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



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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 4 Quiz

The due date for submitting this assignment has passed.

Due on 2022-08-24, 23:59 IST.

Score: 10/10=100%

Assignment submitted on 2022-08-24, 13:18 IST

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):
    if l == []:
        return(1)
    else:
        return(mystery(l[1:])+l[:1])
```

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

[55, 82, 65, 19, 14, 22]

Yes, the answer is correct.

Score: 2.5

Feedback:


Elements are moved from the beginning of the list to the end, so the list gets reversed.

Week 3:
Lists,
inductive
function
definitions,
sorting ()

Week 3
Programming
Assignment
()

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

Week 4 Quiz
()

 **Quiz: Week 4**
Quiz
(assessment?
name=126)

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,

Accepted Answers:

(Type: Regex Match) `[]*[[]*55[]*,[]*82[]*,[]*65[]*,[]*19[]*,[]*14[]*,[]*22[]*[]*`

2.5 points

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

```
pairs = [ (x,y) for x in range(4,1,-1) for y in range(5,1,-1) if (x+y)%3 == 0 ]
```

`[(4, 5), (4, 2), (3, 3), (2, 4)]`

Yes, the answer is correct.
Score: 2.5

Feedback:

All pairs (i,j) with $i \in \{4,3,2\}$, $j \in \{5,4,3,2\}$ such that $i + j$ is a multiple of 3,

Accepted Answers:

(Type: Regex Match) `[]*[[]*\([]*4[]*,[]*5[]*\)[]*,[]*\([]*4[]*,[]*2[]*\)[]*,[]*\([]*3[]*,[]*3[]*\)[]*,[]*\([]*2[]*,[]*4[]*\)[]*[]*`

2.5 points

3) Consider the following dictionary.

2.5 points

```
wickets = {"Tests":{"Bumrah":[3,5,2,3],"Shami":[4,4,1,0],"Ashwin":[2,1,7,4]},"ODI":{"Bumrah":[2,0],"Shami":[1,2]}}
```

Which of the following statements does not generate an error?

- ☐ `wickets["ODI"]["Ashwin"][0:] = [4,4]`
- ☐ `wickets["ODI"]["Ashwin"].extend([4,4])`
- ☒ `wickets["ODI"]["Ashwin"] = [4,4]`
- ☐ `wickets["ODI"]["Ashwin"] = wickets["ODI"]["Ashwin"] + [4,4]`

Yes, the answer is correct.
Score: 2.5

Feedback:

Direct assignment to a new key adds a value. All other updates result in KeyError.

Accepted Answers:

`wickets["ODI"]["Ashwin"] = [4,4]`

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

2.5 points

```
hundreds = {}
```

Which of the following generates an error?

- ☐ `hundreds["Tendulkar, international"] = 100`
- ☐ `hundreds["Tendulkar"] = {"international":100}`
- ☐ `hundreds[("Tendulkar","international")] = 100`
- ☒ `hundreds[["Tendulkar","international"]] = 100`

Yes, the answer is correct.
Score: 2.5

Feedback:

Dictionary keys must be immutable values.

Accepted Answers:

**queues and
heaps ()**

**Week 6 Quiz
()**

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

**Week 7 Quiz
()**

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

**Week 8
Programming
Assignment
()**

**Text
Transcripts ()**

Books ()

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```
hundreds[["Tendulkar", "international"]] = 100
```