

CAPS Muddy Cards for Sessions 01 and 02

ESP v1.22

Marshall Galbraith

January 2023

1. Q. Is it possible to request the list of inputs (and their descriptions) programmatically through the pyCAPS API? *AIM inputs
A. All Sequences have keys, values, and items methods you can use to iterate with.
2. Q. If you are editing in vi and are not aware, using tab does not actually meet the python requirement for indentation. It is 4 spaces = python tab. May help to avoid confusion for someone if they are not familiar or not using an editor.
A. Python allows you to use any number or type of white spaces for indentation, but you must be consistent within a body.
3. Q. What is the *= doing?
A. This performs multiplication in place. There are also +=, -=, /= operators.

```
a = 2
a = a*2 # a == 4
a *= 2 # a == 8
```

4. Q. Does the writeParameters() write only Design Parameters, or does it also include Configuration Parameters?
A. It will write both.
5. Q. How to edit/remove/unlock a phase?
A. Use the **phaseUtil** commandline tool.
6. Q. Is it possible to access the derivatives of ESP DESPMTR via pyCAPS?
A. Yes, this is covered in session04.
7. Q. Why when calling things in CAPS, there are empty () next to the call, like view()
A. Some languages, e.g., Matlab can call functions without (). With Python the () are used to indicate the call. Without () you can reference the function it self.

```
def my_sum(a=1,b=2):
    return a+b

three = my_sum()
print(three) #Prints 3

# Alias the function
alias_sum = my_sum

four = alias_sum(2,2)
print(four) # Prints 4
```

8. Q. Can the ":" grouping syntax go more than 2 layers deep? That is, does "wing:chord:root" becoming wing.chord.root in python?
A. Yes.