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1.1

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1.2 if -

```
age = 18

if age >= 18:
    print("    ")
    print("   ")
else:
    print("    ")
    print("    ")

print("      ")
```

: Python

1.3 if-elif-else

```
score = 85

if score >= 90:
    grade = "A"
    message = "   "
```

```
elif score >= 80:
    grade = "B"
    message = "    "
elif score >= 70:
    grade = "C"
    message = "      "
elif score >= 60:
    grade = "D"
    message = "    "
else:
    grade = "F"
    message = "    "

print(f" : {score},  : {grade}")
```

1.4

==	x == 5
!=	x != 5
<	x < 10
>	x > 10
<=	x <= 10
>=	x >= 10

```
a, b = 10, 5
print(f"{a} > {b}: {a > b}")     # True
print(f"{a} == {b}: {a == b}")   # False
```

1.5

```
age = 25
has_license = True
has_car = False

# AND   -    True
```

```
can_drive = age >= 18 and has_license
print(f"   : {can_drive}")  # True

# OR   -       True
can_travel = has_car or age >= 18
print(f"   : {can_travel}")  # True

# NOT   -
needs_license = not has_license
print(f"   : {needs_license}")  # False

#
can_rent_car = age >= 21 and has_license and not has_car
```

1.6

```
fruits = ["  ", "  ", "   "]
my_fruit = "  "

#
if my_fruit in fruits:
    print(f"{my_fruit}   ")

if "  " not in fruits:
    print("     ")

#
list1 = [1, 2, 3]
list2 = [1, 2, 3]
list3 = list1

print(list1 == list2)  # True
print(list1 is list2)  # False
print(list1 is list3)  # True
```

1.7 for -

```
#
fruits = ["  ", "  ", "   "]
for fruit in fruits:
    print(f"{fruit}   ")

#
for letter in "Python":
    print(letter)

# enumerate      +
for index, fruit in enumerate(fruits):
    print(f"{index + 1}. {fruit}")

#
student = {" ": " ", " ": 20, " ": "CS"}
for key, value in student.items():
    print(f"{key}: {value}")
```

1.8 range() -

```
#  range - 0 4
for i in range(5):
    print(i)  # 0, 1, 2, 3, 4

#
for i in range(1, 6):
    print(i)  # 1, 2, 3, 4, 5

#
for i in range(0, 11, 2):
    print(i)  # 0, 2, 4, 6, 8, 10

#
for i in range(5, 0, -1):
    print(i)  # 5, 4, 3, 2, 1
```

1.9 while -

```
#   while
count = 0
while count < 5:
    print(f"  : {count}")
    count += 1

#
password = ""
while password != "secret":
    password = input("        : ")
    if password != "secret":
        print("           ")

print("    ")
```

1.10

```
# break -
for i in range(10):
    if i == 5:
        print("5    ")
        break
    print(i)

print("  ")

# continue -
for i in range(10):
    if i % 2 == 0:  #
        continue
    print(f" : {i}")

# else
for i in range(3):
    print(i)
else:
    print("       ")
```

1.11

```
#
print("  :")
for i in range(1, 10):
    for j in range(1, 10):
        result = i * j
        print(f"{result:2d}", end=" ")
    print()  #

#
for row in range(5):
    for col in range(row + 1):
        print("*", end="")
    print()
```

1.12 - Python

```
#
squares = []
for x in range(10):
    squares.append(x**2)

#     Pythonic
squares = [x**2 for x in range(10)]
print(squares)  # [0, 1, 4, 9, 16, 25, 36, 49, 64, 81]

#
even_squares = [x**2 for x in range(10) if x % 2 == 0]
print(even_squares)  # [0, 4, 16, 36, 64]

#
words = ["hello", "world", "python", "programming"]
upper_words = [word.upper() for word in words if len(word) > 5]
print(upper_words)  # ['PYTHON', 'PROGRAMMING']
```

1.13

1.14 :

```
#
students = [
    {" ": " ", " ": [85, 92, 78]},
    {" ": " ", " ": [90, 88, 95]},
    {" ": " ", " ": [76, 81, 69]}
]

for student in students:
    scores = student[" "]
    average = sum(scores) / len(scores)

    if average >= 90:
        grade = "A"
    elif average >= 80:
        grade = "B"
    elif average >= 70:
        grade = "C"
    else:
        grade = "D"

    print(f"{student[' ']}:   {average:.1f},   {grade}")
```

1.15 :

```
import random

# 1 100
secret_number = random.randint(1, 100)
attempts = 0
max_attempts = 7

print("1 100       ")

while attempts < max_attempts:
```

```
    try:
        guess = int(input(f"  {attempts + 1}/{max_attempts}: "))
        attempts += 1

        if guess == secret_number:
            print(f"   {attempts}    ")
            break
        elif guess < secret_number:
            print("     ")
        else:
            print("     ")
    except ValueError:
        print("        ")

if attempts == max_attempts:
    print(f"       {secret_number}   ")
```

1.16

1. - Python
2. - and, or, not
3. - for vs while
4. - break continue
5. - Pythonic

1.17

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1.18

1.18.1

: - Python.org - Real Python - Python Tutor

1.19

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