Info4

Functions
#function with no parameters/arguments
#and no return value
#return is optional if you do not return a value
def nameOfFunction():
print ('This function has no parameters')
print ('This function has no return value')
return # no value, just exits the function
#function call
nameOfFunction()
#function with 1 parameter/argument
def testFunction(param):
print ('This function has 1 parameter')
print (param)
#function call
testFunction ("this is the parameter value")
#function with 2 parameters and a return value
def function3(param1, param2):
print('This function has 2 parameters')
return param1 + param2 # return value
#function call and store the result in a variable
returnValue = function3(2, 3)
print (returnValue)

info3

Lists:
mylist = [2,3,4,5] # create a list
#select an item from a list
print (mylist[0]) #selects first item and displays 2
len() determines the length of the list
print (len(mylist)) # displays 4
mylist.append(5) # adds an item to the end of the list
While Loop with List:
thelist = [4, 3, 2, 1, 0]
index = 0 # start at the first item
while index < len(thelist):

info3 (cont)

print (thelist[index]) #prints each item
index = index + 1
For-Loop with List:
forlist = [3, 4, 5, 2, 1]
for item in forlist:
print(item)
Range()
#creates a list of numbers from 0 to the specified
number
numberlist = range(5)
# is the same as creating the following list
numberlist2 = [0, 1, 2, 3, 4]
for num in range(100):
print (num) # prints all numbers from 0 – 99
for num in range(5, 50):
print(num) #prints all numbers from 5 - 49

Python4-Methods

```
#Mill's method
word= input( " Please enter yout word")
index= len(wo rd)-1
reverse= ''
while (index >-1):
        rev ers e=r eve rse +wo rd[ index]
        ind ex= index-1
print (reverse)
#mr's method
word= input( " Please enter yout word")
index=0
reverse=''
while index< len(word):
        rev ers e=w ord [in dex]+ reverse
        ind ex= index+1
print( " rev erse: " ,re verse)
```


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Python6

```
import random
#Create a list
guesslist = ['grape', 'orange', 'chlor opl ast',
'ribos ome', 'lipst ick']
chance = 3
score = 0
print (guess list)
while chance != 0:
        ran dom _item = random.ch oic e(g ues -
slist)
        use r_input = input( " Please guess a
word: ")
       if user_input == random _item:
                print ("That's correc t!")
                score = score + 100
                print ("Sc ore :", score)
        else:
               if user_input not in guesslist:
                        print ("Sorry, that isn't
even in the list!")
                        chance = chance - 1
                        print ("Chance Remain -
ing :", chance)
                else:
                        print ("Sorry, wrong
choice !")
                        chance = chance - 1
                        print ("Chance Remain -
ing :", chance)
if chance == 0:
        print ("The word was", random _item)
        print ("The score is", score)
```

Keywords

print()	Show information that you want on the screen
int()	Change number to be number integer
float()	Change number to be decimal number
input()	Gain information from user
str()	A list of number, letter and symbols

Keywords (cont)

len()	The length of the string
#	Comment, no effect
import random + random.choice()	pick random item in the list
==	equal to
!=	no equal to
<	less than
>	more than
<=	less than or equal
>=	more than or equal
%	Modulo, Find the remainder
string + string	combine together
string + number	CRASH
number + number	addition (Math)
string * number	combine that string
string* string	CRASH
number * number	Multiply (Math)
number ** number	Exponent (Math)
string ** number	CRASH
Variable	Hold a value and can be change
String	A list of character such as number, letter and symbols
Integer number	Whole number/counting number
Floating point	The number in decimal

convert dec num into its Binary form

```
number = int(input("Enter number: "))
binary = " "
while number> 0:
remainder = number % 2
binary = str(remainder) + binary
number= number//2
print(binary)
```


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determine whether user inout is pos or neg num

```
number = int(input("Enter number: "))
     if number >0:
        pri nt( number, "is positi ve")
      pri nt( num ber ,"is negati ve")
```

Python1-Methods

```
"""
Python Intro Assignment #2
name
student number
" " "
#Ask the user for a radius of a circle
user_r adius =(inpu t("What is the radius ?"))
#Convert the given radius to a floating point
radius= float( use r_r adius)
#make a variable called pi
pi = 3.1415
#Calculate the area of the circle using exponents
area =(pi*(radius*2))
#diaplay the area of the circle to the user
print( "The area of the circle is", area)
```

ask user for input

```
mylist = [ ]
for number in range(5):
mylist.ap pen d(i npu t("Enter value: "))
```

Ask the user fro input 5 items and add the values t a list called mylist, then print the list

largest value

```
number= [3, 2, 77, 32, 9, 8, 31]
      largest = 0
   for value in number:
   if number> largest:
        largest = number
      print (largest)
```

