

Week 1 Assignment


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Assignment 1: Setup the environment & Python interpreter

Task 1.2

1. The version of my python is Python 3.9.5

A screenshot of a macOS terminal window. The title bar at the top shows three colored window control buttons (red, yellow, green) on the left, followed by a folder icon and the text "farhantahmidlp — zsh — 80x24". The terminal content shows a prompt "(base) farhantahmidlp@FarhansMacBookPro ~ %" followed by the command "python --version". The output of the command is "Python 3.9.5". Below the output, the prompt "(base) farhantahmidlp@FarhansMacBookPro ~ %" is shown again with a cursor, indicating the command has been executed and the prompt is ready for the next input.

```
(base) farhantahmidlp@FarhansMacBookPro ~ % python --version
Python 3.9.5
(base) farhantahmidlp@FarhansMacBookPro ~ %
```

2. The release date of my Python is May 18, 2021

```
farhantahmidlp — python — 80x24
[(base) farhantahmidlp@FarhansMacBookPro ~ % python
Python 3.9.5 (default, May 18 2021, 12:31:01)
[Clang 10.0.0 ] :: Anaconda, Inc. on darwin
Type "help", "copyright", "credits" or "license" for more information.
>>> █
```

3. The full command to get help is 'python -- help'

```
farhantahmidlp — -zsh — 80x24
[(base) farhantahmidlp@FarhansMacBookPro ~ % python --help
usage: python [option] ... [-c cmd | -m mod | file | -] [arg] ...
Options and arguments (and corresponding environment variables):
-b      : issue warnings about str(bytes_instance), str(bytearray_instance)
          and comparing bytes/bytearray with str. (-bb: issue errors)
-B      : don't write .pyc files on import; also PYTHONDONTWRITEBYTECODE=x
-c cmd  : program passed in as string (terminates option list)
-d      : turn on parser debugging output (for experts only, only works on
          debug builds); also PYTHONDEBUG=x
-E      : ignore PYTHON* environment variables (such as PYTHONPATH)
-h      : print this help message and exit (also --help)
-i      : inspect interactively after running script; forces a prompt even
          if stdin does not appear to be a terminal; also PYTHONINSPECT=x
-I      : isolate Python from the user's environment (implies -E and -s)
-m mod  : run library module as a script (terminates option list)
-O      : remove assert and __debug__-dependent statements; add .opt-1 before
          .pyc extension; also PYTHONOPTIMIZE=x
-OO     : do -O changes and also discard docstrings; add .opt-2 before
          .pyc extension
-q      : don't print version and copyright messages on interactive startup
-s      : don't add user site directory to sys.path; also PYTHONNOUSERSITE
-S      : don't imply 'import site' on initialization
-u      : force the stdout and stderr streams to be unbuffered;
          this option has no effect on stdin; also PYTHONUNBUFFERED=x
```

4.

```
farhantahmidlp — python — 80x24
Last login: Wed Feb 15 19:06:48 on ttys000
[(base) farhantahmidlp@FarhansMacBookPro ~ % python
Python 3.9.5 (default, May 18 2021, 12:31:01)
[Clang 10.0.0 ] :: Anaconda, Inc. on darwin
Type "help", "copyright", "credits" or "license" for more information.
[>>> import keyword
[>>> l=keyword.kwlist
[>>> print(l)
['False', 'None', 'True', '__peg_parser__', 'and', 'as', 'assert', 'async', 'awa
it', 'break', 'class', 'continue', 'def', 'del', 'elif', 'else', 'except', 'fina
lly', 'for', 'from', 'global', 'if', 'import', 'in', 'is', 'lambda', 'nonlocal',
'not', 'or', 'pass', 'raise', 'return', 'try', 'while', 'with', 'yield']
>>> █
```

