CS-A113 Basics in Programming Y1

4th Lecture
05.10.2021

Reach us on Slack!

Very fast answers by our Teacher-team AND your peers!

"Office-hours": We usually answer if we find time, some of the TAs are very generous with their time and sometimes answer also to odd times BUT:

You cannot expect answers during nights, weekends or an hour before deadlines

Note: DMs can be quite intrusive, do not DM the TAs with questions related to the lecture. That is what the #channels are for.

Aalto Code of Conduct and Plagiarism

Honesty is an academic core value

→ Write your own code!
(We do Plagiarism checks)

Grades and Points

Maximal 10 % deduction of points for (really) bad style
Maximal 50% deduction if the task is not solved as described.

Grading Schema % of points: Total points will be available in Week 43 (no lecture-week)
 0% - <50% : 0
50% - <60% : 1
60% - <70% : 2
70% - < 80% : 3
80% - < 90% : 4
90% - 100% : 5

Abby tells you about functions ☺
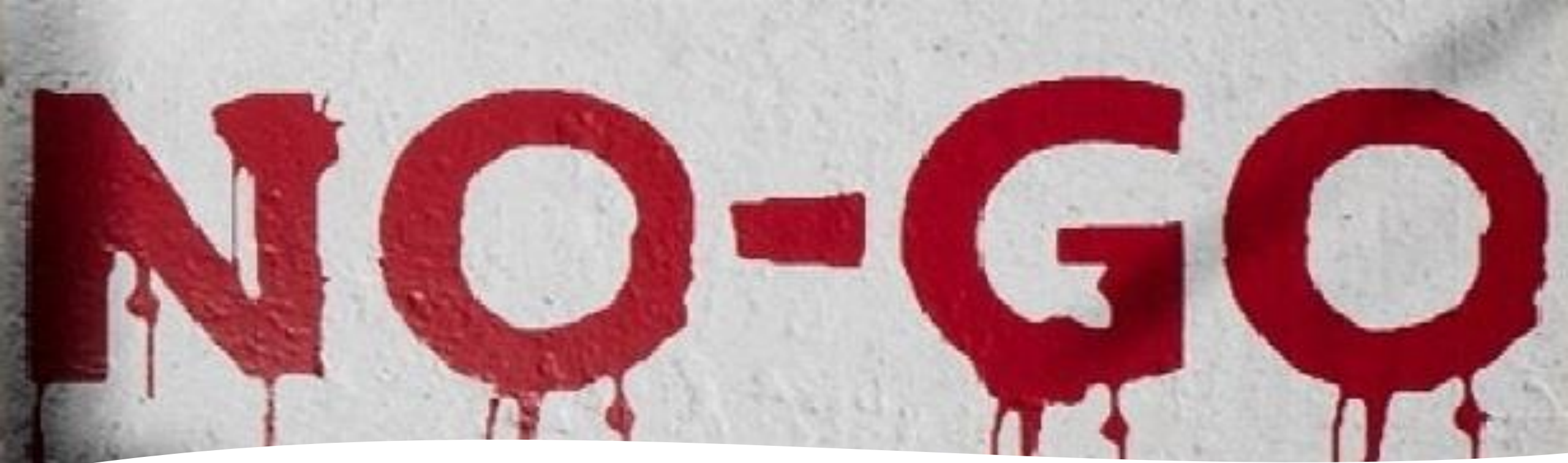
Order Matters!

```
def prog1:
    x = 10
    x += 5
    print x
```

```
def prog2:
    x = 10
    print(x)
    x += 5
```

```
def prog3:
    x = 10
    while (x < 20):
        x += 3
        print(x)
```

```
def prog4:
    x = 10
    while (x < 20):
        print(x)
        x += 3
```

