Modul exam PDS - Part 1

HS2024 **08.01.2025**

Specification of the candidates:	
Name and first name:	
Lecturer:	☐ Melillo ☐ Christen ☐ other

Information about the exam:			
Duration of the exam:	30 min		
Scoring:	**Tasks**	**max. points**	**Points scored**
	1: Data types and print formatting	5	
	2: Functions, Namespaces and Scope	7	
	3: Control Structures & Loops	2	
	4: Copies, lambda functions	1.5	
	5: Multiple Choice	1.5	
	Total	17	
	Note		
Tools:	▪ OpenBook (Paperware only!!!) ▪ no mobile phones, smartwatches, laptops, tablets, calculators, etc.		
Lecturers:	Lecturer Andreas Melillo, Ramón Christen		

Note: All (sub-) tasks must be considered independent of each other. Expressions of a particular subquestions never influence the result of subsequent subquestions.

Task 1 Data types and print formatting — 5 Points

Task 1.1 — 2 Point

The following script is given:

```
var1 = [42,28,18]
var2 = 42
var3 = {'hello':'world'}
var4 = "Dear"
```

What data type is `var1`: _____
What data type is `var2`: _____
What data type is `var3`: _____
What data type is `var4`: _____

Task 1.2 — 2 Points

The following script is given:

```
var1 = "about"
var2 = "you"
var3 = "jokes"
```

What does/do the next expression/s print to the console?

```
print("Hello, I am writing an {}.".format("exam"))
```

_____

```
print("What {}?".format(var2))
```

_____

```
print(f"Terrible {var3}?")
```

_____

```
print("{var3} are fun.")
```

_____

Task 1.3 **0.5 Point**

The following script is given:

```
mylist = [elem for elem in range(3)]
```

What does/do the next expression/s print to the console?

```
print(mylist)
```

Task 1.4 **0.5 Point**

The following script is given:

```
variable = {key:value for (key,value) in enumerate(range(1,4))}
```

What does/do the next expression/s print to the console?

```
print(variable)
```

Task 2 Functions, Namespaces and Scope — 7 Points

Task 2.1 — 2 Points

The following script is given:

```
var = 3
def adder(value_one, value_two=2):
    result = value_one + value_two
    return result
res = adder(var)
```

What does/do the next expression/s print to the console?

```
print(var)
```

```
print(res)
```

```
print(adder(5,7))
```

```
print(adder(5))
```

Task 2.2 — 1 Point

The following script is given:

```
var = 5
def g():
    var = 2
    print(var)

def h():
    global var
    var = 1 + var
    print(var)
```

What does/do the next expression/s print to the console?

```
g()
print(var)
```

```
h()
print(var)
```

Task 2.3 **2 Point**

The following script is given:

```
var = 1
class MyClass():
    var = 2
    def __init__(self):
        self.var = 3
obj = MyClass()
```

What does/do the next expression/s print to the console?

```
print(var)
```

```
print(obj.var)
```

```
print(MyClass.var)
```

```
print(var)
```

Task 2.4 **2 Point**

The following script is given:

```
var = 5
def substracter(var, value_two = 8):
    if value_two > var:
        var = 99
        return 0
    else:
        return var - value_two
res = substracter(var)
```

What does/do the next expression/s print to the console?

```
print(res)
```

_____

```
print(substracter(5,7))
```

_____

```
print(substracter(5))
```

_____

```
print(var)
```

_____

Task 3 Control Structures & Loops 2 Points

Task 3.1 0.5 Point

What does/do the next expression/s print to the console?

```
mylist = [1,2,3]
for elem in mylist:
    print(elem)
```

Task 3.2 0.5 Point

What does/do the next expression/s print to the console?

```
limit = 0
while limit < 3:
    print(limit)
    limit = limit + 2
```

Task 3.3 0.5 Point

What does/do the next expression/s print to the console?

```
mylist = [1,2,3,4]
for elem in mylist:
    if elem < 2:
        print("99")
    elif elem < 4:
        print("a")
    else:
        print(elem)
```

Task 3.4 0.5 Point

What does/do the next expression/s print to the console?

```
a = 15
b = 10
c = 5
if (b > a) or (b < c):
    b = b+1
print(b)
```

Task 4 Copies, lambda functions 1.5 Points

Task 4.1 0.5 Point

What does/do the next expression/s print to the console?

```
a = [1,2,3]
b = a
b[0] = 0
print(a)
```

Task 4.2 0.5 Point

What does/do the next expression/s print to the console?

```
a = [1,2,3]
b = a.copy()
b[0] = 0
print(a)
```

Task 4.3 0.5 Point

What does/do the next expression/s print to the console?

```
def multiplier_func(a):
    return lambda x: x * a
m = multiplier_func(3)
print(m(2))
```

Task 5 Multiple Choice 1.5 Points

Which of the following statements about Python lists are correct?

Note: At least one statement must be marked, otherwise you will get 0 points.

```
'''
[ ] Lists are ordered collections of items.
[ ] Elements in a list can be accessed by their index.
[ ] Lists in Python are mutable.
[ ] Lists can contain items of different data types.
[ ] List comprehension is a feature which can be used for creating lists.
[ ] Lists in Python are always sorted.
'''
```