CS:1210 Practice Problem Set 8

Complete by Tuesday, March 24th

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1. This problem is on generating lists. Evaluate the following expressions.

   (a) `list(range(10))`

   (b) `list(range(10, 50, 5))`

   (c) `list(range(10, 50, 5))[:3]`

   (d) `list(range(10, 50, 5))[2::2]`

   (e) `list(range(10, 100, 7))[3:10:3]`

   (f) `list(range(10, 7))`

   (g) `list(range(10, 10))`

   (h) `"copyright"[:4]`

   (i) `"copyright"[5::2]`

   (j) `"mathematics"[::-1]`

   (k) `list(range(10))*2`

   (l) `list(range(5))*2`

   (m) `[list(range(5))]*2`

2. Suppose that the list `L` equals `[100, ["hello", "bye"], 1000, [[1, 2], [2, 3], [3, 4]], 1000, 900.6]`. Evaluate the following expressions.

   (a) `L[3:4]`

   (b) `L[3:4][0]`

   (c) `L[3:4][0][:1]`

   (d) `L[3:4][0][:1][0]`

   (e) `L[3:4][0][:1][0][:1]`

   (f) `L[3:4][0][:1][0][:1][0]`

   (g) `L[1::2]`

   (h) `L[1::2][0]`

   (i) `L[1::2][0][0]`

   (j) `L[1::2][0][0][::-1]`

3. Suppose that L is assigned `list(range(1, 10, 2))*2`. Write down the value of `L` after each of the following Python statements is executed. Assume the same value of `L` (the one given above) prior to each statement execution.

   (a) `L[1:3] = [10]`

   (b) `del L[1:5:2]`

   (c) `L.remove(9)`

   (d) `L[1:5:2] = ["ok", "bye"]`

   (e) `L[:5] = list(range(2))`

4. Evaluate the following expresssions.

   (a) `(list(range(10))*3).count(1)`

   (b) `(list(range(10))*3).index(7)`

   (c) `(list(range(10))*3)[5:].count(4)`

   (d) `(list(range(10))*3)[5:].count(7)`

   (e) `(list(range(10))*3)[5:].index(7)`

   (f) `(list(range(10))*3)[1::2].index(2)`

   (g) `(list(range(10))*3)[1::2].index(3)`

5. Evaluate the following expressions.

   (a) `max(list(range(6)) + list(range(6)[::-1]))`

   (b) `sum(list(range(6)) + list(range(6)[::-1]))`

   (c) `len(list(range(6)) + list(range(6)[::-1]))`

   (d) `range(6).index(max(list(range(6)) + list(range(6)[::-1])))`

   (e) `(list(range(6)) + list(range(6)[::-1])).count(5)`

   (f) `(list(range(6)) + list(range(6)[::-1])).index(5)`

6. Evaluate these expressions.

   (a) `" San Francisco".startswith("San")`

   (b) `" San Francisco".strip().startswith("San")`

   (c) `" San Francisco ".rstrip().startswith("San")`

   (d) `" San Francisco ".strip().startswith("san")`

   (e) `" San Francisco ".lower().strip().startswith("san")`

   (f) `" The future of technical communication is the world wide web.  --- Leslie Lamport".split()`

   (g) `" The future of technical communication is the world wide web.  --- Leslie Lamport".split()[:4]`

   (h) `" The future of technical communication is the world wide web.  --- Leslie Lamport".split()[1:6:2]`

   (i) `" San Francisco ".split(",")`

   (j) `"all,is,well,,that,ends,,,well".split(",")`

   (k) `" ".join("all,is,well,,that,ends,,,well".split(","))`
