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NPTEL (<https://swayam.gov.in/explorer?ncCode=NPTEL>) » Programming, Data Structures And Algorithms Using Python (course)



Course outline

How does an NPTEL online course work? ()

Week 1 : Introduction ()

Week 1 Quiz ()

Week 2: Basics of Python ()

Week 2 Quiz ()

Week 2 Programming Assignment ()

Week 3: Lists, inductive function

Week 4 Quiz

The due date for submitting this assignment has passed.

Due on 2020-02-26, 23:59 IST.

As per our records you have not submitted this assignment.

All questions carry equal weightage. All Python code is assumed to be executed using Python3. You may submit as many times as you like within the deadline. Your final submission will be graded.

Note:

- If the question asks about a value of type string, remember to enclose your answer in single or double quotes.
- If the question asks about a value of type list, remember to enclose your answer in square brackets and use commas to separate list items.

1) Consider the following Python function.

```
def mystery(l,v):
    if len(l) == 0:
        return (v)
    else:
        return (mystery(l[:-1],l[-1]+v))
```

What does `mystery([22,14,19,65,82,55],1)` return?

No, the answer is incorrect.

Score: 0

Feedback:

Correct answer is 258. The function inductively computes $\text{sum}(l)+v$

Accepted Answers:

definitions,
sorting ()

Week 3
Programming
Assignment
()

Week 4:
Sorting,
Tuples,
Dictionaries,
Passing
Functions,
List
Comprehension
()

Week 4 Quiz
()

☐ Quiz: Week 4
Quiz
(assessment?
name=97)

Week 4
Programming
Assignment
()

Week 5:
Exception
handling,
input/output,
file handling,
string
processing ()

Week 5
Programming
Assignment
()

Week 6:
Backtracking,
scope, data
structures;
stacks,
queues and
heaps ()

(Type: *Regex Match*) \s*258\s*

2.5 points

2) What is the value of triples after the following assignment?

```
triples = [ (x,y,z) for x in range(2,4) for y in range(2,5) for z in range(5,7) if 2*x*y > 3*z ]
```

No, the answer is incorrect.

Score: 0

Feedback:

```
triples = []
for x in range(2,4):      # x = 2,3
    for y in range(2,5):  # y = 2,3,4
        for z in range(5,7): # z = 5,6
            if 2*x*y > 3*z:
                triples.append((x,y,z))
```

Output: [(2, 4, 5), (3, 3, 5), (3, 4, 5), (3, 4, 6)]

Accepted Answers:

(Type: *Regex Match*) \s*\[\s*\(\s*\d\s*,\s*\d\s*,\s*\d\s*\)\s*,\s*\(\s*\d\s*,\s*\d\s*,\s*\d\s*\)\s*,\s*\(\s*\d\s*,\s*\d\s*,\s*\d\s*\)\s*\]

2.5 points

3) Consider the following dictionary.

2.5 points

```
runs = {"Test":{"Rahul":[90,14,35],"Kohli":[3,103,73,42],"Pujara":[53,15,133,8]}, "ODI":{"Sharma":[37,99],"Kohli":[63,47]}}
```

Which of the following statements does **not** generate an error?

- ☐ runs["ODI"]["Rahul"].append([74])
- ☐ runs["ODI"]["Rahul"].extend([74])
- ☐ runs["ODI"]["Rahul"][0]=74
- ☐ runs["ODI"]["Rahul"]= [74]

No, the answer is incorrect.

Score: 0

Feedback:

runs["ODI"]["Rahul"] creates a new key, so one can only assign it a fresh value, not access parts of the value or append to or extend the value.

Accepted Answers:

runs["ODI"]["Rahul"]=[74]

4) Assume that actor has been initialized as an empty dictionary:

2.5 points

```
actor = {}
```

Week 6 Quiz
()

**Week 7:
Classes,
objects and
user defined
datatypes** ()

Week 7 Quiz
()

**Week 8:
Dynamic
programming,
wrap-up** ()

**Week 8
Programming
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Sample** ()

**Online
Programming
Test 1, 01
Dec 2020,
10:00-12:00**
()

**Online
Programming
Test 2, 01
Dec 2020,
20:00-22:00**
()

**Online
Programming
Test 1, 09**

Which of the following generates an error?

- ☐ actor["Star Wars"] = ["Rey","Ridley"]
- ☐ actor["Star Wars, Rey"] = "Ridley"
- ☐ actor[["Star Wars", "Rey"]] = "Ridley"
- ☐ actor(("Star Wars", "Rey")) = "Ridley"

No, the answer is incorrect.

Score: 0

Feedback:

Dictionary keys must be immutable values.

Accepted Answers:

actor[["Star Wars", "Rey"]] = "Ridley"

**Mar 2021,
10:00-12:00
()**

**Online
Programming
Test 2, 09
Mar 2021,
20:00-22:00
()**