Prompt:

We would like you to implement a "Transaction Processor" that processes an array of Transaction messages that each represent a different operation to be performed on virtual bank accounts. **After processing all inputs, you will also need to print each account and its resulting balance.**

Transaction Message Specifications:

Each Transaction message is formatted in the following way:
- The first four characters represent type of Transaction Operation being requested
- You will need to parse each message based on the message type format.
    - Note the `LLVAR` type - This is an alphanumeric field of variable length. It has a 2-digit field header at the beginning, indicating the length of the rest of the field, which can be 0 to 99.
- Depending on the type of transaction, there may be different data to be parsed
- Depending on the type of transaction, different operations must be performed
- Any Dollar amounts are represented in cents
- **You can assume any input data is well formatted according to the specifications given**

Operations

Deposit Request:
- Transaction Request Code: `1010`
- Format: **1010<LLVAR-ACCOUNT-NUMBER><AMOUNT-IN-10-DIGITS>**
    - Eg. **1010**10**8888888888**0000010000
        - **1010** – Deposit Request
        - 10 – Length of Account Number
        - **8888888888** – Account Number
        - 0000010000 – Deposit amount in Cents
- For the given account, add to its existing balance.
- **Restrictions:**
    - **The maximum amount allowed to be loaded in a single transaction is 1000.00 USD. If the amount requested to be loaded is greater than 1000.00 USD, then the transaction should be denied and the account balance should not be updated.**
    - **If the account doesn't exist, then create the account with the requested amount, but only if the transaction amount isn't above the deposit limit.**

Withdrawal Request:
- Transaction Request Code: `1020`

- Format: **1020<LLVAR-ACCOUNT-NUMBER><AMOUNT-IN-10-DIGITS>**
    - Eg. **1020**10**8888888888**0000010000
        - **1020** - Withdrawal Request
        - 10 - Length of Account Number
        - **8888888888** - Account Number
        - 0000010000 - Withdrawal amount in Cents
- For the given account, debit the requested amount from the balance.
- Restrictions:
    - **Only allow the withdrawal if:**
        - **If the account exists and has appropriate funds for the withdrawal**
        - **The amount to be withdrawn is no more than 200 dollars (ie. less than or equal to 0000020000)**
        - **The account cannot have more than 500 dollars withdrawn from it in total.**

Sample Input/Output:

Input:

```
Unset
10100712345670000200000
10100644477770000100000
10100712345670000080000
10100623459100000040000
10100644477770000050000
10100611111100000200000

# Account Balances at this point should be:
# 444777 - $1,500
# 1234567 - $800
# 234591 - $400

10200644477770000020000
10200644477770000020000
10200712345670000020000
10200712345670000020000
10200712345670000015000
10200623459100000030000
```

```
102006111110000010000

# Account Balances at this point should be:
# 444777 - $1,100
# 1234567 - $400
# 234591 - $400
```

Output:

```
Unset
# Account - Balance in Cents USD
444777 - 110000
1234567 - 40000
234591 - 40000
```