Determine the largest value from a given list

func take radius,give back a of circle A=pi r*r

```
def AreaOfCircle(radius):
A=3.14*radius*radius
return A
num= int(in put ("Enter a radius: "))
   x= AreaOf Cir cle (num)
      pri nt(x)
```

info2

Basic Math Operations:
+ addition, - subtraction
/ divide with answer as a float. E.g. 5/2 == 2.5
// divide with answer as an integer. E.g. 5//2 == 2
* multiply
exponent. E.g. 2 power 3 == 2 3
% modulo. Gives the remainder when dividing
e.g. 33 % 10 == 3
All math operations use the same order of operations as Math class.
Comparing Values:
When you compare two values, the result is a Boolean (True or False) E.g. 2 == 3 is False
- == is equal to
- != is not equal to
- < less than
- <= less than or equal to
- > greater than
- >= greater than or equal to
- and
- or
- not

True or anything is always True
False and anything is always False
Forever While Loop

```
while True: # forever
user_input = input('Enter a number: ')
number = int(user_input)
```


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info2 (cont)

print ('The number squared is', number ** 2)
Conditional While Loop:
count = 0 # start at zero
while count < 10: # loop while count is less than 10
print(count) #will print numbers 0 - 9
count = count + 1 # must increase count
Decision Making/Conditional Statements:
if 3 < 2: #if statement must compare two Booleans
print ('3 is less than 2')
elif 4 < 2: #can have 0 or more elif statements
print ('4 is less than 2')
elif 5 < 2:
print ('5 is less than 2')
else: #can have 0 or 1 else statement at the end
print ('none of the above are True')

Info

Vocabulary:
syntax, variable, Boolean, string, integer, float,
list, comment, character, conditional, modulo,
if/elif/else, loop, range, parameter, argument,
function call,
Data Types:
String - a list of characters e.g. "abc123$%^", or
empty string ""
Integer - whole numbers, and negative numbers e.g. -5,
0, 2, 99
Floating Point - decimal numbers e.g. 1.5, 2.0, -2.99
Boolean - True or False
User input:
user_input = input("Enter a value: ")
Converting between different data types:
word = str(3) #converts 3 to a string "3"
num = int("3.5") #converts "3.5" to an integer 3
num = float("3") #converts "3" to a float 3.0
Printing values:

Info (cont)

print("hello", "there") #displays hello there
print("hello" + "there") #displays hellothere
Combining Strings (Concatenation)
"hi" + "there" == "hithere"
"hi" * 5 == "hihihihihi"
Comments
hashtag – everything after # is a comment not code
"""
Double quote - Multi-line comment, everything in
between three double quotes is a comments
"""
''' Single quote - Multi-line comment, everything in
between three single quotes is a comments '''

stop the loop

```
mylist =[ ]
                    while True:
value = input( " Enter value: ")
         if value == " *"
                      break
                else:
           myl ist.ap pen d(v alue)
print (mylist)
```

continuously ask the user for input if the user types star,stop the loop and print the list

create mylist: dont know what inside

```
for number in mylist:
      print (number)
```

Create a program which prints every element from a list called mylist[ ] : you do not know what is inside the list

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pattern based on user input

```
1= !
2= !!
           !!
3= !!!
         !!!
         !!!
```

determine whther user input is even or odd

```
number= int(input("Enter number: "))
     if number%2 ==0:
print (number, "is even num")
else:
print (number, "is odd num")
```

Python5-Methods

```
#lists
shoppi nglist = ['phone', 'battery', 'charger']
for item in shoppi nglist:
        print (item)
for number in range (1, 10):
        print (number)
for number in range(5):
        print (number)

###### ### ### ### ### ### ### ### ### ### ### -
### ### ### #####
#lists
fruits= []#an empty list
for number in range(5):
        use r_f ruit= input( " Please enter a
fruit")
        fru its.ap pen d(u ser _fruit)
print ("size of fruit list is", len(fr uits))
for fruit in fruits:
        pri nt( " Fruit: ", fruit)
```

Python2-Methods

```
#write a program that converts a number to binary
#get a number from the user
user_n umber = int(in put ("Enter a number to
convert to binary: "))
#while loop
#
while (user_ number >0): #the number is greater
than 0)
        rem ainder =
        bin ary _string =
        bin ary _string =
#after the loop print the binary string
print ("Binary string is", binary _st ring)
#expected output - 5 =101
#expected output - 3 =11
#expected output - 2 =10
```

Python3-Methods

```
number= int(input("What's your number?")

while( num ber >=1):

                        pri nt( number)
                        num ber =nu mber-1

convert= int(in put ("What do you want to convert
to?")
```


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