

The screenshot shows a JupyterLab interface with a Python console. The console output is as follows:

```
[7]: x= "hello"
[8]: x
[8]: 'hello'
[9]: print(x)
hello
[10]: num = 12
name = "Sam"
[11]: print("My number is: {one}, and my name is: {two}".format(one=
Input In [11]
print("My number is: {one}, and my name is: {two}".format(one=
SyntaxError: Invalid syntax
[12]: print("My number is: {one}, and my name is: {two}".format(one=))
Input In [12]
print("My number is: {one}, and my name is: {two}".format(one=
SyntaxError: Invalid syntax
[13]: print("My number is: {one}, and my name is: {two}".format(one=num,two=name)
My number is: 12, and my name is: Sam
[14]: print("My number is: {}, and my name is: {}".format(num,name)
My number is: 12, and my name is: Sam
[15]: [1,2,3]
[16]: [1, 2, 3]
[16]: [hi,[1,2]]
NameError                                Traceback (most recent call last)
Input In [16], in <cell line: 1>()
----> 1 [hi,[1,2]]
NameError: name 'hi' is not defined
[ ]:
```

The error message "NameError: name 'hi' is not defined" is highlighted in red. The console also shows a "SyntaxError: Invalid syntax" message for the previous cell.

```
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Console 1
[17]: ['hi', 1, [1, 2]]
[17]: ['hi', 1, [1, 2]]
[18]: my_list = ['a', 'b', 'c']
[19]: my_list.append('d')
      my_list.append('d')
      ^
SyntaxError: EOL while scanning string literal

[20]: my_list.append('d')

[21]: my_list
[21]: ['a', 'b', 'c', 'd']
[22]: my_list[0]
[22]: 'a'
[23]: my_list[1]
[23]: 'b'
[24]: my_list[1]
[24]: ['b', 'c', 'd']
[25]: my_list[1]
[25]: ['a']
[26]: my_list
[26]: ['a', 'b', 'c', 'd']
[27]: my_list[0] = new
      ^
NameError
Input In [27], in cell line 1:()
----> 1 my_list[0] = new
Traceback (most recent call last)

[ ]:
```

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Console 1
[28]: my_list[0] = 'NEW'
[29]: my_list
[29]: ['NEW', 'b', 'c', 'd']
[30]: nest = [1,2,3,[4,5['target']]]
      Input In [30]
      nest = [1,2,3,[4,5['target']]]
      ^
SyntaxError: Invalid syntax

[31]: nest = [1,2,3,[4,5,{'target'}]]

[32]: nest[3]
[32]: [4, 5, {'target'}]
[33]: nest[3][2]
[33]: {'target'}
[34]: d = {'key1':'item1', 'key2':'item2'}
[35]: d
[35]: {'key1': 'item1', 'key2': 'item2'}
[36]: true
      ^
NameError
Input In [36], in cell line 1:()
----> 1 true
NameError: name 'true' is not defined

[37]: True
[37]: True
[38]: False
[38]: False

[ ]:
```

```
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Console 1
[37]: True
[38]: False
[39]: False
[39]: t = (1,2,3)
[40]: t[0]
[40]: 1
[41]: t[0] = 'New'
TypeError: tuple object does not support item assignment
Traceback (most recent call last)
Input In [41], in <cell line: 1>():
----> 1 t[0] = 'New'
TypeError: 'tuple' object does not support item assignment
[42]: (1,2,3)
[42]: (1, 2, 3)
[43]: (1,2,3,1,2,3,1,2,3,3,3,3,2,2,2,1,2,1)
[43]: (1, 2, 3)
[44]: 1+2
[44]: False
[45]: 1==1
[45]: True
[46]: 1<=4
[46]: True
[47]: 1==1
[ ]:
```

```
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Console 1
[47]: True
[48]: 'hi' == 'bye'
[48]: False
[49]: (1+2).and(2+3)
[49]: False
[50]: (1+2) or (2+3)
[50]: True
[51]: (1==2)or(2==3)or(4==4)
[51]: True
[52]: if (1+2):
Input In [52]
if (1+2):
IndentationError: expected an indented block
[53]: if (1+2):
print('yep!')
yep!
[54]: if 1+2:
print('first')
else:
print('last')
Input In [54]
else
SyntaxError: invalid syntax
[55]: if 1+2:
print('first')
else:
print('last')
[ ]:
```

```
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Console 1
[50]: if 1>2:
      print('first')
      else:
          print('last')
      last

[56]: if 1<2:
      print('first')
      elif 3==3:
          print('middle')
      else:
          print('last')
      middle

[57]: seq = [1,2,3,4,5]

[58]: seq
[58]: [1, 2, 3, 4, 5]

[59]: for item in seq:
      Input In [59]
      for item in seq:
      IndentationError: expected an indented block

[60]: for item in seq:
      print(item)
      1
      2
      3
      4
      5

[61]: for item in seq:
      print('yep!')
      Input In [61]
      print('yep!')
      SyntaxError: invalid syntax

[62]: for item in seq:
      print('yep!')

[ ]:
```

```
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Console 1
[62]: for item in seq:
      print('yep!')
      yep!
      yep!
      yep!
      yep!

[63]: i=1
      while i<=5:
          print('i is {}'.format(i))
          Input In [63]
          print('i is {}'.format(i))
          SyntaxError: EOL while scanning string literal

[64]: i=1
      while i<=5:
          print('i is {}'.format(i))
          i=i+1
          Input In [64]
          print('i is {}'.format(i))
          SyntaxError: EOL while scanning string literal

[65]: i=1
      while i<=5:
          print('i is {}'.format(i))
          i=i+1
          Input In [65]
          i=i+1
          IndentationError: unexpected indent

[66]: i=1
      while i<=5:
          print('i is {}'.format(i))
          i=i+1
          Input In [66]
          i=i+1
          IndentationError: unexpected indent

[ ]:
```

```
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Console 1
0
[79]: <function __main__.sequence()>
[79]: print(out)
[79]: 4
[80]: def time2(var):
[80]:     return var**2
[81]: print(time2)
[81]: <function time2 at 0x7f09a0112310>
[82]: time2(2)
[82]: 4
[83]: lambda var: var**2
[84]: <function __main__.<lambda>(var)>
[85]: seq = [1,2,3,4,5]
[86]: list(map(time2,seq))
[86]: [2, 4, 6, 8, 10]
[87]: filter(lambda item: item%2 == 0,seq)
[87]: <filter at 0x7f09a3c62e80>
[88]: list(filter(lambda item: item%2 == 0,seq))
[88]: [2, 4]
[89]: st = 'hello my name is san'
[90]: st = 'hello my name is San'
[91]: st.upper()
[91]: 'HELLO MY NAME IS SAN'
[92]: st.split()
[92]: ['']

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```

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Console 1
0
[93]: 'sports'
[94]: d
[95]: {'key1': 'item1', 'key2': 'item2'}
[96]: d.keys()
[96]: dict_keys(['key1', 'key2'])
[97]: d.items()
[97]: dict_items([('key1', 'item1'), ('key2', 'item2')])
[98]: list = [1,2,3]
[99]: list
[99]: [1, 2, 3]
[100]: list.pop()
[100]: 3
[101]: list
[101]: [1, 2]
[102]: 'x' in [1,2,3]
[102]: False
[103]: 'x' in [x,y,z]
[103]: False
[104]: 'x' in ['x','y','z']
[104]: True
[105]: #bofId

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## Exercise4:

```
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Console 1
[106]: aboia
[107]: 7 ** 4
[107]: 2401
[108]: s = 'Hi there Sam'
[109]: s.split()
[109]: ['Hi', 'there', 'Sam']
[110]: list = [1,2,[3,4],[5,[100,200,['hello']],23,11,1,7]]
Input In [110]
list = [1,2,[3,4],[5,[100,200,['hello']],23,11,1,7]]
SyntaxError: invalid syntax
[111]: list = [1,2,[3,4],[5,[100,200,['hello']],23,11,1,7]]
[112]: list[3][1][2][0]
[112]: 'hello'
[113]: d = {'ki':[1,2,3,{'tricky':['oh','man','inception',{'target':[1,2,3,'hello']}]]]}
[114]: d['ki'][3][{'tricky'}[0]]['target'][0]
[114]: 'hello'
[115]: def domainGet(inp):
        return inp.split('@')[1]
[116]: domainGet('user@domain.com')
NameError                                Traceback (most recent call last)
Input In [116], in <cell line: 1>
----> 1 domainGet('user@domain.com')
NameError: name 'domainGet' is not defined

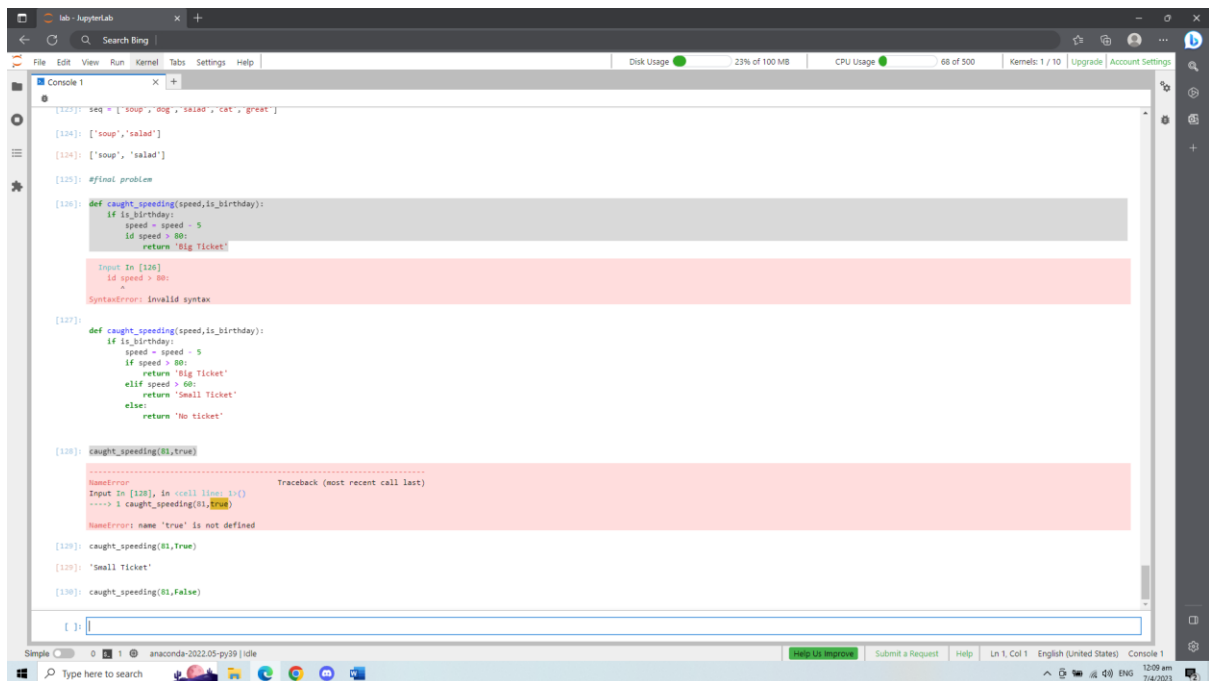
[ ]:
```

```
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Console 1
[117]: domain.com
[118]: def findDog(inp):
        return dog in inp.lower().split()
[119]: findDog('Is there a dog here')
[119]: True
[120]: def countDog(inp):
Input In [120]
def countDog(inp):
IndentationError: expected an indented block
[121]: def countDog(inp):
        dog = 0
        for x in inp.lower().split():
            if x == 'dog':
                dog+=1
        return dog
[122]: countDog('This dog runs faster than the dog dudel')
[122]: 1
[123]: seq = ['soup','dog','salad','cat','great']
[124]: ['soup','salad']
[124]: ['soup', 'salad']
[125]: #final problem
[126]: def caught_speeding(speed,is_birthday):
        if is_birthday:
            speed = speed - 5
            if speed > 80:
                return 'Big Ticket!'
Input In [126]
if speed > 80:
SyntaxError: invalid syntax

[ ]:
```

## Final problem



The screenshot shows a JupyterLab interface with a console window. The console displays the following code and output:

```
[123]: seq = ['soup', 'dog', 'salad', 'cat', 'great']
[124]: ['soup', 'salad']
[125]: ['soup', 'salad']
[126]: #final problem
[126]: def caught_speeding(speed, is_birthday):
    if is_birthday:
        speed = speed - 5
        if speed > 80:
            return 'Big Ticket'
    else:
        if speed > 80:
            return 'Big Ticket'
        elif speed > 60:
            return 'Small Ticket'
        else:
            return 'No ticket'

[127]: caught_speeding(81, True)
NameError: name 'True' is not defined
Traceback (most recent call last):
  Input In [126], in cell line 10()
    ----> 1 caught_speeding(81, True)
NameError: name 'True' is not defined

[128]: caught_speeding(81, True)
[129]: 'Small Ticket'
[130]: caught_speeding(81, False)
```

The console also shows a syntax error for the input in line 126:

```
Input In [126]:
id speed > 80:
=
SyntaxError: invalid syntax
```