

Gul e Hasnain 19B-010-SE Section - A (Lab 04)

```
In [4]: # program 1
# part a
a = 400
b = 500
if a == 400:
    print("The value of a is equal to 400")
if a < b:
    print("The value of a is less than b")
if a > b:
    print("The value of a is greater than b")
if a != b:
    print("The value of a is not equal to b")
if a <= b:
    print("The value of a is less than or equal to b")
if a >= b:
    print("The value of a is grater than and equal to b")
```

The value of a is equal to 400
 The value of a is less than b
 The value of a is not equal to b
 The value of a is less than or equal to b

```
In [3]: # part b
a = 500
b = 400
if a == 400:
    print("The value of a is equal to 400")
if a < b:
    print("The value of a is less than b")
if a > b:
    print("The value of a is greater than b")
if a != b:
    print("The value of a is not equal to b")
if a <= b:
    print("The value of a is less than or equal to b")
if a >= b:
    print("The value of a is grater than and equal to b")
```

The value of a is greater than b
 The value of a is not equal to b
 The value of a is grater than and equal to b

```
In [5]: # program 2
a = 10
b = 5
c = 20
if a > b and c > a:
    print("Both conditions are True")
```

Both conditions are True

```
In [6]: # program 3
a = 105
b = 50
c = 200
if a > b or a > c:
    print("At least one of the conditions are True")
```

At least one of the conditions are True

```
In [22]: # program 4
# Python program to display all the prime numbers within the interval
l_limit = int(input("Enter lower limit range: "))
u_limit = int(input("Enter upper limit range: "))
print("prime numbers between", l_limit, "and", u_limit, "are: ")
for number in range(l_limit,u_limit + 1):
    if number > 1:
        for i in range(2,number):
            if(number % i) == 0:
                break
        else:
            print(number)
```

```
Enter lower limit range: 1
Enter upper limit range: 10
prime numbers between 1 and 10 are:
2
3
5
7
```

```
In [9]: # program 5
initial_value = eval(input("Enter the initial value for the range: "))
final_value = eval(input("Enter the final value for the range: "))
numbers = range(initial_value,final_value)
Sum = 0
for value in numbers:
    sum = sum + value
print("the sum is", sum)
```

```
Enter the initial value for the range: 1
Enter the final value for the range: 6
the sum is 15
```

```
In [11]: # program 6
row_num = int(input("Input the numbers of rows: "))
col_num = int(input("Input the numbers of columns: "))
multi_list = [[0 for col in range(col_num)] for row in range(row_num)]

for row in range(row_num):
    for col in range(col_num):
        multi_list[row][col] = row * col

print(multi_list)
```

```
Input the numbers of rows: 2
Input the numbers of columns: 3
[[0, 0, 0], [0, 1, 2]]
```

```
In [13]: # program 7
datalist = [300, 12.65, 5+6j, True, 'faisal', (5, -7), [8, 52], {"color" : 'blue', "color" : 'red'}]
for item in datalist:
    print("Type of", item, "is", type(item))
```

```
Type of 300 is <class 'int'>
Type of 12.65 is <class 'float'>
Type of (5+6j) is <class 'complex'>
Type of True is <class 'bool'>
Type of faisal is <class 'str'>
Type of (5, -7) is <class 'tuple'>
Type of [8, 52] is <class 'list'>
Type of {'color': 'red'} is <class 'dict'>
```

```
In [15]: # program 8
print("\t\t\t ASCII Character")

for i in range(0, 256):
    print(i, "=", chr(i), end = "\t") # end="/t" is used to place a tab after
    the displayed string instead of a new line.
print("\n")
```

