

# Coding Challenge

## Processing Customer Transactions

Your team has been asked by the Finance department to create a program that can process customer transactions. Customer transactions are received by file and need to be processed and applied to customer loan accounts.

During an analysis meeting with stakeholders from the Finance department the following information is made available

- Customer transactions are received as a File daily
  - once at 06:00 hours
  - once at 21:00 hours
- File is received in csv format, example format

```
"Customer Account#", "Transaction Amount"
123456789, 100.00
987654321, -50.00
```

- Each line in the file represents a customer transaction
- Negative transaction amounts represent a debit against a customer account, and the customers account balance is increased
- Positive transaction amounts represent a credit against a customer account, and the customers account balance is decreased.
- Customer accounts numbers contain numerical characters only, however
  - some lines are encountered where the account number contains non numerical characters - these lines are considered corrupt
  - corrupt lines should not be processed but skipped
- Files are received in a directory located at \$TRANSACTION\_PROCESSING/pending, where
  - \$TRANSACTION\_PROCESSING is an environment variable referencing a arbitrary directory on each machine the program will execute
  - the format of the file finance\_customer\_transactions-\$(datetime).csv, where \$(datetime) represents the time the file was written to the filesystem
- When a file is received, processing of the File should commence within 5minutes
- Each file can contain up to 500K customer payments
- Files must only be processed once
- Processed files should be placed in \$TRANSACTION\_PROCESSING/processed
- The same customer account number can appear multiple times in a customer payment file
- Initially the Finance stakeholders would like to see the program process each file and produce a text report detailing
  - name of the file processed
  - the number of accounts processed
  - total credit amount
  - total debit amount
  - number of skipped lines
- An example report was provided

```
File Processed: finance_customer_transactions-20171201060101.csv
Total Accounts: 203,102
Total Credits : $856,480.70
Total Debits : $100,132.50
Skipped Transactions: 103
```

- The report should be written to the directory \$TRANSACTION\_PROCESSING/reports
  - report file name should be of the form finance\_customer\_transactions\_report-\$(datetime).txt

## The Challenge

Your team asks you to come up with a initial prototype that satisfies the given requirements. Your team would like to perform a peer review of your design, code structure and any other supporting artefacts you think will aid future developers.



The team decides that you can use any design, programming language, coding style, build tools or development methodology to complete the prototype.

There is no time limit to complete the prototype - but with the Finance department looking for the best solution they are keen to move on the best prototype submitted.

Please submit your prototype as a zip file, any supporting documentation should be included as word, pdf or text.