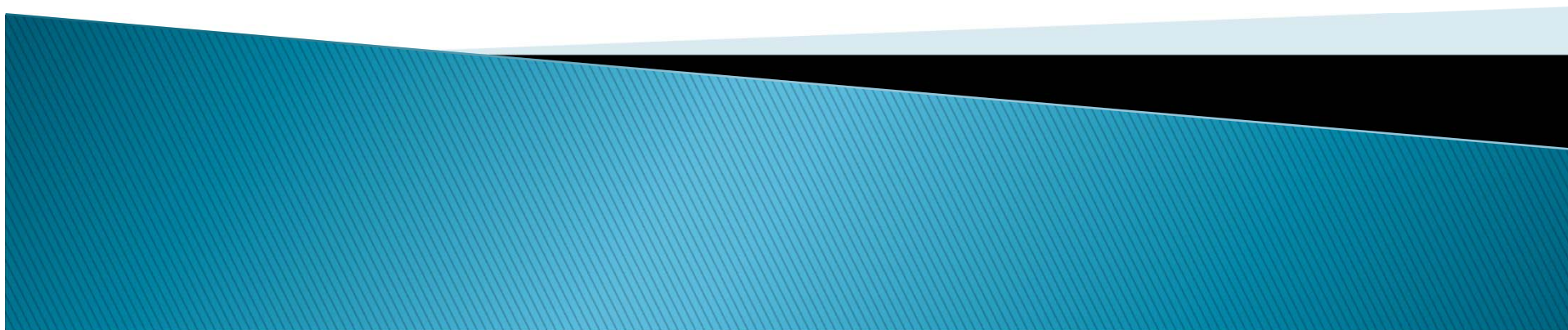


# 第五讲：if语句



# if语句

- ▶ if语句用于在程序中根据不同情况做不同处理

```
1 cars = ['audi', 'bmw', 'subaru', 'toyota']
2
3 for car in cars:
4     if car == 'bmw':
5         print(car.upper())
6     else:
7         print(car.title())
```

运行结果:

```
Audi
BMW
Subaru
Toyota
```

注意冒号和缩进的使用法

注意判断相等用==

注意if后的条件不像C++需要用()  
括起来

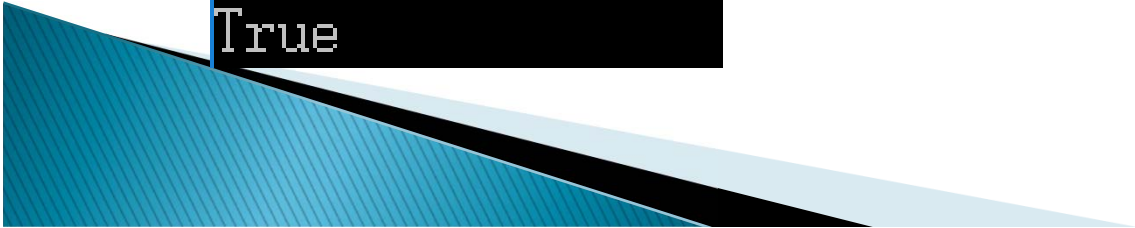
# 布尔变量

- Python的布尔变量有True和False两种取值，注意首字母大写

```
>>> 1 + 2 == 3
True
>>> 5 < 2
False
```

- 可以直接给变量赋布尔值，也可以用print输出布尔变量的值

```
>>> x = (1 < 2)
>>> print(x)
True
```



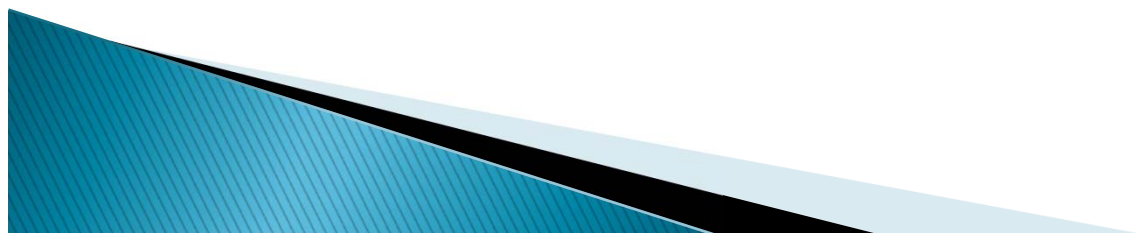
# 字符串比较相等忽略大小写

- ▶ 字符串比较时会考虑大小写

```
>>> 'Tom' == 'tom'  
False
```

- ▶ 如果希望忽略大小写可以用lower方法统一转换为小写再判断

```
>>> 'Tom'.lower() == 'tom'.lower()  
True
```



# 其它关系运算符

- ▶ 和C++一样，Python用!=来表示不等

```
1 answer = 17
2
3 if answer != 42:
4     print("That is not the correct answer. Please try again!")
```

运行结果: That is not the correct answer. Please try again!