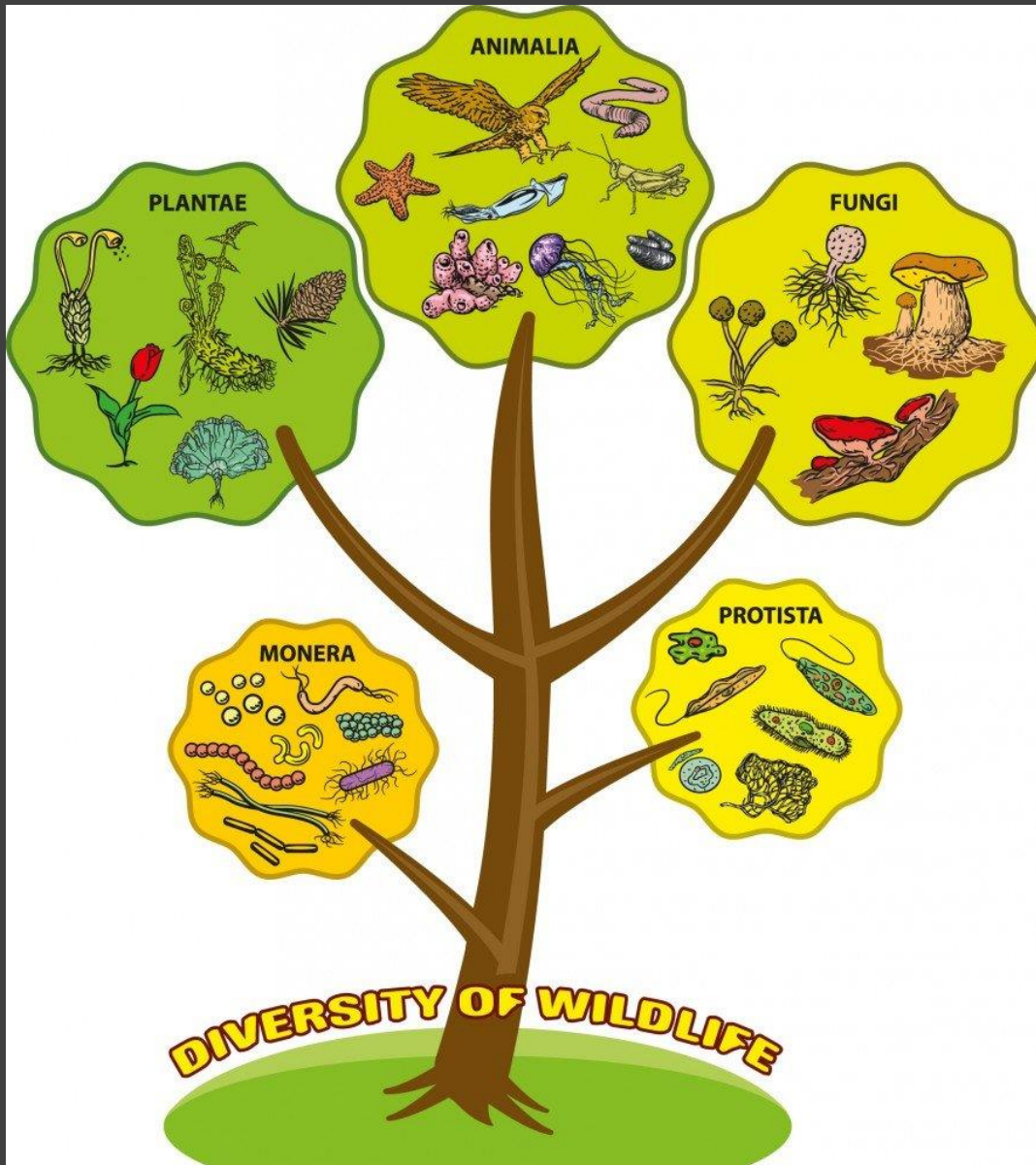## Absolut No-go (Unless Stated Otherwise)

break – continue

quit()

exit()

sys.exit()

os._exit()

It is in our tasks a solid sign for someone not understanding their program logic or pure laziness (the bad kind).