5.

```
farhantahmidlp — python — 80x24
[(base) farhantahmidlp@FarhansMacBookPro ~ % python
Python 3.9.5 (default, May 18 2021, 12:31:01)
[Clang 10.0.0 ] :: Anaconda, Inc. on darwin
Type "help", "copyright", "credits" or "license" for more information.
[>>> help('modules')

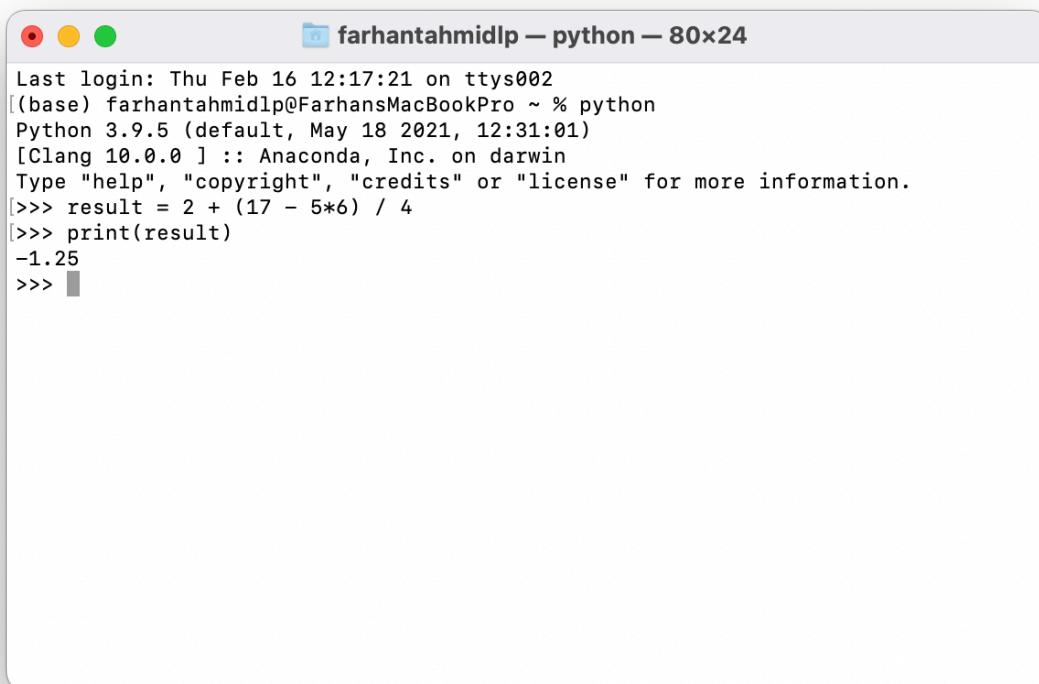
Please wait a moment while I gather a list of all available modules...

/Users/farhantahmidlp/opt/miniconda3/lib/python3.9/pkgutil.py:93: UserWarning: T
he numpy.array_api submodule is still experimental. See NEP 47.
  __import__(info.name)
OpenSSL          _uuid          gettext         rlcompleter
PIL              _warnings      glob            ruamel_yaml
__future__       _weakref       graphlib        runpy
_abc             _weakrefset    grp            sched
_aix_support     _xxsubinterpreters  gzip          scipy
_ast            _xxtestfuzz    hashlib         secrets
_asyncio         _zoneinfo      heapq          select
_bisect          abc            hmac           selectors
_blake2          aifc           html           serial
_bootlocale     antigravity    http           setuptools
_bootsubprocess argparse        idlelib        shelve
_bz2             array          idna           shlex
_cffi_backend   ast            imaplib        shutil
```

Assignment 2: Variables and Operators

Task 2.1

2.1.1.

A screenshot of a macOS terminal window titled "farhantahmidlp — python — 80x24". The window shows the output of a Python script. The first line is the login message: "Last login: Thu Feb 16 12:17:21 on ttys002". The next line is the prompt "(base) farhantahmidlp@FarhansMacBookPro ~ % python". This is followed by the Python version and date: "Python 3.9.5 (default, May 18 2021, 12:31:01)". Then, the Clang version and platform are shown: "[Clang 10.0.0] :: Anaconda, Inc. on darwin". A message prompts the user to type "help", "copyright", "credits" or "license" for more information. The code being executed is:

```
[>>> result = 2 + (17 - 5*6) / 4  
[>>> print(result)  
-1.25  
>>> ]
```

The result is -1.25


2.1.2.

A terminal window titled "farhantahmidlp — python — 80x24" with standard macOS window controls (red, yellow, green buttons). The terminal shows the following text:

```
[(base) farhantahmidlp@FarhansMacBookPro ~ % python  
Python 3.9.5 (default, May 18 2021, 12:31:01)  
[Clang 10.0.0 ] :: Anaconda, Inc. on darwin  
Type "help", "copyright", "credits" or "license" for more information.  
[>>> width=20  
[>>> height=2**5  
[>>> print(width*height)  
640  
>>> ]
```

The result is 640.

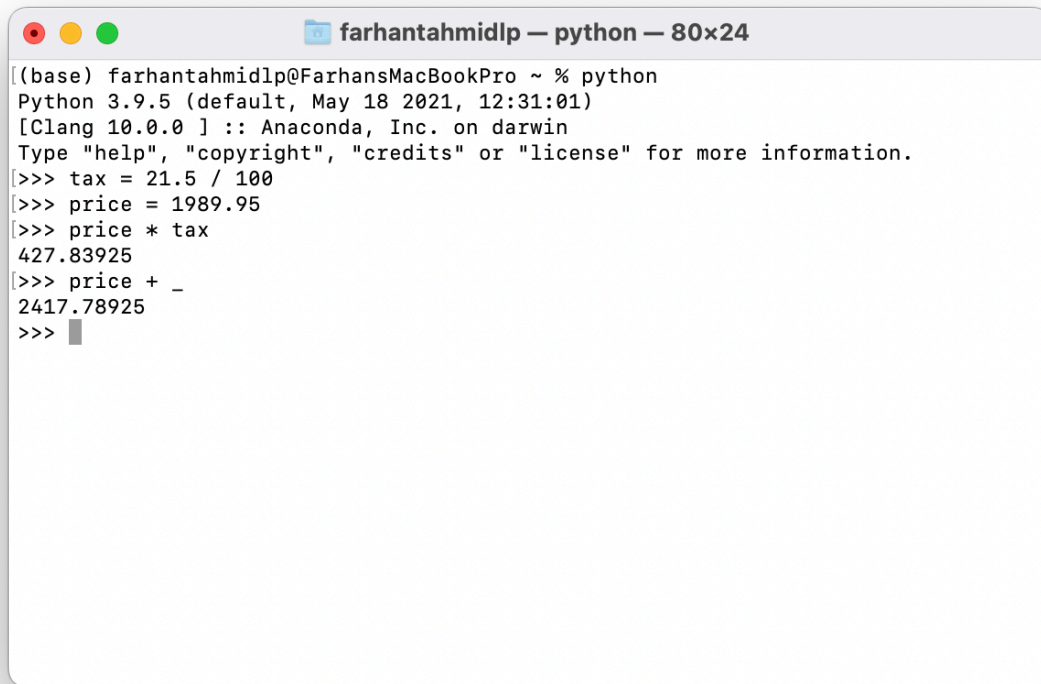
2.1.3.

A terminal window titled "farhantahmidlp — python — 80x24" with standard macOS window controls (red, yellow, green buttons). The terminal shows the following text:

```
[(base) farhantahmidlp@FarhansMacBookPro ~ % python  
Python 3.9.5 (default, May 18 2021, 12:31:01)  
[Clang 10.0.0 ] :: Anaconda, Inc. on darwin  
Type "help", "copyright", "credits" or "license" for more information.  
[>>> tax = 21.5 / 100  
[>>> price = 1989.95  
[>>> price * tax  
427.83925  
[>>> price + _  
2417.78925  
>>> ]
```

The final value is 2417.78926. The _ means the last result.

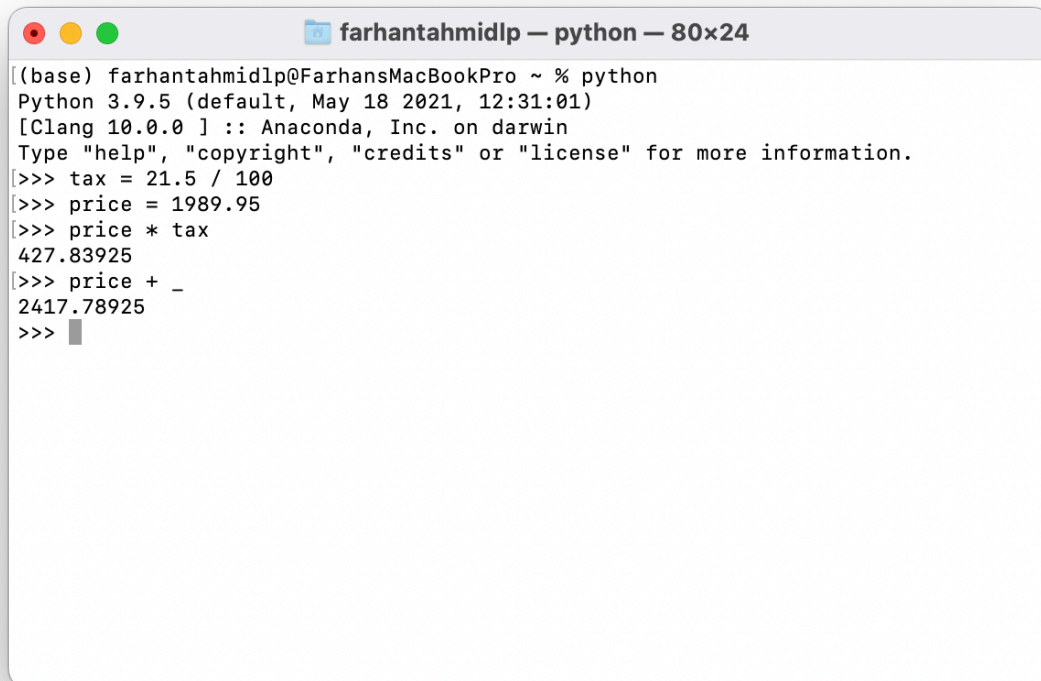
2.1.4.

A terminal window titled "farhantahmidlp — python — 80x24" with standard macOS window controls (red, yellow, green buttons). The terminal shows the following text:

```
[(base) farhantahmidlp@FarhansMacBookPro ~ % python  
Python 3.9.5 (default, May 18 2021, 12:31:01)  
[Clang 10.0.0 ] :: Anaconda, Inc. on darwin  
Type "help", "copyright", "credits" or "license" for more information.  
[>>> tax = 21.5 / 100  
[>>> price = 1989.95  
[>>> price * tax  
427.83925  
[>>> price + _  
2417.78925  
>>> ]
```

The type of variable of 'result' is float.

2.1.5.

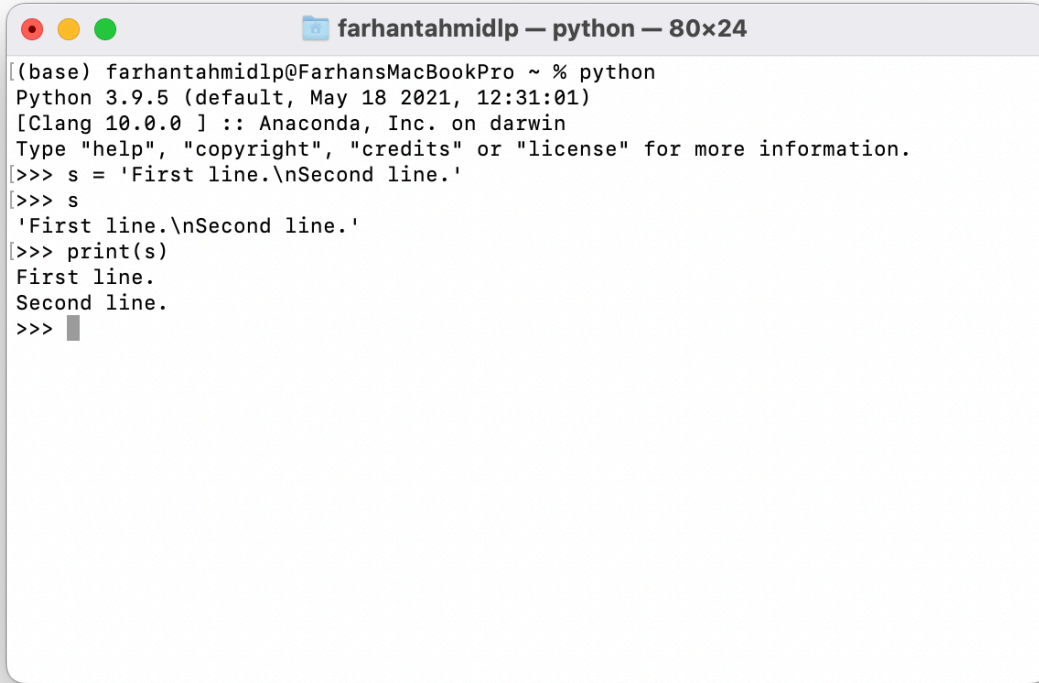
A screenshot of a terminal window titled "farhantahmidlp — python — 80x24". The terminal shows the following text:

```
[(base) farhantahmidlp@FarhansMacBookPro ~ % python  
Python 3.9.5 (default, May 18 2021, 12:31:01)  
[Clang 10.0.0 ] :: Anaconda, Inc. on darwin  
Type "help", "copyright", "credits" or "license" for more information.  
[>>> tax = 21.5 / 100  
[>>> price = 1989.95  
[>>> price * tax  
427.83925  
[>>> price + _  
2417.78925  
>>> ]
```

23/3 means a simple division of 23 by 3, the result is 7.6666667.
But 23//3 is a floor division and the result of 23//3 is 7.

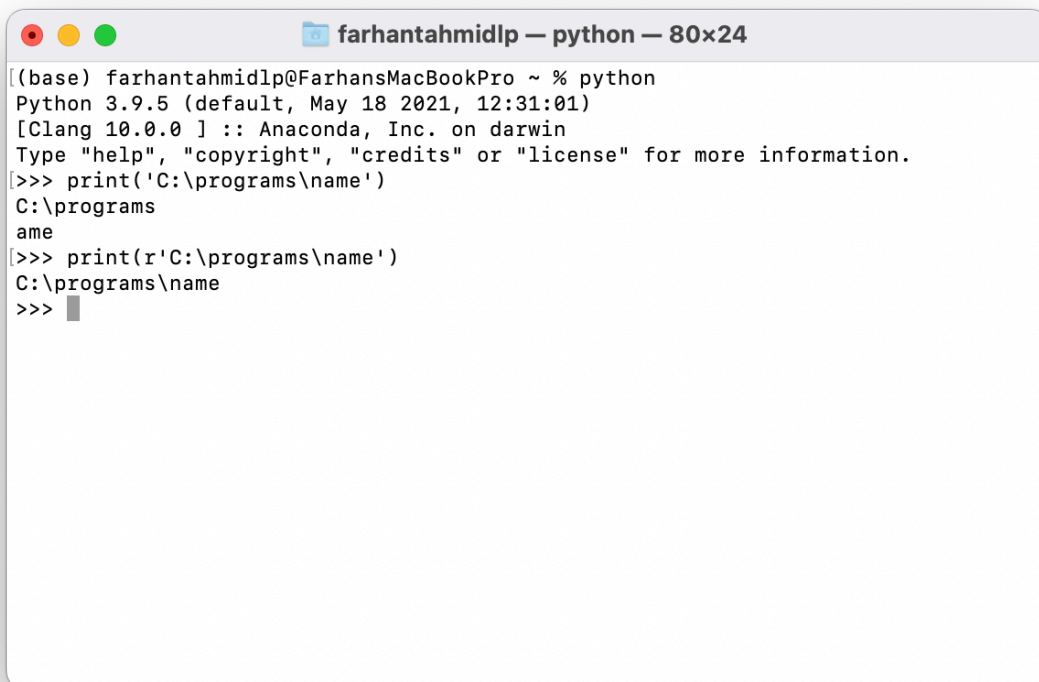
Task 2.2

2.2.1.



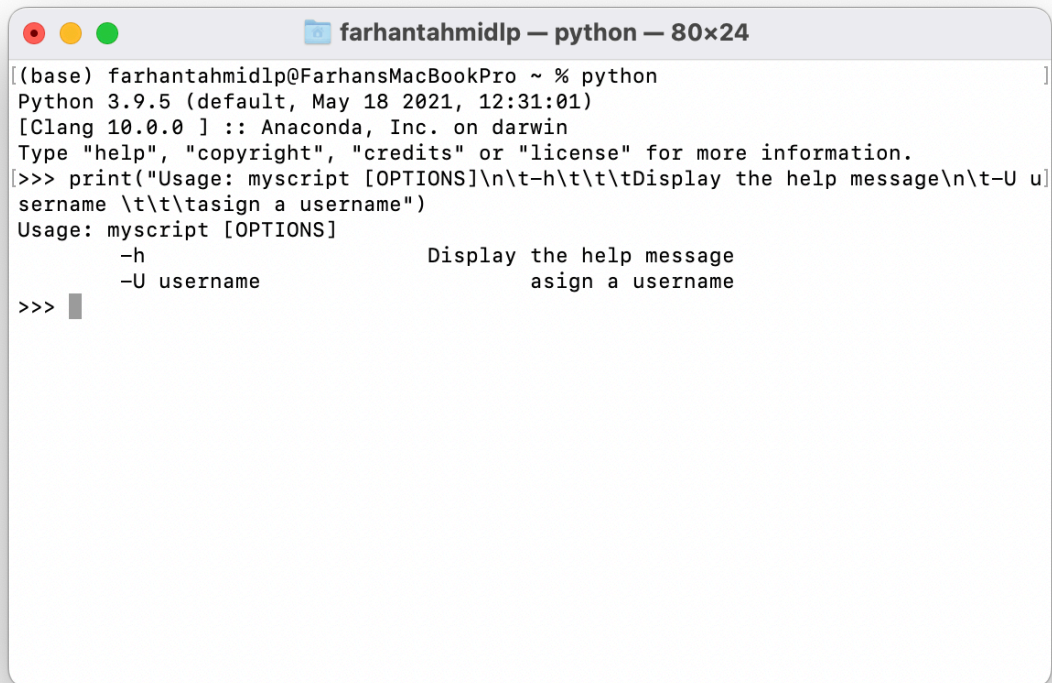
```
farhantahmidlp — python — 80x24
(base) farhantahmidlp@FarhansMacBookPro ~ % python
Python 3.9.5 (default, May 18 2021, 12:31:01)
[Clang 10.0.0 ] :: Anaconda, Inc. on darwin
Type "help", "copyright", "credits" or "license" for more information.
[>>> s = 'First line.\nSecond line.'
[>>> s
'First line.\nSecond line.'
[>>> print(s)
First line.
Second line.
>>> █
```

2.2.2.



```
farhantahmidlp — python — 80x24
(base) farhantahmidlp@FarhansMacBookPro ~ % python
Python 3.9.5 (default, May 18 2021, 12:31:01)
[Clang 10.0.0 ] :: Anaconda, Inc. on darwin
Type "help", "copyright", "credits" or "license" for more information.
[>>> print('C:\programs\name')
C:\programs
ame
[>>> print(r'C:\programs\name')
C:\programs\name
>>> █
```


2.2.3.

