

Python Programming

Selection 2

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What if I need more conditions?

- Write a program that reads an integer salary then:
- If salary < 1000,
 - print you are poor
- elif salary >= 1000 and < 20000,
 - print good salary
- elif salary >= 20000,
 - print you are rich
- Now, how to command computer to do these if else?
- Good software engineer **tests** well his code. What are good **test cases**?
 - 0, 500, **1000**, **10000**, 200000, 1000000000

The if-elif Chain

```
4 salary = int(input())
5 if salary < 1000:
6     print('You are poor')
7 elif 1000 <= salary < 20000:
8     print('good salary')
9 else:
10    print('you are rich')
11
```

```
▶ ↑ /home/moustafa/
■ ↓ 200
You are poor
```

```
▶ ↑ /home/moustafa/
■ ↓ 5000
good salary
```

```
▶ ↑ /home/moustafa/
■ ↓ 1000000
you are rich
```

- **If condition:**
 - Go to body ONLY if cond true
- If previous condition is not correct,
 - move to next
- **elif cond:**
 - Again true, get it in
- If previous false move to next
- **else:**
 - Get in if nothing previous worked

Practice: How many digits?

- Read an integer and print if it has 1, 2, 3, 4 or 5+ digits
- Input \Rightarrow Output
 - 556 \Rightarrow 3 digits
 - 1234567 \Rightarrow 5+ digits
 - 5 \Rightarrow 1 digit
- Stop the video
 - Think in **simple** program
 - Try to code
 - Tip: Always challenge yourself first

```
3 num = int(input())
4
5 if num < 10:
6     print("1 digit")
7 elif num < 100:
8     print("2 digits")
9 elif num < 1000:
10    print("3 digits")
11 elif num < 10000:
12    print("4 digits")
13 else:
14    print("5+ digits")
15
```



A terminal window with a dark background. On the left, there is a vertical toolbar with a green play button, a grey square, and up/down arrow icons. The terminal text shows the file path `/home/mou`, the input `5623` in green, and the output `4 digits`.

```
/home/mou
5623
4 digits
```

Nested if conditions

```
3 num = int(input())
4
5 if 100 <= num <= 200:
6     print("Let's go deeper")
7
8     if num % 2 == 0:
9         print("ooh, even number")
10
11         if num == 150:
12             print('150 is lucky number!')
13
14     else:
15         print("Bye Mr. Odd")
16 else:
17     print("Have a good day")
```

- The code block for an if-condition can be very complex
- For Example another if-condition inside it
- We call it them nested if-condition
- We can have many nested if-condition
 - If...if...if.. If.
 - But it is bad from readability perspective
 - Keep your code simple and elegant
- Observe the indentation

Summary: 3 styles

- If condition:
 - body
- Body can be
 - Single line
 - Multi-line
 - Complex logic, e.g. more ifs
- Remember the indentation

- If condition:
 - body
- elif condition:
 - body
- elif condition:
 - body
- elif condition:
 - body
- elif condition:
 - body

- If condition:
 - body
- elif condition:
 - body
- elif condition:
 - body
- elif condition:
 - body
- else:
 - body

“Acquire knowledge and impart it to the people.”

“Seek knowledge from the Cradle to the Grave.”