ENCS3130 Final Linux Lab Python -

Time : Thursday , 01/02/2024 , 11:0AM -12:0PM

You are given the command and its output. You need to go in loop to get each root_commands based on output . Each command output is shown in the sequence example shown below. Our goal to generate the root_commands list for given **base command**, which is "**show system**".

Example for base command : "**show system**"

(final result you will get based on shown output) :

root_connmand = ["show system", "show system brief", "show system student","show system brief 20","show system pap2"]

20, pap2 are random values extracted from a given value as discussed below.

Output of each command you ran can have one or all the following outputs as shown in figure 1 :

[Enter]	==>	add to the root_command
<paramter>	==>	Followed by text. you map the parameter and add it to the expendable command
<arg>	==>	(expected values) . you extract the values and add to expandable commands
text	==>	with description you add to expandable commands

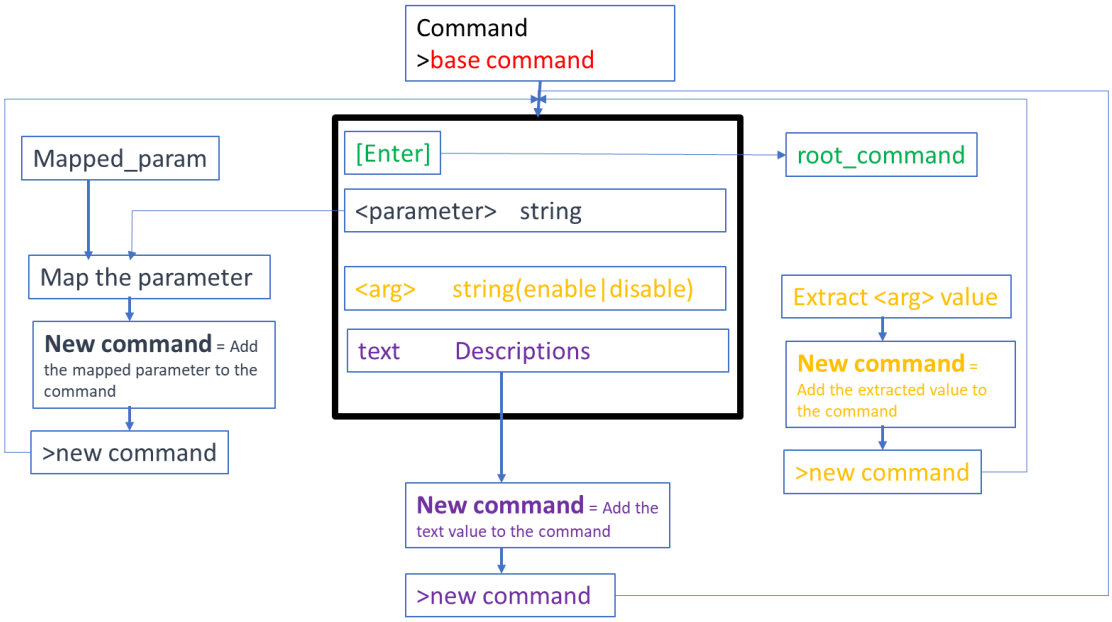


Figure 1 – Top level flow

Once done you loop through the **expandable commands** until you reach output with [Enter]

Hint: you need to use dictionary, lists, parse data and nested python loops

Example below shows the steps and output for each command you are given:

Given **Mapping dictionary**

```
map_param = {"<user-id>" : "student", }
```

Command output

```
> show system
output string:
"""
    [Enter]
    brief                   View to filter the data
    <user-id>               Name of the user (user-name)
    <arg>                   (enum:chap,pap,login | string)
"""
```

When generate expandable command where it :

1- Will replace the parameter for example <user-id> with "student" from the mapping dictionary
2- Will replace the argument with a random value based on whether it is a string or integer.
   Example <arg> (enum:chap,pap,login | string). **Choose pap or login or chap randomly**
   Example <arg> (between 5-60). **Choose one number in between** randomly
3- If [Enter] not listed in output don't put command in root command list.

First Run

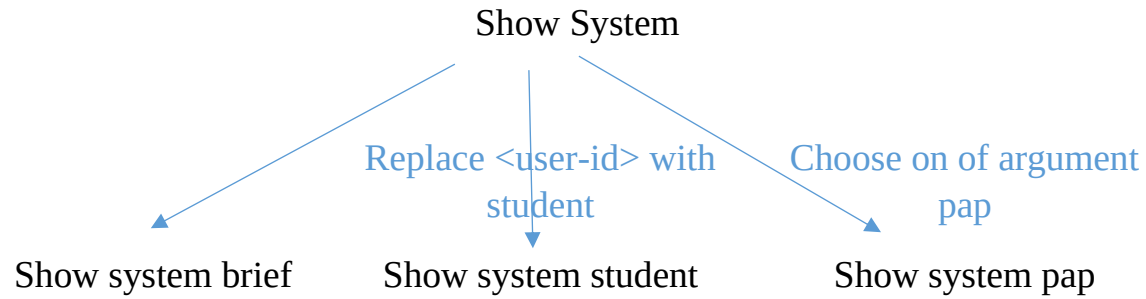
Start from root command

```
> show system
output string:
"""
    [Enter]
    brief                   View to filter the data
    <user-id>               Name of the user (user-name)
    <arg>                   (enum:chap,pap,login | string)
"""
```

[Enter]	Add commad to root_command
Brief	Use brief
<user-id>	Use dictionary to map user-id In this case student
<arg>	Choose one of arguments like pap and add to expandable commands

root_connmand = ["show system"]

expandable_commands = ["show system brief", "show system student", "show system pap"]



Now iterate in expandable command:

Show system brief

```
>show system brief
output string:

"""
    [Enter]
    <arg>                    (integer:5 - 60)"""
```

[Enter]	Add commad to root_command
<arg>	Choose one of arguments like 20 and add to expandable commands

After update

root_connmand = ["show system", "show system brief"]
expandable_commands = ["show system student", "show system pap", "show system brief 20"]

Show system student

```
>nv show system aaa user student ?
output string:"""
        [Enter] """
```

[Enter]	Add commad to root_command

After Update

root_connmand = ["show system", "show system brief", "show system student"]

expandable_commands = ["show system pap", "show system brief 20"]

Show system pap

```
>show system pap
output string :"""
    pap2        Name of the pap2 """
```

<arg>	Choose one of arguments like 20 and add to expandable commands

Note: No [Enter] mean don't add "show system pap" command tp root_command

root_connmand = ["show system", "show system brief", "show system student"] # note no change

expandable_commands = ["show system brief 20","show system pap2"]

Show system brief 20

```
>show system brief 20
output string """
        [Enter] """
```

[Enter]	Add commad to root_command

After update

expandable_commands = ["show system pap2"]
root_connmand = ["show system", "show system brief", "show system student","show system brief 20"]

Show system pap2

```
>show system pap2
"""
        [Enter]
"""
```

[Enter]	Add commad to root_command

After update

expandable_commands = []
root_connmand = ["show system", "show system brief", "show system student","show system brief 20","show system pap2"]

End when Expandable commands No items.