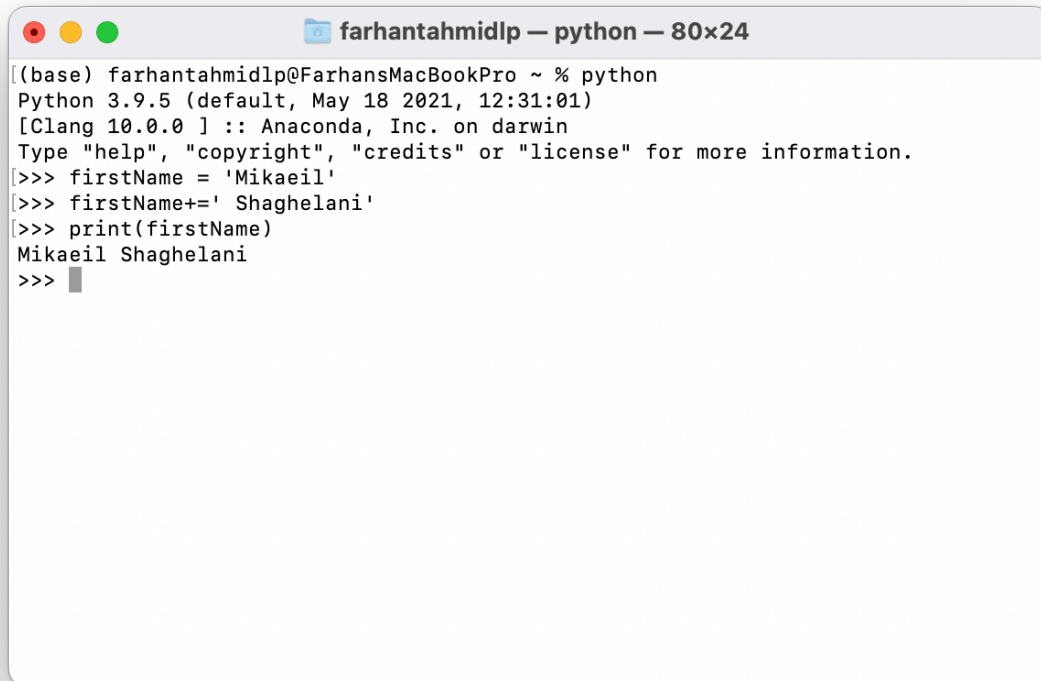


```
farhantahmidlp — python — 80x24
[(base) farhantahmidlp@FarhansMacBookPro ~ % python
Python 3.9.5 (default, May 18 2021, 12:31:01)
[Clang 10.0.0 ] :: Anaconda, Inc. on darwin
Type "help", "copyright", "credits" or "license" for more information.
[>>> print("Usage: myscript [OPTIONS]\n\t-h\t\t\tDisplay the help message\n\t-U u]
sername \t\t\tasign a username")
Usage: myscript [OPTIONS]
      -h                        Display the help message
      -U username              asign a username
>>> █
```

```
print("Usage: myscript [OPTIONS]\n\t-h\t\t\tDisplay the help message\n\t-U username \t\t\tasign a username")
```

2.2.4.

The error is that the second line doesn't have an assignment operator. To print "Mikaeil Shaghelani", I need a '+' assignment operator in line 2.

A screenshot of a terminal window titled "farhantahmidlp — python — 80x24". The terminal shows the following text:

```
[(base) farhantahmidlp@FarhansMacBookPro ~ % python  
Python 3.9.5 (default, May 18 2021, 12:31:01)  
[Clang 10.0.0 ] :: Anaconda, Inc. on darwin  
Type "help", "copyright", "credits" or "license" for more information.  
[>>> firstName = 'Mikaeil'  
[>>> firstName+=' Shaghelani'  
[>>> print(firstName)  
Mikaeil Shaghelani  
>>> ]
```

2.2.5.

The first 4 lines will print the words at the position. And the slicing [:] operators print the part of the sliced word.



```
farhantahmidlp — python — 80x24
(base) farhantahmidlp@FarhansMacBookPro ~ % python
Python 3.9.5 (default, May 18 2021, 12:31:01)
[Clang 10.0.0 ] :: Anaconda, Inc. on darwin
Type "help", "copyright", "credits" or "license" for more information.
[>>> word = 'Programming Basic'
[>>> word[0]
'p'
[>>> word[10]
'g'
[>>> word[-3]
's'
[>>> word[-12]
'a'
[>>> word[0:6]
'Progra'
[>>> word[0:11]+word[0:11]
'ProgrammingProgramming'
>>>
```