

Vocabulary

Variable	Hold a value and can be changed. It can also be set to a string of words
String	A list of character such as number, letter and symbols
Integer number	Whole number/counting number
Floating point	Numerical values in decimal
Syntax	Grammar/Structure of language
Modulo	Used to find a remainder
Boolean	True or False

Commands

print()	A command used to print something
int()	A command used to convert any kinds of number into integer
float()	A command used to convert any kinds of number into decimal numbers
input()	A command used to obtain information from the user
str()	A command used to convert letters or numbers into a string
len()	A command used to determine the length of a string
#	A command used to make statements a comment that does not have any effect on the coding

Mathematical operators

==	equal to
!=	not equal to
<	less than
>	more than
<=	less than or equal to
>=	more than or equal to
%	Modulo, used to find a remainder

Addition

string+string	Combine the two strings together
string- +number	CRASH!
number- +number	Add numbers together

Multiplication and exponents

string- *number	Duplicate the strings x time = numerical r values
string- *string	CRASH!
number- *number	multiply numbers together
string**s- tring	CRASH!
number- **number	Exponent(math)
string**n- umber	CRASH!

Variable names condition

Following conditions must be followed:

- letters
- numbers
- underscore

Valid name

- _myStr
- my3
- Hello_there

Invalid name

- 3my="hi" -- cannot start with number
- first name="hi"
- first-name
- first+name

positive integer and negative integer

```

evencount=0
oddcount=0
while True:
    num=int(input("enter a positive integer"))
    if num<0:
        print("even numbers:",evencount)
        print("odd numbers:",oddcount)
        break
    else:
        if(num%2)==0:
            evencount=evencount+1
        else:
            oddcount=oddcount+1

```

Multiplication table

```

number=int(input("enter a number"))
def multiplicationTable (number):
    count=1
    while count<=10:
        print(number,"",count,"=",numbercount)
        count=count+1
    multiplicationTable(number)

```

Fibonacci

```

num1=0
num2=1
fibonacci=num1+num2
while fibonacci<50:
    print(fibonacci)
    num1=num2
    num2=fibonacci
    fibonacci=num1+num2

```

Example

Print (2) – integer
 Print (2.5) – floating point
 Print ("Hello") – string
 Print (mystr) – variable
 Print (mystr,"Hi",2,1.0) -- commas
 mystr = "Hi"
 mystr ← Variable

Example (cont)

```
"Hi" ← value can be changed
print (int(1.5)) → 1
print (int("2")) → 2
print (float(1)) → 1.0
Modulo/Remainder %
print (4%2) → 0
print (30%7) → 2
```

Reverse Word

```
while True:
word = input("Please enter a word")
index = 0
reverse = ''
while int(index) < len(word):
reverse = word[index] + (reverse)
index = int(index) + 1
print ("Reverse: ", reverse)
```

Binary number conversion

```
#write a program that converts a number to
binary
while True: #forever loop is while True:
#get a number from the user
user_number= input("Choose you
number")
#convert to integer
number=int(user_number)
binary_string=""
while(number>0):#the number is greater
than 0)
remainder= number%2#use modulo %
binary_string= str(remainder)+ binary_string
number= number//2#must use//when you
divide
#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
```

Hexadecimal conversion

```
#write a program that converts a number to
hexadecimal
while True:
#get a number from the user
user_number= input("Choose your number:
")
#convert to integer
number=int(user_number)
hex_string=""
while(number>0):#the number is greater
than 0
remainder= number%16#use modulo %
number= number//16#must use//when you
divide
if remainder ==10:
remainder='A'
elif remainder==11:
remainder='B'
elif remainder==12:
remainder='C'
elif remainder==13:
remainder='D'
elif remainder==14:
remainder='E'
elif remainder==15:
remainder='F'
hex_string= str(remainder)+ hex_string
#after the loop print the hex string
print('hexadecimal string is 0x'+hex_string)
#expected output-5=101
#expected output-3=11
#expected output-2=1
```

Guess a word game

```
import random
Chances=5
Score=0
while Chances>0:
mylist=['Moscow','Berlin','Vancouver','Sai-
ntPetersburg','Chicago']
random_item=random.choice(mylist)
print(mylist)
print (random_item)
```

Guess a word game (cont)

```
user_guess=input("guess a word:")
if user_guess==random_item:
print("Chances remaining:",Chances)
print("Correct guess")
Score=Score+100
else:
Chances=Chances-1
print("Sorry, wrong choice")
print("Chances remaining:",Chances)
print("The correct answer was:",random_
item)
print("Your score now is:",Score)
```

selecting largest values

```
def max2 (num1,num2):
if num1>num2:
return num1
if num1<num2:
return num2
def max3 (num1,num2,num3):
if num1>num2 and num1>num3:
return num1
if num2>num1 and num2>num3:
return num2
if num3>num1 and num3>num2:
return num3
num1=input("Enter your num1:")
num2=input("Enter your num2:")
num3=input("Enter your num3:")
print("the largest number of max3 is:",ma-
x3(num1,num2,num3))
print("the largest number of max2 is:",ma-
x2(num1,num2))
```