BRANCHING AND ITERATION

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Comments

- Comments allow you to document what your program does.
- This becomes even more important as your programs get larger and more complicated.
- Comments are inserted using the hash symbol: #
  - The rest of the line after the # is simply ignored by the interpreter — so, you can put any text in the comments.

The simplest form of branching is conditional execution:

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Indentation is important!

Multiple branches can be implemented with chained conditionals:

```
if condition:
    # This is executed if 'condition' is True
elif other_condition:
    # Otherwise, this is executed
    # (if 'other_condition' is True)
else:
    # This is executed otherwise
```

Example

```
number = float(input("Enter a number: "))
if number > 0:
    print("It is positive.")
# Nothing happens otherwise
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number = float(input("Enter a number: "))
if number > 0:
    print("It is positive.")
else:
    print("It is not positive.")
```

Example

```
if pints > 2:
    print("You cannot drive a car!")
    if pints > 6:
        print("Call a cab!")
    else:
        print("Ride your bicycle!")
elif pints > 0:
    print("Drive very cautiously!")
else:
    print("It is ok to drive!")
```

```
while condition:
    # Keep doing this while 'condition' is True
```

Example

```
a = 0
while a < 10:
    a = a + 1
    print(a)
```

```
for x in iterable:
    # Do something with x as it
    # goes (iterates) over iterable
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Example

```
string = "Hello" # We want to iterate over this
for ch in string:
    print(ch)
```

Example

```
for x in range(0, 5):
    print(x * x)
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Example

```
for x in range(4, 12, 2):
    for power in range(2, 6):
        print(str(x) + " to the power " +
          str(power) + " is " + str(x ** power))
```