

```
In [3]: # Conditional Steps
x = 5
if x < 10:
    print("Smaller")
if x > 20:
    print("Bigger")
print("Finish")
```

Smaller
Finish

```
In [7]: # Comparison Operators
# < Less than
# <= Less than or Equal to
# == Equal to
# >= Greater than or Equal to
# > Greater than
# != Not equal
x = 5
if x == 5 :
    print('Equals 5')
if x > 4 :
    print('Greater than 4')
if x >= 5 :
    print('Greater than or Equals 5')
if x < 6 :
    print('Less than 6')
if x <= 5 :
    print('Less than or Equals 5')
if x != 6 :
    print('Not equal 6')
```

Equals 5
Greater than 4
Greater than or Equals 5
Less than 6
Less than or Equals 5
Not equal 6

```
In [11]: x = 5
print('Before 5')
if x == 5 :
    print('Is 5')
    print('Is Still 5')
    print('Third 5')
print('Afterwards 5')
print('Before 6')
if x == 6 :
    print('Is 6')
    print('Is Still 6')
    print('Third 6')
print('Afterwards 6')
```

Before 5
Is 5
Is Still 5
Third 5
Afterwards 5
Before 6
Afterwards 6

```
In [15]: # Indentation
x = 5
if x > 2 :
    print('Bigger than 2')
    print('Still bigger')
print('Done with 2')
for i in range(5) :
    print(i)
    if i > 2 :
        print('Bigger than 2')
    print('Done with i', i)
print('All Done')
```

Bigger than 2
Still bigger
Done with 2
0
Done with i 0
1
Done with i 1
2
Done with i 2
3
Bigger than 2
Done with i 3
4
Bigger than 2
Done with i 4
All Done

```
In [17]: # Nested Decisions
x = 42
if x > 1 :
    print('More than one')
    if x < 100 :
        print('Less than 100')
print('All done')
```

More than one
Less than 100
All done

```
In [19]: # Two-way Decisions: we must choose one or the other path but not both.
# else:
x = 4
if x > 2 :
    print('Bigger')
else :
    print('Smaller')
```

```
print('All done')
```

Bigger
All done

```
In [23]: # Multi-way
# if:
x = 0
if x < 2 :
    print('small')
elif x < 10 :
    print('Medium')
else :
    print('LARGE')
print('All done')
```

small
All done

```
In [25]: # Multi-way
# elif
x = 5
if x < 2 :
    print('small')
elif x < 10 :
    print('Medium')
else :
    print('LARGE')
print('All done')
```

Medium
All done

```
In [27]: # Multi-way
# else
x = 20
if x < 2 :
    print('small')
elif x < 10 :
    print('Medium')
else :
    print('LARGE')
print('All done')
```

LARGE
All done

```
In [29]: # No Else
x = 5
if x < 2 :
    print('Small')
elif x < 10 :
    print('Medium')
print('All done')
```

Medium
All done

```
In [31]: x = 5
if x < 2 :
    print('Small')
elif x < 10 :
    print('Medium')
elif x < 20 :
    print('Big')
elif x < 40 :
    print('Large')
elif x < 100:
    print('Huge')
else :
    print('Ginormous')
```

Medium

```
In [33]: # Which will never print regardless of the value for x?
x = 9
if x < 2 :
    print('Below 2')
elif x >= 2 :
    print('Two or more')
else :
    print('Something else')

if x < 2 :
    print('Below 2')
elif x < 20 :
    print('Below 20')
elif x < 10 :
    print('Below 10') # it will never be printed because the of the above 'below 20
else :
    print('Something else')
```

Two or more

Below 20

```
In [37]: # The try / except Structure
# • You surround a dangerous section of code with try and except
# • If the code in the try works - the except is skipped
# • If the code in the try fails - it jumps to the except section
astr = 'Hello Bob'
try:
    istr = int(astr)
except:
    istr = -1
print('First', istr)
astr = '123'
try:
    istr = int(astr)
except:
    istr = -1
print('Second', istr)
```

First -1

Second 123

```
In [39]: astr = 'Bob'
try:
    print('Hello')
    istr = int(astr)
    print('There')
except:
    istr = -1
print('Done', istr)
```

Hello
Done -1

```
In [41]: # Sample
rawstr = input('Enter a number:')
try:
    ival = int(rawstr)
except:
    ival = -1

if ival > 0 :
    print('Nice work')
else:
    print('Not a number')
```

Not a number

```
In [67]: # Rewrite your pay computation to give the employee 1.5 times the hourly rate for h
hours = input("Enter Hours: ")
rate = input("Enter rate: ")
hr = int(hours)
rt = int(rate)

if hr > 40:
    overtime = hr - 40
    pay = ( 40 * rt ) + ( overtime * rt * 1.5 )
else:
    pay = hr * rt
print("Pay: ", pay)
```

Pay: 475.0

```
In [77]: # Rewrite your pay program using try and except so that your program handles non-nu
hours = input("Enter Hours: ")
rate = input("Enter rate: ")
try:
    hr = int(hours)
except:
    print("Error, Please Enter Numeric Input!")
try:
    rt = int(rate)
except:
    print("Error, Please Enter Numeric Input!")

if hr > 40:
    overtime = hr - 40
    pay = ( 40 * rt ) + ( overtime * rt * 1.5 )
```

```
else:  
    pay = hr * rt  
    print("Pay: ", pay)
```

Error, Please Enter Numeric Input!
Pay: 200

In []: