I. Aadhar:

0. Append aadhar file with new citizens : *you already have the solution which I shared.*

1. Update aadhar file with new records :

   Pre-requisite : have an aadhar file with id,name,yearofbirth ; have id as string such as id0, id1,id2,e.t.c.

   Use functions to wrap your logic for better modularity , list comprehensions/map function for faster computation ,less number of variables and give appropriate names for variables.

   Pseudocode:

```
While true:
    Get id as input
    If id entered is not a string:
        Print ('id entered is not a string. Give a string data type')
        Skip the remainder of this iteration and get id again
    If ( id is found in aadhar file ) :
        get the old and new name as comma separated string
        if (old OR new name is not a string (string here means it should contain only alphabetic chars) ):
            Print ('name entered is not a string. Give a string data type')
            Get old and new name again as input. If both old and new name are of string data type, you can continue to next logic  ( you can think of a nested while loop here)
        if ( old name is found – do a case in-sensitive equality test ):
            restrict the length of new name to 10 chars. (try giving new name with 20 chars and limit its length to 10 chars)
            update the old name with new name in aadhar file
            print the message 'your old name is updated successfully with new name'
        else:
            print('Old name entered is invalid')
    else:
        print ('id not found. Try again')
```

if (id equals ‘stop’):

exit the loop

Outside the while loop, your code should be in place to handle the following pseudocode:

get year of birth as input

if (year of birth matches with dd/mm/yyyy pattern):

print all the person names and ids who share the same year of birth

else :

print (‘ bad format of yob. Try again’)

II. Statistics:

Get mean, median and mode of a list of numbers.

Mean – sum of all elements / length of sequence

Median – middle number of a list. If length of list is even, median is sum of middle numbers / 2 ; if length of list is odd, median is just the middle number

Mode – most frequent number in a list

Do not use any readymade functions for computing mean,median and mode. Use programming concepts to compute.

III. Login credentials’ validation:

Get your user name and password as input as a comma separated string

Validate if name and password is a string. Else, exit

If length of user name exceeds 10 chars, print message and exit

Or if length of password exceeds 8 chars, print message and exit

Validate if user name contains a mix of capital and lower case. If not,print message and exit

Validate if password contains atleast one alphabetic char, numeric char and one special symbol like @#$%!^&*. If any one of validation fails, print message and exit

If all above validation passes, store your username and password as login_info.txt file

Run the script again. During your second run, ensure the username should be unique before storing into the file. If username is already found, don’t store it. In your second run, try updating the password for a username similar to aadhar solution.