X





Quiz 1, Mon 25 Oct 2021

# PDSP Quiz 1

**The due date for submitting this assignment has passed.**

**Due on 2021-10-25, 14:20 IST.**

**Score:** 10/10=100%

## Assignment submitted on 2021-10-25, 14:12 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.

1) Consider the following function definition. ***2.5 points***

```
def factors(n):
  for i in range(2,n):
    if n%i == 0:
      flist.append(i)
  return(len(flist))
```

Which of the following is correct

- `factors(7)` returns `0` and `factors(8)` returns `2`
- `factors(7)` returns `0` and `factors(8)` generates an error
- `factors(7)` generates an error and `factors(8)` returns `2`
- Both `factors(7)` and `factors(8)` generate errors

**due Wed 24 Nov 2021**

**PDSP Assignment 4, due Fri 17 Dec 2021**

**Quiz 3, Thu 16 Dec 2021**

**PDSP Quiz 4, Thu 23 Dec 2021**

**PDSP Assignment 5, due Fri 31 Dec 2021**

Yes, the answer is correct.
Score: 2.5

Feedback:
*Since `flist` is not initialized, either `flist.append()` or `len(flist)` will generate an error.*

Accepted Answers:
*Both `factors(7)` and `factors(8)` generate errors*

2) Consider the following dictionary. ***2.5 points***

```
wickets = {"Tests":{"Jasprit":[3,5,4,3], "Ishant":[2,4,1,5], "Bhuvi":[2,0,3,6]}, "ODIs":{"Jasprit":[2], "Bhuvi":[3]}}
```

Which of the following statements does not generate an error?

- `wickets["ODIs"]["Ishant"].extend([2])`
- `wickets["ODIs"]["Ishant"] = [2]`
- `wickets["ODIs"]["Ishant"].append(2)`
- `wickets["ODIs"]["Ishant"][0:] = [2]`

Yes, the answer is correct.
Score: 2.5

Feedback:
*Only legitimate operation is to create a fresh list.*

Accepted Answers:
*`wickets["ODIs"]["Ishant"] = [2]`*

3) Assume that goals has been initialized as an empty dictionary: ***2.5 points***

```
goals = {}
```

Which of the following generates an error?

- `goals[("Pele","World Cup")] = 12`
- `goals["Pele, World Cup"] = 12`
- `goals["Pele"] = ["World Cup",12]`
- `goals[["Pele","World Cup"]] = 12`

Yes, the answer is correct.
Score: 2.5

Feedback:
*Dictionary key cannot be a mutable value.*

Accepted Answers:
*`goals[["Pele","World Cup"]] = 12`*

4) In the code fragment below, `start` and `end` are integer values and `square(x)` is a function that returns `True` if `x` is a perfect square and `False` otherwise. ***2.5 points***

```
(i,j,k) = (0,0,0)
for m in range(start,end):
  if square(m):
    i = i - 1
    # Statement 1
  else:
    j = j + 1
    # Statement 2
```

We wish to maintain the invariant `k == i - j` after each iteration of the `for` loop. What should we insert at Statement 1 and Statement 2?

- Statement 1: `k = k + 1` and Statement 2: `k = k + 1`
- Statement 1: `k = k + 1` and Statement 2: `k = k - 1`
- Statement 1: `k = k - 1` and Statement 2: `k = k - 1`
- Statement 1: `k = k - 1` and Statement 2: `k = k + 1`

Yes, the answer is correct.
Score: 2.5

Feedback:
*`k` should track `i` and `-j`, so follow the update for `i` and do the opposite for `j`*

Accepted Answers:
*Statement 1: `k = k - 1` and Statement 2: `k = k - 1`*