Introduction to Computer Programming

1.3 Operators - Demos

Example

Write a program, using comparison and logical operators, that answers a question based on the current time of day:

> **Is it lunchtime?**
>   True if current time is between lunch start and end times.
>   False if not.

In [2]:

```python
# Variables
t = 12.00   # Current time
ls = 13.00  # Time Lunch starts
le = 14.00  # Time Lunch ends


# Find lunchtime True / False value using start and end times
lunchtime = ls <= t and t < le
print(lunchtime)
```

False

Are there any other ways we could write the expression for lunchtime using the operators we have studied so far?

In [3]:

```python
lunchtime = ls <= t < le
print("Is it lunchtime?", lunchtime)
```

Is it lunchtime? False

Example

Write a program that:

1. creates 3 variables, a , b and c , with numerical values
2. outputs a statement that tells the user if the values include *any* negative numbers.

In [7]:

```
a, b, c = 1, -1, 7

answer = a<0 or b<0 or c<0

print('negatives?', answer)
```

negatives? True

Example

Write a program that answers *two* questions based on the current time of day:

> **Is it lunchtime?**
>   True if time between lunch start and end times.
>   False if not.

> **Is it time for work?**
>   True if time between work start and end times **and not** lunchtime.
>   False if not.

In [11]:

```
t = 8.30
ls = 13.00
le = 14.00
ws = 9.00
we = 17.00

lunch = ls <= t < le

work = ws <= t < we and not lunch

print(lunch)
print(work)
```

False
False

Are there any other ways we could have written the expressions for `lunch` or `work` ?

In [12]:

```
work = ws <= t < ls or le <= t < we

print(work)
```

False

In [13]:

```python
work = not t < ws and not t > we and not lunch

print(work)
```

False

In [ ]: