

Programmering - Test

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Sæt kryds ved *sand* eller *falsk* for hver udtalelse. Det giver +1 point at svare korrekt, -1 point at svare forkert, 0 ikke at svare.

Check/mark either *true* or *false* for each question/statement. +1 point is awarded for a correct answer, -1 point for a wrong answer and 0 points for a wrong answer.

1 Eksempel / example

Forhold dig til følgende udtryk $a = 2 + 2$:

Consider the following statements $a = 2 + 2$:

	Sand	Falsk
	True	False
(1) a=5	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(2) a=4	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(3) a=7	<input type="checkbox"/>	<input type="checkbox"/>

Eksempel-opgaven kan max give 3 point og her giver den 0 point. +1 point for (1), -1 point for (2) og 0 point for (3).

The example-question can maximally award 3 points and here it awards 0 points. +1 point for (1), -1 point for (2) og 0 point for (3).

2 Basic Python

Besvar spørgsmål om følgende kode (Answer questions about the following code):

```
1 # Calculator of averages
2 n = 0
3 s = 0
4 while True:
5     n = n+1
6     userinput = input("Type a number (or 'stop' to stop):")
7     if userinput == 'stop':
8         break
9     x = int(userinput)
10    s = s + x
11    avg = s/n
12    print(f"The average is {avg}")
```

Og følgende eksempel-output (and the following example output):

```
Type a number (or 'stop' to stop):2
Type a number (or 'stop' to stop):3
Type a number (or 'stop' to stop):4
Type a number (or 'stop' to stop):stop
The average is 3.0
```

	Sand True	Falsk False
(4) Variablen <code>userinput</code> er af typen <code>integer</code> (The variable <code>userinput</code> is of type <code>integer</code>)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(5) Variablen <code>n</code> er af typen <code>integer</code> (The variable <code>n</code> is of type <code>integer</code>)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(6) Variablen <code>avg</code> er af typen <code>integer</code> . (The variable <code>avg</code> is of type <code>integer</code>)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(7) Programmet crasher hvis brugeren skriver <code>seks</code> i stedet for et tal. (The program crashes if the user types <code>six</code> instead of a number.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(8) Programmet kan crashes med fejl fra linje 6. (The program can crash with an error from line 6.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(9) Programmet kan crashes med fejl fra linje 9. (The program can crash with an error from line 9.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(10) Hvis brugeren indtaster 3 tal og <code>stop</code> som i eksempl-outputtet, vil linje 11 blive udført 4 gange. (If the user types 3 numbers and <code>stop</code> , as in the example output, then line 11 is executed 4 times).	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(11) Hvis linje 5 ændres til <code>##n = n+1</code> vil programmet altid beregne 0 som gennemsnit. (If line 5 is changed to <code>##n = n+1</code> , then the program will always calculate 0 as average.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(12) Hvis linje 5 ændres til <code>##n = n+1</code> vil programmet crash. (If line 5 is changed to <code>##n = n+1</code> , then the program will crash.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>

3 Pygame

Besvar spørgsmål om følgende kode (Answer questions about the following code):

```
1 import pygame as pg
2 import random
3 screen = pg.display.set_mode((400,400))
4 running = True
5 x = 100
6 y = 300
7 while running:
8     events = pg.event.get()
9     for e in events:
10         if e.type == pg.KEYDOWN:
11             if e.key == pg.K_ESCAPE:
12                 running = False
13
14         x = x - 5
15         if x < 0:
16             x = 500
17
18         screen.fill((255,255,255))
19         pg.draw.circle(screen, (200,0,0), (x, y), 50)
20
21         pg.display.update()
22         time.sleep(0.1)
```

	Sand	Falsk
	True	False
(13) Pygame-spillet har hvid baggrundsfarve (The game has white background color)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(14) Pygame-spillet viser en rød cirkel (The game shows a red circle)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(15) Pygame-spillet viser en blå cirkel (The game shows a blue circle)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(16) Cirklen i spillet bevæger sig fra venstre mod højre hen over skærmen (The circle in the game moves from the left to right across the screen)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(17) Cirklen starter med at være tegnet i nederste venstre hjørne af skærmen (The circle starts out in the lower left corner of the screen)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(18) Der er en eller flere frames hvor cirklen ikke kan ses på skærmen (There is one or more frames where the circle is not visible on screen)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(19) Cirklens position kan ændres ved at trykke på piletasterne på tastaturet (The position of the circle can be changed by pressing the arrow keys on the keyboard)	<input type="checkbox"/>	<input checked="" type="checkbox"/>

4 Lister / lists

Besvar spørgsmål om følgende kode (Answer questions about the following code):

```
1 numbers = [11, 22, 33, 44]
2 print(numbers[0])
3 print(numbers[-1])
4 print(numbers[2])
5 numbers.append(1337)
6 print(len(numbers))
7 for i in range(3):
8     numbers.append(i*10)
9 print(numbers)
```

- | | Sand
True | Falsk
False |
|---|--------------------------|--------------------------|
| (20) Output fra <code>print</code> i linje 2 er 11 (The output from <code>print</code> on line 2 is 11) | <input type="checkbox"/> | <input type="checkbox"/> |
| (21) Output fra <code>print</code> i linje 3 er 44 (The output from <code>print</code> on line 3 is 44) | <input type="checkbox"/> | <input type="checkbox"/> |
| (22) Output fra <code>print</code> i linje 4 er 44 (The output from <code>print</code> on line 4 is 44) | <input type="checkbox"/> | <input type="checkbox"/> |
| (23) Output fra <code>print</code> i linje 6 er 4 (The output from <code>print</code> on line 6 is 4) | <input type="checkbox"/> | <input type="checkbox"/> |
| (24) Output fra <code>print</code> i linje 9 er [11,22,33,44,1337,0,10,20] (The output from <code>print</code> on line 0 is [11,22,33,44,1337,0,10,20]) | <input type="checkbox"/> | <input type="checkbox"/> |
| (25) Output fra <code>print</code> i linje 9 er [11,22,33,44,1337,10,20,30] (The output from <code>print</code> on line 0 is [11,22,33,44,1337,10,20,30]) | <input type="checkbox"/> | <input type="checkbox"/> |