed. With the user input and the, topXSimpleLTVCustomers method is called in ShutterflyLTVCalculator class. In this method, for each key in the eventsList, it is checked whether the key belongs to the instance of CUSTOMER class, if yes then, maxExpenditure from that customer is found out from the orders in the eventsList. Followed by that, customer's number of visits within a week is calculated using the method isWithinWeek. Then, customersLTV is calculated, added to CustomerLTV class and then sorted based on LTV values.
* Top\_x LTV customers are written to output.txt file as ArrayList with CustomerID and LTV values. If top\_x value is larger than the number of customers in the eventsList, then the output will have LTV calues for all the customersin eventsList.

Assumption: The analytic method TopXSimpleLTVCustomers is only one potential method of looking at the data ingested. Ingest method is implemented in the code but never called and could be called if needed.