

# Python Programming for Kids

## Homework for Week 4

Due 10/12/2019

## Conditions

### 1

Write a program, check if the value of the variable "num" is positive or negative or zero and display an appropriate message:

- When variable num is a positive number, "Positive number" is printed.
- If num is equal to 0, "Zero" is printed.
- If num is a negative number, "Negative number" is printed

```
In [3]: num = 15 # <-- Test your program by changing this value to 0 and -15

print(num, end=': ')

# Write your program below to test the value of num
```

```
15: Posutive number
```

### 2

Write a Python program to check if a user input integer is odd or even. A integer is even if it is divided by 2, it yields no remainder. If remainder is 1, it is odd number.

- for even number x, the output should be: x is Even
- for odd number x, the output should be: x is Odd

How to get the remainder of a division?

Hint: [Python Arithmetic Operators \(https://www.programiz.com/python-programming/operators#arithmetic\\_operators\)](https://www.programiz.com/python-programming/operators#arithmetic_operators)

```
In [3]: ▶ num = int(input("input a number and press enter key: "))  
# Write your program below, check if the value of variable 'num' is Odd or Ev
```

```
type a number and press enter key: 20  
20 is Even
```

### 3

Make a wage calculator for LeX-Mart:

A company called LeX-Mart pay their workers weekly.

- If a worker has worked no more than 40 hours a week, the normal payment rate is \$8.0/hour.
- If a worker has worked over 40 hours a week, that means the worker has worked overtime. The overtime salary is at 1.47 times the normal rate. (for example, if you have worked 41 hours in a week, you worked overtime for one hour. The salary for **every overtime hour** is at 1.47 times the normal rate)

Your program should output like the following (for example, if you worked 41 hours in a week):

You worked 41.0 hours in a week, you have earned \$331.76.

```
In [9]: ▶ totalHours = int(input("Enter total hours you worked in a week: "))  
# Write you program at below
```

```
Enter total hours you worked in a week: 41  
You worked 41.0 hours in a week, you have earned $331.76.
```

### 4

A leap year is exactly divisible by 4 except for century years (years ending with 00). The century year is a leap year only if it is perfectly divisible by 400. For example,

- 2017 is not a leap year
- 1900 is a not leap year
- 2012 is a leap year
- 2000 is a leap year

Write a program to check if a given year is leap year or not. Your program should output in the following format:

3000 is not a leap year

2017 is not a leap year

2012 is a leap year

Hint: nested if conditions have to be used:

```
if a year is a multiple of 4
    if a year is a multiple of 100
        if a year is multiple of 400, then this is a leap year
    else this is a leap year
else this year is not a leap year
```

In [13]:  `year = int(input("Enter a year: "))`  
*# Write your program below to check if the value of the variable 'year' is le*

```
Enter a year: 1880
1880 is a leap year
```

## For Loops

### 5

Print all of the odd numbers between 1881 to 1842 in descending order. Print one number at each row.

```
1881
1879
1877
...
```

### 6

Print all of the odd numbers between 80 to 101. Print as the following format:

each odd number in a separate line, with a sequence number in front of it. For example:

```
1) 81
2) 83
3) 85
```

Hints:

- you need use a variable as counter, we learned how to program a counter in the class
- to print in the required format, check this link:  
[https://www.learnpython.org/en/String\\_Formatting](https://www.learnpython.org/en/String_Formatting)  
[https://www.learnpython.org/en/String\\_Formatting](https://www.learnpython.org/en/String_Formatting) Something like: `print('%d) %d'% (variable1, variable2))`

## 7

For a number n (input by the user), Write a Python program to print out the following triangle pattern. n is the maximum number of \* in a row

Example: n = 5

```
*
**
***
****
*****
****
***
**
*
```

Hints:

- 1) use two for-loops, one for the upper triangle, one for the lower triangle
- 2) use string multiplication to print multiple '', *for example*: " \* 4 is '\*\*\*\*'

## While Loops

## 8

A bag of Hi-Chew costs 372.49 japanese Yen. Write a program to let the user input the number of bags of Hi-Chew and calculate the price. This program should keep running until the user input 'q' and press enter key. The example output of your program is as the following:

```
Welcome to the super Hi-Chew Calculator!
Please input the number of bags: 10
The total price is 3724.90
Please input the number of bags: 27
The total price is 10057.23
Please input the number of bags: q
Good Bye!
```

Make your program to output exactly like the above example. Do your best if you can't.