- ▶ 和C++一样，Python用<, <=, >, >=来分别表示小于，不大于，大于，不小于:

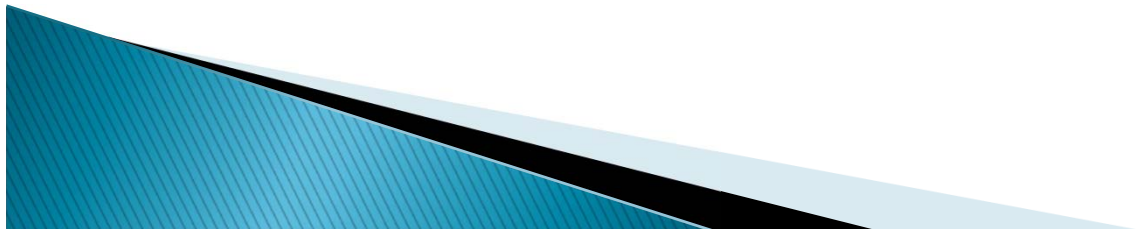
```
>>> 1 < 2
True
>>> 2 <= 2
True
>>> 3 > 4
False
>>> 5 >= 4
True
```

# 与，或，非

- ▶ and表示并且，c1 and c2只有在c1和c2同时成立时才成立

```
>>> x = 20
>>> x >= 10 and x <= 15
False
>>> x >= 10 and x <= 20
True
```

- ▶ or表示或者，c1 or c2只要在c1和c2至少有一个成立就成立
- ▶ not表示并非，not c成立当且仅当c不成立



# 判断特定值是否在列表中

- ▶ `x in list_a`: `x`如果在列表`list_a`中返回`True`, 否则返回`False`
- ▶ `x not in list_a`: `x`如果不在列表`list_a`中返回`True`, 否则返回`False`

```
1 banned_users = ['andrew', 'carolina', 'david']
2 user = 'marie'
3
4 if user not in banned_users:
5     print(user.title() + ", you can post a response if you wish.")
```

运行结果: Marie, you can post a response if you wish.



# If-elif-else结构

- ▶ 当你不止有一种情况要处理时，可以用if-elif-else

```
1 age = 100
2
3 if age < 4:
4     price = 0
5 elif age < 18:
6     price = 5
7 elif age < 65:
8     price = 10
9 else:
10    price = 5
11
12 print("Your admission cost is $" + str(price) + ".")
```

运行结果：

```
Your admission cost is $5.
```





# if-elif-else结构

- ▶ if-elif-else后面也可以没有else

```
1  age = 12
2
3  if age < 4:
4      price = 0
5  elif age < 18:
6      price = 5
7  elif age < 65:
8      price = 10
9  elif age >= 65:
10     price = 5
11
12  print("Your admission cost is $" + str(price) + ".")
```

运行结果:

```
Your admission cost is $5.
```



# 使用if语句处理列表

- ▶ If语句用于列表上，可以实现很多有用的功能

```
1 available_toppings = ['mushrooms', 'olives', 'green peppers',  
2                       'pepperoni', 'pineapple', 'extra cheese']  
3  
4 requested_toppings = ['mushrooms', 'french fries', 'extra cheese']  
5  
6 for requested_topping in requested_toppings:  
7     if requested_topping in available_toppings:  
8         print("Adding " + requested_topping + ".")  
9     else:  
10        print("Sorry, we don't have " + requested_topping + ".")  
11  
12 print("\nFinished making your pizza!")
```

运行结果:

```
Adding mushrooms.  
Sorry, we don't have french fries.  
Adding extra cheese.  
  
Finished making your pizza!
```

# 判断列表是否为空

- ▶ if后面紧跟列表名，可以判断这个列表是否为空

```
1 users = []  
2 if users:  
3     print(users[0])  
4 else:  
5     print("It is empty!")
```

运行结果: `It is empty!`



# 总结

- ▶ if语句，if-else语句，if-elif-else语句
- ▶ 关系运算符
- ▶ 布尔变量和布尔表达式，and, or, not
- ▶ 用in和not in来判断元素是否在列表中
- ▶ 下节课我们将学习Python另一个著名的类型：字典



# 作业

- ▶ 教材中课后的练习，5-1到5-13，选一些写到你的博客上



谢谢！

