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COMP101 – Assessment 05

Python code –

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# 201358937 Tonge_Brandon-CA05.py
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# This program accepts the first and last names of multiple people
# and then converts then into 'alien' names. Removing any names with no
# vowels and giving the user the option to delete any names from the list.

## The program contains an empty list as well as a list that has already
## been populated in the 'alien' function. The populated list is missing
## the name "Chloe Smyth' which once inputted completes the program giving
## the correct output as per the specifications. The empty list can also be
## used and the program will still work as intended but the final output
## will be off because it relies on a specific list of names.

# Main Function
def main():

    # Main Menu
    print("\n---Main Menu---")
    print("A - Aliens")
    print("E - Extend")
    print("X - Exit Program")
    print("")
    choice = str.upper(input("Please select an option from the menu: "))

    # TEST
    # print(choice)

    # Function Selection
    if(choice == "A"):
        aliens()

    elif(choice == "E"):
        extended()

    elif(choice == "X"):
        exit()

    else:
        print("\nPlease enter a valid choice!\n")
        main()


def aliens():

    # Complete list for testing - Need to add last actor in the console
    actor_names = ["Andrei Stephens", "Harry Venables", "Stephanie Myrah",
                   "Dianne Davies", "Yuan Spield", "Ness Helter", "Sadiq Elbahi",
                   "Fred Brynn", "Zeng Ergan",]
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# Create actors name list
# actor_names = []

# While loop adding actors names to "actor_name" list
exit = "Y"
while (exit != "N"):
    name = input("\nPlease enter the actors first and last name: ")
    try:
        test1, test2 = name.split()
    except:
        print("\nPlease enter a valid name!")
        continue


    actor_names.append(name)
    exit = input("\nDo you want to enter another name? Y/N : ").upper()
    while (exit != "Y" and exit != "N"):
        print("\nPlease input a valid choice: ")
        exit = input("\nDo you want to enter another name? Y/N : ").upper()


# Create alien names list
alien_names = []

# For every actor name, split it in two and then preform the alien name conversion
for i in range(len(actor_names)):
    name = actor_names[i]
    splitfirst, splitlast = name.split()

    # Testing
    # print(splitfirst)
    # print(splitlast)

    firstslice = splitfirst[0:2]
    lastslice = splitlast[0:3]
    firstreverse = str.lower(firstslice[::-1])
    alien = lastslice + firstreverse
    alien_names.append(alien)

# Testing
# print(actor_names)
# print(alien_names)
# print("stop")

# Print out all the alien names
print("\n-Ref-  -Alien Name-")
for i in range(len(alien_names)):
    print(" ", i, "      ", alien_names[i])

# Ask if user want to delete a name and then run the delete function
choice_remove = input("\nWould you like to delete a name?: Y/N ").upper()
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    while (choice_remove != "Y" and choice_remove != "N"):
        print("\nPlease input a valid choice: ")
        choice_remove = input("\nDo you want to delete a name? Y/N : ").upper()
    if choice_remove == "Y":
        alien_names = delete_from_list(alien_names)

    # Testing
    # print(alien_names)
    # input("stop")

    # Send the alien names to the vowel remove function and return the list
    # and a no vowel list as well
    alien_names, alien_no_vowels = remove_vowels(alien_names)

    # Testing
    # print(alien_names)
    # print(alien_no_vowels)

    # Send the alien names list and the actors list to the final name function
    final_name(alien_names, actor_names)


def delete_from_list(alien_names):

    # Remove name from the list based on the user input
    choice_remove = "Y"
    while choice_remove == "Y":
        try:
            remove = int(input("\nWhich reference would you like to delete?: "))
            while (remove < 0 or remove > len(alien_names)):
                remove = int(input("\nPlease enter a number in the reference list: "))
        except ValueError:
            print("\nPlease enter a valid integer!")
            continue


        alien_names.pop(remove)

        print("\n-Ref-  -Alien Name-")

        for i in range(len(alien_names)):
            print(" ", i, "      ", alien_names[i])

        choice_remove = input("\nWould you like to remove another name? Y/N :").upper()
        while (choice_remove != "Y" and choice_remove != "N"):
            print("\nPlease input a valid choice: ")
            choice_remove = input("\nDo you want to enter another name? Y/N : ").upper()

    # Return list to the alien function
    return alien_names
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def remove_vowels(alien_names):

    # Create no vowel list and define vowels in another list
    no_vowels_list = []
    vowels = ["a", "e", "i", "o", "u"]

    # Search each name in the alien list to see if they contain any letter from the vowel
    # list, moving the name to another list if they don't
    for word in alien_names:
        no_vowels = True

        for letter in word:
            if letter in vowels:
                no_vowels = False

        if no_vowels == True:
            no_vowels_list.append(word)

    # Remove any name that is in the no vowel list from the alien name list
    alien_names = [x for x in alien_names if x not in no_vowels_list]

    # Return both lists to the alien function
    return alien_names, no_vowels_list


def final_name(alien_names, actor_names):

    # For every name in the list take the first 3 letters and combine them into one
    # string
    finished_name = ""
    for x in range(len(alien_names)):
        name = alien_names[x][0:3]
        finished_name = finished_name + name

    # Split the combined name and format it as a name
    first_name = finished_name[0:5].title()
    last_name = finished_name[6:].title()

    # Print the final name as well as the alien list and the actors list.
    print("\n-----", first_name, last_name, "Presents: -----")

    print("\n-Ref-  -Alien Name-")
    for i in range(len(alien_names)):
        print(" ", i, "      ", alien_names[i])

    print("\n-Ref-  -Actor Names-")
    for i in range(len(actor_names)):
        print(" ", i, "      ", actor_names[i])

    main()
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def extended():

    print("Extended")
    main()


main()
```

Testing –

The testing of this program is different from the other ones as I am not testing for specific values. Because of this I am going to take a more text-based approach to testing. Also, the requirements of the program were tied to a specific set of inputs. Despite this I have programmed it so that it can be used with any sets of names. This testing will prove the program outputs as it is required and also that each entry has data validation.

Overall-
The program over all requires the user to input 10 actors names and then convert them to alien names. Along the way the user has the ability to remove any alien names that are real names before the program removes any names with no vowels and then prints them. To test this, I created a list that contained all the required names and then ran the program, adding the final name when prompted. I expected the program to let me remove any names I wanted, in this case it was reference 3 and then 4. Once this was done the program should remove any names with no vowels and then print 5 alien names and 10 actors names. As well as this it should take the first 3 letters from each alien name and create a directors name. If I use these 10 names the program works as it should, outputting the correct names.

Name input –
The first input is the actors names. This input requires a first and last name separated by a space. This is tested by a try and except loop looking to see if the input can be split. I tested this by entering a single string with no spaces. This prompted the except error message just as expected. The program continues if I enter a name following the correct format.

Enter another name –
The next option is a simple yes or no asking the user if they want to add another name to the list. This Is validated with a simple while loop, prompting an error message if “Y” or “N” isn’t imputed. To test this, I first entered Y and then N to see if they take the user to the correct function. After that I entered a random character to check the loop. As expected, all the inputs did the right thing. Y and N took the user to the correct places in the program and the random character gave the error message and asked the user to enter the value again.

Delete a name –
This input is almost identical the last one. A simple while loop validates the two expected inputs showing an error message if they are not entered and then giving the user another chance to enter it. I tested this the same way with both a “Y” and “N” and then a random string. The loop worked as expected and the random string cause the error with the “Y” calling the delete function and “N” skipping past it.

Delete reference –
This input uses a try and except with a nested while loop to validate the input. It prompts the user to enter a number which is linked to a list printed before it. This reference is then deleted from the list. To test it I entered the reference I wanted to delete and then printed the list again to check it had been correctly removed. Then I tried to enter a random string instead of

a number, this was caught by the try and except showing an error message and asking me to input a valid choice. I then entered a number that wasn't in the range of references. This was caught by the while loop and caused the error message again. Given these inputs I was happy that only numerical values from the reference list could be entered.

Remove another name –
This is another basic while look checking for "Y" or "N". I tested it the same as the other two by entering the two expected values and another random string. The two correct inputs took me to the right place in the program while the random string caused an error message and asked me to enter again. I was satisfied this loop was working correctly.

I am happy the program will work as expected under normal use. Each input has appropriate validation and the outcome using the set list is what was expected. Each function works as expected and has not shown to produce any errors in my testing.

Pseudocode –

LOOP until the user doesn't want to input any more names
    OUTPUT "Enter actors name"
    INPUT actor names
    STORE in Actor_name list

LOOP for every actor name
    SPLIT each actor name in the list
    REMOVE 2 characters from the first name and 3 from the second
    REVERSE the characters from the first name
    JOIN bother 2 and 3 characters together
    STORE in alien names list

LOOP until user doesn't want to remove any more names
    OUTPUT alien names list
    OUTPUT "Which name would you like to remove?"
    INPUT reference number
    STORE in reference number variable
    REMOVE reference from alien names list

LOOP for every name in alien names
    CHECK each character for vowels
    REMOVE the name if it doesn't contain a vowel from alien name list
    STORE the name in no vowels list

LOOP for every alien name
    REMOVE 3 characters from the alien name
    JOIN the characters into a single variable
    STORE in finished name variable

OUTPUT finished name variable
OUTPUT alien names list
OUTPUT actor names list

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