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

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Unit 15 - Week 6 Quiz

Course
outline

How to access
the portal

Week 1:
Introduction

Week 1 Quiz

Week 2: Basics
of Python

Week 2 Quiz

Week 2
Programming
Assignment

Week 3: Lists,
inductive
function

Week 6 Quiz

The due date for submitting this assignment has passed.

Due on 2019-09-11, 23:59 IST.

Assignment submitted on 2019-09-04, 22:49
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) Suppose u and v both denote sets in Python. Under what condition can we guarantee that $u - (u - v) == v$? **2.5 points**

- ☐ The sets u and v should be disjoint.
- ☒ The set v should be a subset of the set u .
- ☐ The set u should be a subset of the set v .

definitions, sorting

Week 3 Programming Assignment

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

Week 4 Quiz

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

Week 6 Quiz

- ☒ Quiz : Week 6
Quiz
(assessment?
name=96)

Week 7: Classes, objects and user defined datatypes

- ☐ This is true for any u and v .

Yes, the answer is correct.

Score: 2.5

Feedback:

From u you take away all elements that are not in v and you are left with $u \cap v$. Since $u \cap v = v$, we have v is a subset of u .

Accepted Answers:

The set v should be a subset of the set u .

2) Suppose u and v both denote sets in Python. Under what condition can we guarantee that $u|v == u^v$?

2.5 points

- ☒ The sets u and v should be disjoint.
☐ The set u should be a subset of the set v .
☐ The set v should be a subset of the set u .
☐ This is true for any u and v .

Yes, the answer is correct.

Score: 2.5

Feedback:

u^v has all elements that are in exactly one of u or v . This is the same as $u|v - u \cap v$. Since $u^v = u|v$, we have $u \cap v$ is empty, so u and v are disjoint.

Accepted Answers:

The sets u and v should be disjoint.

3) Suppose we insert 97 into the max heap [98,67,89,38,42,54,89,17,25]. What is the resulting heap?

[98,97,89,38,67,54,89,17,25]

Yes, the answer is correct.

Score: 2.5

Accepted Answers:

(Type: Regex Match) [][[]*98[]*,[]*97[]*,[]*89[]*,[]*38[]*,[]*67[]*,[]*54[]*,[]*89[]*,[]*17[]*,[]*25[]*,[]*42[]*][]**

2.5 points

4) Suppose we we apply delete_max() twice to the heap [100,97,93,38,67,54,93,17,25,42]. What is the resulting heap?

[93,67,93,38,42,54,25,17,42]

Yes, the answer is correct.

Score: 2.5

Accepted Answers:

*(Type: Regex Match) [[]*93[]*,[]*67[]*,[]*93[]*,[]*38[]*,[]*42[]*,[]*54[]*,[]*25[]*,[]*17[]*][]**

2.5 points

Week 7 Quiz

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

**Week 8
Programming
Assignment**

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**Online
Programming
Test - Sample**

**Online
Programming
Test 1, 26 Sep
2019, 09:30-
11:30**