ASCII Character											
0 =	1 =	2 =	3 =	4 =	5 =	6 =	7 =	8 =	9 =		
10 =	14 = ☁	15 = ☀	16 = +	17 = ◀	18 = ↑	19 = !!	20 = ¶	21 = ⊥	22 =		
T	23 = †	24 = ↑	25 = †	26 = →	27 = ←	28 = ⊂	29 = ↵	30 = ▲	31 =		
▼	32 =	33 = !	34 = "	35 = #	36 = \$	37 = %	38 = &	39 = '	40 =		
(41 =)	42 = *	43 = +	44 = ,	45 = -	46 = .	47 = /	48 = 0	49 =		
1	50 = 2	51 = 3	52 = 4	53 = 5	54 = 6	55 = 7	56 = 8	57 = 9	58 =		
:	59 = ;	60 = <	61 = =	62 = >	63 = ?	64 = @	65 = A	66 = B	67 =		
C	68 = D	69 = E	70 = F	71 = G	72 = H	73 = I	74 = J	75 = K	76 =		
L	77 = M	78 = N	79 = O	80 = P	81 = Q	82 = R	83 = S	84 = T	85 =		
U	86 = V	87 = W	88 = X	89 = Y	90 = Z	91 = [92 = \	93 =]	94 =		
^	95 = _	96 = `	97 = a	98 = b	99 = c	100 = d	101 = e	102 = f	103 =		
g	104 = h	105 = i	106 = j	107 = k	108 = l	109 = m	110 = n	111 = o	112 =		
p	113 = q	114 = r	115 = s	116 = t	117 = u	118 = v	119 = w	120 = x	121 =		
y	122 = z	123 = {	124 =	125 = }	126 = ~	127 =	128 =	129 =	130 =		
,	131 = f	132 = „	133 = ...	134 = †	135 = ‡	136 = ^	137 = %o	138 = Š	139 =		
<	140 = ©		141 =	142 =	143 =	144 =	145 = ‘	146 = ’	147 =		
“	148 = ”	149 =	150 = -	151 = —		152 = ~	153 = ™		154 =		
š	155 = ›	156 = œ	157 =	158 =	159 = Ÿ	160 =	161 = ¡	162 = ¢	163 =		
£	164 = ¤	165 = ¥	166 = ¦	167 = §	168 = “	169 = ®	170 = ª	171 = «	172 =		
¬	173 =	174 = ®	175 = ¯	176 = °	177 = ±	178 = ²	179 = ³	180 = ´	181 =		
μ	182 = ¶	183 = ·	184 = ,	185 = ª	186 = º	187 = »	188 = º	189 = º	190 =		
%	191 = ¸	192 = À	193 = Á	194 = Â	195 = Ã	196 = Ä	197 = Å	198 = Æ	199 =		
ç	200 = È	201 = É	202 = Ê	203 = Ë	204 = Ì	205 = Í	206 = Î	207 = Ï	208 =		
đ	209 = Ñ	210 = Ò	211 = Ó	212 = Ô	213 = Õ	214 = Ö	215 = ×	216 = Ø	217 =		
Ù	218 = Ú	219 = Û	220 = Ü	221 = Ý	222 = þ	223 = ß	224 = à	225 = á	226 =		
â	227 = ã	228 = ä	229 = å	230 = æ	231 = ç	232 = è	233 = é	234 = ê	235 =		
ë	236 = ì	237 = í	238 = î	239 = ï	240 = ð	241 = ñ	242 = ò	243 = ó	244 =		
ô	245 = õ	246 = ö	247 = ÷	248 = ø	249 = ù	250 = ú	251 = û	252 = ü	253 =		
ý	254 = þ	255 = ÿ									

```
In [16]: # program 9
print("python program to convert decimal number into binary, octa and hexa-decimal number system")

for i in range(0, 17):
    print("The decimal value of", i, "is: ", "in binary is: ",bin(i), "in octal is: ",oct(i),
          "and in hexa-decimal is: ",hex(i))
print("That's the end of the program with range from 1 to 16")
```

python program to convert decimal number into binary, octa and hexa-decimal number system

The decimal value of 0 is: in binary is: 0b0 in octal is: 0o0 and in hexa-decimal is: 0x0

The decimal value of 1 is: in binary is: 0b1 in octal is: 0o1 and in hexa-decimal is: 0x1

The decimal value of 2 is: in binary is: 0b10 in octal is: 0o2 and in hexa-decimal is: 0x2

The decimal value of 3 is: in binary is: 0b11 in octal is: 0o3 and in hexa-decimal is: 0x3

The decimal value of 4 is: in binary is: 0b100 in octal is: 0o4 and in hexa-decimal is: 0x4

The decimal value of 5 is: in binary is: 0b101 in octal is: 0o5 and in hexa-decimal is: 0x5

The decimal value of 6 is: in binary is: 0b110 in octal is: 0o6 and in hexa-decimal is: 0x6

The decimal value of 7 is: in binary is: 0b111 in octal is: 0o7 and in hexa-decimal is: 0x7

The decimal value of 8 is: in binary is: 0b1000 in octal is: 0o10 and in hexa-decimal is: 0x8

The decimal value of 9 is: in binary is: 0b1001 in octal is: 0o11 and in hexa-decimal is: 0x9

The decimal value of 10 is: in binary is: 0b1010 in octal is: 0o12 and in hexa-decimal is: 0xa

The decimal value of 11 is: in binary is: 0b1011 in octal is: 0o13 and in hexa-decimal is: 0xb

The decimal value of 12 is: in binary is: 0b1100 in octal is: 0o14 and in hexa-decimal is: 0xc

The decimal value of 13 is: in binary is: 0b1101 in octal is: 0o15 and in hexa-decimal is: 0xd

The decimal value of 14 is: in binary is: 0b1110 in octal is: 0o16 and in hexa-decimal is: 0xe

The decimal value of 15 is: in binary is: 0b1111 in octal is: 0o17 and in hexa-decimal is: 0xf

The decimal value of 16 is: in binary is: 0b10000 in octal is: 0o20 and in hexa-decimal is: 0x10

That's the end of the program with range from 1 to 16

```
In [19]: # program 10
n = 5
for i in range(n):
    for j in range(i):
        print('* ', end = "")
    print("")
```



```
for i in range(n,0,-1):
    for j in range(i):
        print('* ', end = "")
    print("")
```

*
* *
* * *
* * * *
* * * * *
* * * *
* *
*

```
In [21]: # program 11
print("This program will count total number of vowels from user defined sentence")
string = input("Enter your string: ")
vowels = 0
for i in string:
    if (i == 'a' or i == 'e' or i == 'i' or i == 'u' or i == 'o' or i == 'A' or i == 'E' or i == 'I' or i == 'O' or i == 'U'):
        vowels = vowels + 1
print("Number of vowels are: ")
print(vowels)
```

```
This program will count total number of vowels from user defined sentence  
Enter your string: Gul e hasnain  
Number of vowels are:  
5
```