Introduction to Computer Programming
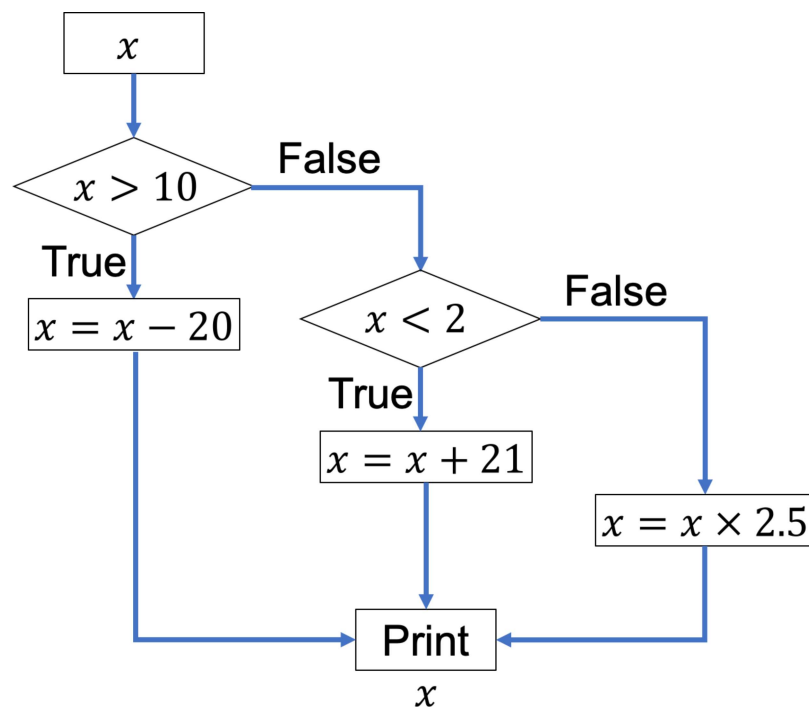
2.1 Control Flow

University of BRISTOL

In-class Demos

Example 1:

Write a program to modify the initial value of the variable x and print the new value, as shown in the flow diagram.

```python
# Initial value of x
x = 5

# x is greater than 10
if x > 10:
    x = x-20

# x is less than 2
elif x < 2:
    x = x + 21

# x is in range 2 to 10, inclusive
else:
    x = x * 2.5

# Final value of x
print(x)
```

12.5

Let's remind ourselves of an example from last week.

> **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.

Let's build on the example from last week by including control statements.

Example 2:
Write a program that tells the user what acitivty to do based on the time of day.

- eat lunch if it is lunchtime
- do work if it is time for work
- go home if it is before or after work

In [17]:

```python
# --------- Program from last week ---------
# Variables
t = 9.00            # current time
Ls = 13.00          # lunch starts
Le = 14.00          # lunch ends
Ws = 8.00           # work starts
We = 17.00          # work ends


lunchtime = Ls <= t < Le                    # lunchtime

work_time = Ws <= t < We and not lunchtime # work_time
# -------------------------------------------

if lunchtime:
    print("Eat lunch")

elif work_time:
    print("Do work")

else:
    print("Go home")
```

Do work