

Day 3 @January 4, 2024

Topics

- More loops
 - While loops for taking inputs and running something until a condition is met
- For loops
- Lists
- Modules
- For loops and lists to make a grocery shopping app
- functions and python
- Project to make a calculator using functions

Get user input using while loops:

- We want to improve the login screen and ask the user for their password repeatedly until they get it right. Maximum tries should be 4.

Break statements in while loops

```
trys = 0
while True:
    # user input in variable password
    if trys == 4:
        print("you are locked out")
        break

    password = input("Please enter a password")

    trys = trys + 1
```

```
if password == "mypassword":  
    print("Hey welcome to the screen")  
    break
```

For loops:

- For loop does things for a certain number of times
- While loops run until a condition is true
- For loops are used when you know how many times you need repeat a piece of code
- Go through the items in a list

```
#for loops in python  
  
#count from 0 till 10  
  
for count in range(11):  
    print(count)
```

- Range gives you a list of numbers

List

- List is collection in Python
- Take the example of a Shopping list:
 - Eggs
 - Milk
 - Bread
 - Toys

- Bunch of shopping related stuff
- Python also has a list of things called lists
- List of names
- List of numbers
- List of Objects
- List of names and numbers
- They provide you a way of grouping stuff together
- You access values through the list index
- Index is the position of a value in your list
- indexes start at 0
- Lists are mutable (so they can change)
- You can add things to a list
- Remove things from a list

```
#List have square brackets around them
```

```
new_list = [1,2,3,4,5]
```

```
# The first value in the list is at the 0th position or index
```

```
# Second value will be at the 1st index
```

```
#.
```

```
#.
```

```
#.
```

```
# The 5th value will be at the 4th index
```

```
#to access values you index into the list
```

```
list_name[index]
```

```
my_list = [1,2,3,4,5, "ABCD"]
```

```
my_names = ["Ahmed", "Dylan", "Arabella", "Avni", "Paloma"]
```

```
print(my_names[0])
```

```
print(my_list[5])

#Adding things to a list
shopping_list = ["cereal", "bread", "milk"]
shopping_list.append("cooking oil")

#Remove thing from a list
shopping_list = ['cereal', 'bread', 'milk', 'cooking oil']
#I want to remove cooking oil (last item)
shopping_list.pop()
#You want to remove the first item
shopping_list.pop(0)

#to get the size of list
len(shopping_list)
```

Project 3:

Using a while loop, iterate through a list

```
my_list = [1,2,3,4,5,6,7,8,9,10,11,12,13]
#my_letters = ["a","b","c","d","e","f","g"]
count = 0
while count < 13:
    print(f"the current value in the list is {my_list[count]}")
    count = count + 1
```

Project 4:

```
#Adding things to a list
shopping_list = ["cereal", "bread", "milk"]
shopping_list.append("cooking oil")
```

```
#Remove thing from a list
shopping_list = ['cereal', 'bread', 'milk', 'cooking oil']
#I want to remove cooking oil (last item)
shopping_list.pop()
#You want to remove the first item
shopping_list.pop(0)

#to get the size of list
len(shopping_list)
```

- Built a shopping list program that can
 - Take new item and add it to your list (press 1 to add an item)
 - Remove items from the start of the list (press 2 to delete an item)
 - Print the list one by one (press 3 to print list)
 - Print the current size of the list (press 4 to get size)
 - Option for the user to quit (press 5 to exit)
- Start with a while True
- Take user input
- compare user input to your options (1, 2,3,4 ; A,B,C,D) using if statements
- and inside each if and elif you will perform a certain action on your list
- break out of the loop if the user inputs stop

```
shopping_list = []
while True:
    print("Press 1 to add an item")
    print("Press 2 to remove an item")
    print("press 3 to print the list one by one")
    print("press 4 to print the size of the list")
    print("press 5 to quit")

    user_input = input("Please enter a number")
```

```
if user_input == "1":
    item = input("please enter the name of the item to add")
    shopping_list.append(item)
    print(f"item {item} has been added")
elif user_input == "2":
    if (len(shopping_list) == 0):
        print("Your list is empty")
    else:
        print(f"removing item {shopping_list.pop()}")
elif user_input == "3":
    for thing in shopping_list:
        print(thing)
elif user_input == "4":
    size_of_list = len(shopping_list)
    print(f"list size is {size_of_list}")
elif user_input == "5":
    print("thanks for using the app, Bye :)")
    break
else:
    print("invalid input try again")
```