Diversity of Wildlife

Common Challenges: if – elif - else

Case distinctions: E.g. classifying objects

```
if (X isAnimal):
        if (X hasWings):
                        if (X isPenguin):
                                        print("it cannot fly but swim")
                        elif (X isEmu):
                                        print("it cannot fly")
                        else:
                                        print("it can fly")
        else:
                        print("it is not a bird")
elif (X isFungi):
        [...]
else:
        print("We don't know this class yet – Maybe it is extraterrestrial
")
```

```
if (smth):

        do(trololo)
else:

        do(trololo2)
```
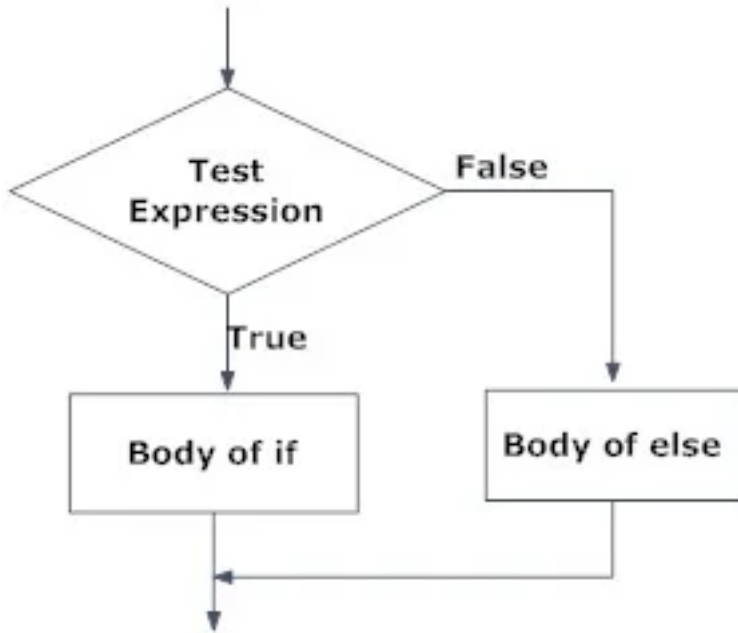

Fig: Operation of if...else statement

```
if (smth):

        do(trololo)
else:

        if(smth2):

                do(trololo2)

        else:

                do(trololo3)
```
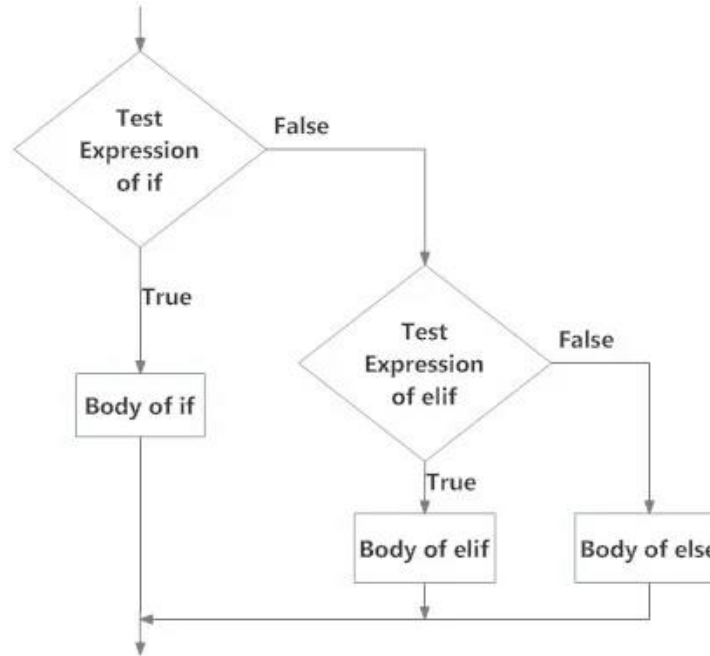

