LAB03-01_Conditions (ASSIGN03)

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Practice with Conditions in Python

1 Start with some simple exercises

Write an if statement to determine if an album had a rating greater than 8. Test it using the rating for the album "Back in Black" that had a rating of 8.5. If the statement is true print "This album is Amazing!"

[1]:
```
BInB_rating=8.5
album_rating=BInB_rating
if album_rating>8:
   print("this album is amazing!")
```

```
this album is amazing!
```

Write an if-else statement that performs the following. If the rating is larger then eight print "this album is amazing". If the rating is less than or equal to 8 print "this album is ok".

[2]:
```
print("Enter your album rating:")
album_rating = input()
if album_rating > "8":
   print("This album is amazing")
else:
    print("this album is OK")
```

```
Enter your album rating:
 9
This album is amazing
```

Write an if statement to determine if an album came out before 1980 or in the years: 1991 or 1993. If the condition is true print out the year the album came out.

[3]:
```
album_year = int(input('ENTER THE YEAR:'))
if (album_year < 1980):
      print(album_year)
elif (album_year == 1991) or (album_year == 1993):
       print(album_year)
```

```
ENTER THE YEAR: 1994
```

2 Now go through the following 'solved' examples before getting more exercises

[4]:
```
# Obtain a number from the user
# and check to see if it is non-negative
num = int(input('Enter a number: '))
if num < 0:
    print(num, 'is negative')

print('-' * 25)
```

```
Enter a number:  -3

-3 is negative
-------------------------
```

[5]:
```
# Now check to see if it is positive
num = int(input('Enter another number: '))
if num > 0:
    print(num, 'is positive')
    print(num, 'squared is ', num * num)

print('Bye')

print('-' * 25)
```

```
Enter another number:  45

45 is positive
45 squared is  2025
Bye
-------------------------
```

Now check to see if the number is negative or zero /positive

num = int(input('Enter yet another number:')) if num < 0: print('Its negative') else: print('Its not negative')

print('-' * 25)

[4]:
```
# Illustrate multiple elif example with an else
savings = float(input("Enter how much you have in savings: "))
if savings == 0:
```

```
    print("Sorry no savings")
elif savings < 500:
    print('Well done')
elif savings < 1000:
    print('Thats a tidy sum')
elif savings < 10000:
    print('Welcome Sir!')
else:
    print('Thank you')

print('-' * 25)
```

```
Enter how much you have in savings:  5
Well done
-------------------------
```

[5]:
```
# Nested if statement example
snowing = True
temp = -1
if temp < 0:
    print('It is freezing')
    if snowing:
        print('Put on boots')
    print('Time for Hot Chocolate')
print('Bye')
```

```
It is freezing
Put on boots
Time for Hot Chocolate
Bye
```

[6]:
```
# Using an and in the condition
print('-' * 25)
age = 15
status = None
if age > 12 and age < 20:
    status = 'teenager'
else:
    status = 'not teenager'
print(status)
```

```
-------------------------
teenager
```

[7]:
```
# Short hand form if expression examples
status = ('teenager' if age > 12 and age < 20 else 'not teenager')
print(status)
```

```
num = int(input('Enter a simple number: '))
result = (-1 if num < 0 else 1)
print('Result is ', result)
```

```
teenager
```

```
Enter a simple number:  14
```

```
Result is  1
```

More exercises

The more you practice, the earlier you'll master more complicated tasks!

3 Exercise 1:

Write a small program to test if an integer is positive or negative. Your program should: 1. Prompt the user to input a number 2. Check whether the number is positive or negative 3. Optionally add a test to see if the number is Zero You can assume that the user will enter a valid integer number (no need to catch errors at this stage).

[1]:
```
num = int(input('ENTER YOUR NUMBER'))
status = None
if num == 0:
    print('number is 0!!')
else:
    status = ('positive' if num>0 else 'negative')
    print(status)
```

```
ENTER YOUR NUMBER 34
```

```
positive
```

4 Exercise 2:

Write a program that takes a number as input from the user and determines if the number is odd or even. You can assume that the user will enter a valid integer number (no need to catch errors at this stage).

[2]:
```
number = int(input('ENTER YOUR NUMBER :'))
if (number % 2) == 0 :
    print('this number is ODD!!')
else:
    print('this number is EVEN!!')
```

```
ENTER YOUR NUMBER : 44
```

```
this number is ODD!!
```

5 Exercise 3:

Write a program that converts kilomenters to miles. Include some tests in your program: 1. verify that the user has entered a positive distance 2. verify that the input is a number, progressing only for numbers

To check that the input string contains only digits, use the method isnumeric(). For example: '42'.isnumeric() returns True if the string contains only numbers.

[3]:
```
kilometers = int(input('enter your distance in kilometer :'))
if (kilometers > 0):
    if str(kilometers).isnumeric() == True:
        print(kilometers, ' KM is equal to  :',kilometers* 0.621371, ' miles')
    else:
        print('your input is not numeric!!')
```

```
enter your distance in kilometer : 35
```

```
35  KM is equal to  : 21.747985  miles
```

[ ]:
```

```