National 5 Computing Homework

CPU

Computational Thinking

Topic 3 - String Handling

Name -

Grade -   / 37

Feedback

All programming languages can store and manipulate text using string variables and build in functions.
Some examples of string handling, in the programming language Python are shown below:

Storing Text: productName = "Apple iPad Air 32Gb"

Concatenation: productName = "Apple " + "iPad Air " + "32Gb"
(joining text)   print (productName)

Output from Program
Apple iPad Air 32Gb

Sub-String: comment = "Most Excellent"
(splitting text)   part1 = comment[0:7]
                     print (part1)

Note the above → print (comment[-5:-2])
two lines can   print (comment[:3])
be combined   print (comment[-9:])
like this

Output from Program
Most Ex
lle
Mos
Excellent

Lower Case   quotation = "The answer is Forty Two"
                     smallQuotation = quotation.lower()
                     print (smallQuotation)
Upper Case   print (quotation.upper())

Output from Program
the answer is forty two
THE ANSWER IS FORTY TWO

Length of String   sentence = "I never could get the hang of Thursdays"
                     sentencelength = len(sentence)
                     print(sentencelength)

Output from Program
39

For each of the following problems, think through the code and write down the output from each program.
The problems will get harder and harder.

1. productName = "The Hobbit"
    print (productName)

Output from Program
The Hobbit

(1)

2. footballTeam = "Dunfermline" + " Football " + "Club"
    print (footballTeam)

Output from Program
Dunfermline Football Club

(1)

3. dogBreed = "Labradoodle"
    print (dogBreed + dogBreed)

Output from Program
LabradoodleLabradoodle

(1)

4. dogBreed = "Labradoodle"
    dogAge = "Two"
    print (dogBreed + dogAge)

Output from Program
LabradoodleTwo

(1)

5. dogBreed = "Labradoodle"
    dogAge = "Two"
    print (dogAge + dogBreed)

Output from Program
TwoLabradoodle

(1)

6. bookWeek = "The Colour of Magic"
print (bookWeek[0:1])

Output from Program
T

(1)

7. bookWeek = "The Colour of Magic"
print (bookWeek[:3])

Output from Program
The

(1)

8. bookWeek = "The Colour of Magic"
print (bookWeek[5:11])

Output from Program
Colour of

(1)

9. bookWeek = "The Colour of Magic"
print (bookWeek[-4:])

Output from Program
agic

(1)

10. bookWeek = "The Colour of Magic"
print (bookWeek[5:-10])

Output from Program
olou

(1)

11. firstName = "Walter"
surname = "White"
print (firstName[0:1])
print (surname [:1])

Output from Program
W
W

(1)

12. firstName = "Walter"
surname = "White"
print (firstName[-1:7])
print (surname [-1:])

Output from Program
r
e

(1)

13. firstName = "Walter"
surname = "White"
print (firstName[0:3] + surname [0:3])

Output from Program
WalWhi

(1)

14. filmRelease = "World War Z"
tempFilm = filmRelease.lower()
print (tempFilm)

Output from Program
world war z

(1)

15. filmRelease = "World War Z"
releaseDate = "31st OCT"
tempFilm = filmRelease.upper()
tempDate = releaseDate.lower()
print (tempFilm + " " + tempDate)

Output from Program
WORLD WAR Z 31st oct

(1)

16. word1 = "central"
word2 = "processing"
word3 = "unit"
word4 = word1[0:1].upper()
word5 = word2[0:1].upper()
word6 = word3[0:1].upper()
print (word4 + " = " + word1)
print (word5 + " = " + word2)
print (word6 + " = " + word3)

Output from Program
C = central
P = processing
U = unit

(1)

17. password = "spider man"
passwordLength = len(password)
print (passwordLength)

Output from Program
10

(1)

18. password = "Olympus"
passwordLength = len(password)
print ("Your password is " + passwordLength + " characters long")

Output from Program
Your password is 7 characters long

(1)

19. word = "Sydney"
middleLetter = len(word) / 2
#note that the next line removes any decimal place from the number
middleLetter = int(middleLetter)
print (word[middleLetter-1:middleLetter])

Output from Program
d

(1)

Python has many other functions used to manipulate strings. Here is one more:

Count: #*This returns the number of times text is found in a given string*

advice = "In winter, sensible people stay indoors"
print (advice.count("in"))

Output from Program
2

#Note that the output is 2 because the follow "in"s are found in the advice string:
In w**in**ter, sensible people stay **in**doors
The first "In" has a capital I so isn't counted.

20. The following program uses string handling to create a simple password. Can you work out what the password is?

statement = "When Mr. Bilbo Baggins of Bag End announced"
letter1position = statement.count("a")
letter2position = statement.count("e")
letter3position = statement.count("i")
letter4position = statement.count("o")
letter1 = statement[letter1position-1:letter1position]
letter2 = statement[letter2position-1:letter2position]
letter3 = statement[letter3position-1:letter3position]
letter4 = statement[letter4position-1:letter4position]
password = letter4 + letter2 + letter3 + letter1
print (password)

Output from Program
ehhe

(4)