

CS118 Programming Assignment

Lost Value

Now that we've gotten the hang of printing values, let's try reading some values from the user.

We want to make a program that works with variables that emulate the “real world” - in this case, airplanes. For what we are concerned, an airplane has five attributes:

- Tail number (a string up to 7 characters);
- age in years (an integer);
- cost per hour to own (a floating point value);
- the number of hours the plane should have been available (an integer).
- a percentage of time it was actually operational (a floating point value);

In business concerns, “fixed costs” are incurred whether or not the capital equipment is in use – it is especially painful to consider the money being spent with no opportunity to make it up or justify it because the equipment is being repaired. We will refer to this as “lost value”.

Using Python's `raw_input()` function, ask the user to provide values for five variables, one for each of the attributes specified above. Name these variables (respective to the attributes): `tail_number`, `age`, `cost_per_hour`, `op_percent`, and `possible`. The `op_percent` value from the user will be percentage – e.g. 3.5, not 0.035. You may assume that the user will follow your directions and therefore you do not have to verify that they gave the proper type of value. The user should not enter the percent sign (%) - your program needs the *numbers* to compute, not the percent sign.

The “lost value” is the fixed costs that were lost because the plane was not operational. Find the amount of time when the plane was not operational (this is calculated as: `possible * (100 - op_percent) / 100 ... why?`) and multiply by the cost per hour, storing the result in a variable named `lost_value`.

Report the data like the following table. Be sure to left-justify both columns:

Plane ID:	AA3456
Age:	13 years
Cost per hour:	\$45.32
Hours to be available:	1636
Operational:	89.3%
Lost Value:	\$7933.36

Extra Credit (10%): (Only available if you get 100% on the base program)

If the lost value is less than \$1000.00, highlight this by placing three stars on the same line but after the lost value:

Plane ID:	AA3456
Age:	13 years
Cost per hour:	\$45.32
Hours to be available:	1636
Operational:	99.3%
Lost Value:	\$519.00 ***

Example run (including Extra Credit):

```
>>>
Please provide a tail number (up to 7 characters): AA1345
How old is this airplane (years): 13
Cost per hour to operate: 99.23
How many hours should the plane have been available? 1342
What percentage of the time is it operational? 99.8

Plane ID:           AA1345
Age:                13 years
Cost per hour:      $ 99.23
Hours to be available 1342
Operational:        99.8%
Lost Value:         $ 266.33 ***
>>>
```