Python1-Methods

```
"""
Python Intro Assignment #2
name
student number
"""
#Ask the user for a radius of a circle
user_radius =(input("What is the radius?"))
#Convert the given radius to a floating point
radius= float(user_radius)
#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)
```

Python4-Methods

```
#Mill's method
word= input("Please enter yout word")
index= len(word)-1
reverse= ''
while (index>-1):
    reverse=reverse+word[index]
    index=index-1
print (reverse)
#mr's method
word= input("Please enter yout word")
index=0
reverse=''
while index< len(word):
    reverse=word[index]+ reverse
    index=index+1
print("reverse: ",reverse)
```

Python6

```
import random
#Create a list
guesslist = ['grape', 'orange', 'chloroplast',
'ribosome', 'lipstick']
chance = 3
score = 0
print (guesslist)
while chance != 0:
    random_item = random.choice(guesslist)
    user_input = input("Please guess a word: ")
    if user_input == random_item:
        print ("That's correct!")
        score = score + 100
        print ("Score:", score)
    else:
        if user_input not in guesslist:
            print ("Sorry, that isn't even in the
list!")
            chance = chance - 1
            print ("Chance Remaining:", chance)
        else:
            print ("Sorry, wrong choice!")
            chance = chance - 1
            print ("Chance Remaining:", 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
len()	The length of the string

Keywords (cont)

#	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)
```

determine whether user inout is pos or neg num

```
number = int(input("Enter number: "))
   if number>0:
    print(number, "is positive")
   print(number,"is negative")
```

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

ask user for input

```
mylist = [ ]
for number in range(5):
mylist.append(input("Enter value: "))
```

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

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):
print (thelist[index]) #prints each item
index = index + 1
For-Loop with List:
forlist = [3, 4, 5, 2, 1]
for item in forlist:

info3 (cont)

```
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
```

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)
```

Python2-Methods

```
#write a program that converts a number to binary
#get a number from the user
user_number = int(input("Enter a number to convert to
binary: "))
#while loop
#
while (user_number >0): #the number is greater than 0)
    remainder =
    binary_string =
    binary_string =
#after the loop print the binary string
print ("Binary string is", binary_string)
#expected output - 5 =101
#expected output - 3 =11
#expected output - 2 =10
```

Python5-Methods

```
#lists
shoppinglist = ['phone', 'battery', 'charger']
for item in shoppinglist:
    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):
    user_fruit= input("Please enter a fruit")
    fruits.append(user_fruit)
print ("size of fruit list is", len(fruits))
for fruit in fruits:
    print("Fruit: ", fruit)
```

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")
```

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

```
def AreaOfCircle(radius):
A=3.14radiusradius
return A
num= int(input("Enter a radius: "))
  x= AreaOfCircle(num)
   print(x)
```

pattern based on user input

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

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

stop the loop

```
mylist =[ ]
          while True:
value = input("Enter value: ")
     if value == "*"
           break
        else:
     mylist.append(value)
print (mylist)
```

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

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:
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 '''

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)
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

info2 (cont)

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')

Python3-Methods

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


while(number>=1):


            print(number)
            number=number-1


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