Cheatography

Computer Language - Unit 4 - Selections Cheat Sheet

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Comparison Operators

radius = 4

Python Operator	Name	Example	Result
<	less than	radius < 0	FALSE
<=	less than or equal to	radius <= 0	FALSE
>	greater than	radius > 0	TRUE
>=	greater than or equal to	radius >= 0	TRUE
==	equal to	radius == 0	FALSE
!=	not equal to	radius != 0	TRUE

Generating Random Numbers

```
randint(a, b) # random int between a and b
1 import random
2
3 # Generate random numbers
4
5 number2 = random.randint(0, 9)
6
7 # Prompt the user to enter an answer
8 answer = eval(input("What is "+ + " + "
9 + str(number2) + "? "))
10
11 # Display result
12 print(number1, "+", number2, "=", answer,
13 "is", number1 + number2 == answer)
```

If statements

One-way If statements

> A one-way if statement executes the statements if the condition is true.

Two-Way if-else Statements

> A two-way if-else statement.A two-way if-else statement decides which statements to execute based on whether the condition is true or false.

Nested if and Multi-Way if-elif-else Statements

> One if statement can be placed inside another if statement to form a nested if statement.

Logical Operators

Operator	Description
not	logical negation
and	logical conjunction
or	logical disjunction

Operator Precedence Chart

+, - (Unary plus and minus)
** (Exponentiation)
not
*, /, //, % (Multiplication, division, integer division, and remainder)
+, - (Binary addition and subtraction)
<, <=, >, >= (Comparison)
==, != (Equality)
and
or
=, +=, -=, *=, /=, //=, %= (Assignment operators)

one-way if

```
1 number = eval(input("Enter an integer: "))
2
3 if :
4 print("HiFive")
5
6 if :
7 print("HiEven")
```

two-way if-else

```
1 import random
2
3 # 1. Generate two random single-digit integers
4 number1 = random.randint(0, 9)
5 number2 = random.randint(0, 9)
6
7 # 2. If number1 < number2, swap number1 with number2
8 if number1 < number2:
9 number1, number2 = number2, number1 # Simultaneous
assignment
10
11 # 3. Prompt the student to answer "What is number1
- number2?"
12 answer = eval(input("What is "+ str(number1) + " -
" +
13 str(number2) + "? "))
```

two-way if-else (cont)

```
14
15 # 4. Check the answer and display the result
16 if number1 - number2 == answer:
17 print("You are correct!")
18 else:
19 print("Your answer is wrong.\n", number1, '-',
20 number2, "is", number1 - number2, '.')
```

Nested if and Multi-Way if-elif-else

```
1 year = eval(input("Enter a year: "))
2 zodiacYear = year % 12
3 if zodiacYear == 0:
4 print("monkey")
5 elif zodiacYear == 1:
6 print("rooster")
7 elif zodiacYear == 2:
8 print("lion")
9 elif zodiacYear == 3:
10 print("goat")
11 elif zodiacYear == 4:
12 print("rat")
13 elif zodiacYear == 5:
14 print("ox")
15 elif zodiacYear == 6:
16 print("tiger")
17 elif zodiacYear == 7:
18 print("rabbit")
19 elif zodiacYear == 8:
20 print("dragon")
21 elif zodiacYear == 9:
22 print("snake")
23 elif zodiacYear == 10:
24 print("horse")
25 else:
26 print("sheep")
```

ComputeBMI.py

```
1 # Prompt the user to enter weight in pounds
2 weight = eval(input("Enter weight in pounds: "))
3
4 # Prompt the user to enter height in inches
5 height = eval(input("Enter height in inches: "))
6
7 KILOGRAMS_PER_POUND = 0.45359237 # Constant
8 METERS_PER_INCH = 0.0254 # Constant
9
10 # Compute BMI
11 weightInKilograms = weight * KILOGRAMS_PER_POUND
12 heightInMeters = height * METERS_PER_INCH
13 bmi = weightInKilograms / (heightInMeters *
heightInMeters)
14
15 # Display result
16 print("BMI is", format(bmi, ".2f"))
17 if bmi < 18.5:
18 print("Underweight")
19 elif bmi < 25:
20 print("Normal")
21 elif bmi < 30:
22 print("Overweight")
23 else:
24 print("Obese")
```

LeapYear.py

```
1 year = eval(input("Enter a year: "))
2
3 # Check if the year is a leap year
4 isLeapYear =
5
6
7 # Display the result
8 print(year, "is a leap year?", isLeapYear)
```