Fig: Operation of if...elif...else statement

```
if (smth):

        do(trololo)
elif(smth2):

        do(trololo2)
else:

        do(trololo3)
```
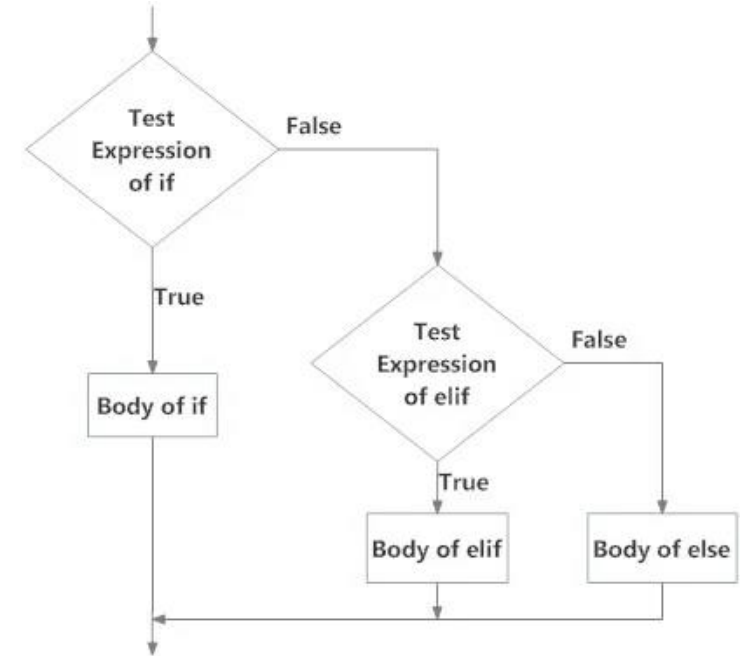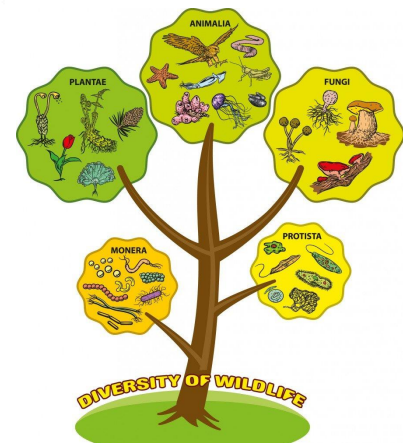

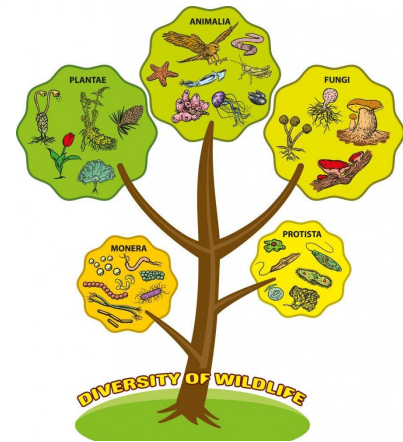Fig: Operation of if...elif...else statement

When are they the same?

They are the same if the conditions are exclusive:

```
if (X isAnimal):
    do...
if (X isPlant):
    do...
if (X isFungi):
    do...
if (X isMonera):
    do...
if (X isProtista):
    do...
```

```
if (X isAnimal):
    do...
elif (X isPlant):
    do...
elif (X isFungi):
    do...
elif (X isMonera):
    do...
elif (X isProtista):
    do...
```

When are they the same?

They are the same if the conditions are exclusive:

```
if (X isAnimal):
        do…
if (X isPlant):
        do…
if (X isFungi):
        do…
if (X isMonera):
        do…
if (X isProtista):
        do…
if ( X not isAnimal and X not isFungi and X not…):
        print("Should not exist")
```

```
if (X isAnimal):
        do…
elif (X isPlant):
        do…
elif (X isFungi):
        do…
elif (X isMonera):
        do…
elif (X isProtista):
        do…
else:
        print("should not exist")
```

While – Else?

```
while (smth):
        do(trololo)
else:
        do(trololo2)
```

```
while (smth):
        do(trololo)

do(trololo2)
```