



[CS 11] Prac 11a – Bird Plane

Problem Statement

Is it a bird? Is it a plane?

Given a snapshot of the sky, count the birds, and count the planes.

A bird looks like this:

```
# #  
# # #
```

[Copy](#)

A plane looks like this:

```
#  
###  
# # #  
#
```

[Copy](#)

Birds will never be rotated, while planes can be rotated some multiple of 90 degrees.

Task Details

Your task is to implement a function called `count_birds_and_planes`. This function has one positional argument, a `tuple` of r `str`s, each of which has length c . Each character of each string is either a space character or `#`.

The function must return a pair of `int`s. The first one is the number of birds, and the second one is the number of planes.

Restrictions

Note that some names are banned. Here are a few of them: `input`, `type`. This is not an exhaustive list. (If you accidentally use a variable name that turns out to be banned, please rename it.)

The following names are now allowed: `map`, `filter`, `super`.

The following imports are now allowed:

- `deque` and `defaultdict` from `collections`
- `dropwhile`, `tee`, `count`, `islice`, `chain`, `takewhile`, `starmap` and `zip_longest` from `itertools`.
- `cache`, `lru_cache`, `total_ordering`, `partial`, `reduce` and `wraps` from `functools`.
- `choice`, `shuffle`, `sample`, `uniform`, `randint` and `randrange` from `random`.
- `Fraction` from `fractions`.
- `dataclass` from `dataclasses`.
- `contextmanager` from `contextlib`.
- `Enum`, `auto` from `enum`.

(Read the docs to learn what they do!)

Anonymous functions are now allowed.

Inner functions are allowed.

Classes, dataclasses and enums are allowed.

For this problem in particular:

- The source code limit is 3000.

Example Calls

Example 1 Function Call

```
count_birds_and_planes((
```

[Copy](#)

```
    ' # #',  
    '# # #',  
    '      # #',  
    ' #     # # #',  
    ' # # #   #',  
    ' ###   #',  
    ' #   #####',  
    '      #',  
    ' # #',  
    ' # # #',  
    ' # #',  
    '# # #',  
)
```

Example 1 Return Value

```
(4, 2)
```

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Constraints

- The function `count_birds_and_planes` will be called at most 10 times.
- $1 \leq r, c \leq 60$
- The snapshot only contains birds and planes, and nothing else.
- No two bird/plane figures will touch, even at corners.

Scoring

- You get 150 ❤ points if you solve all test cases.

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Clarifications

[Report an issue](#)

No clarifications have been made at this time.