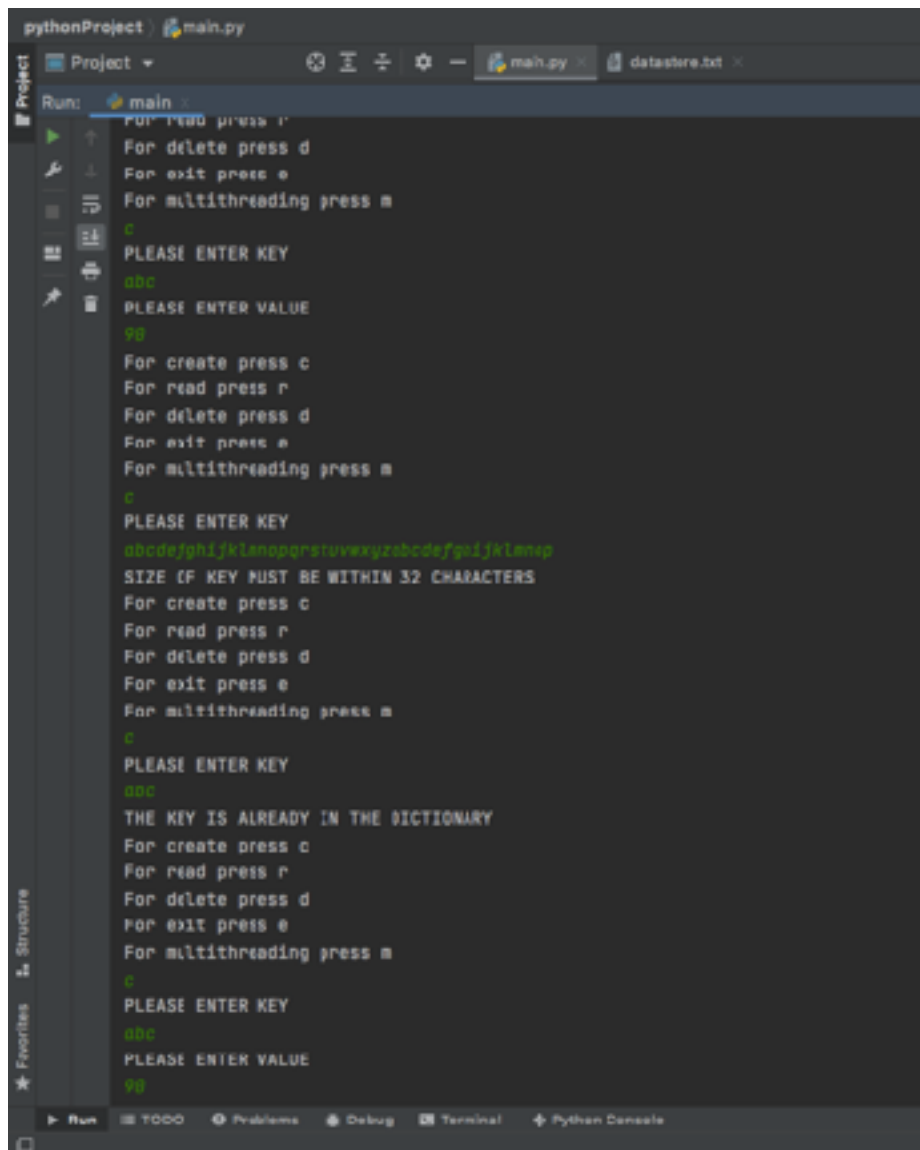


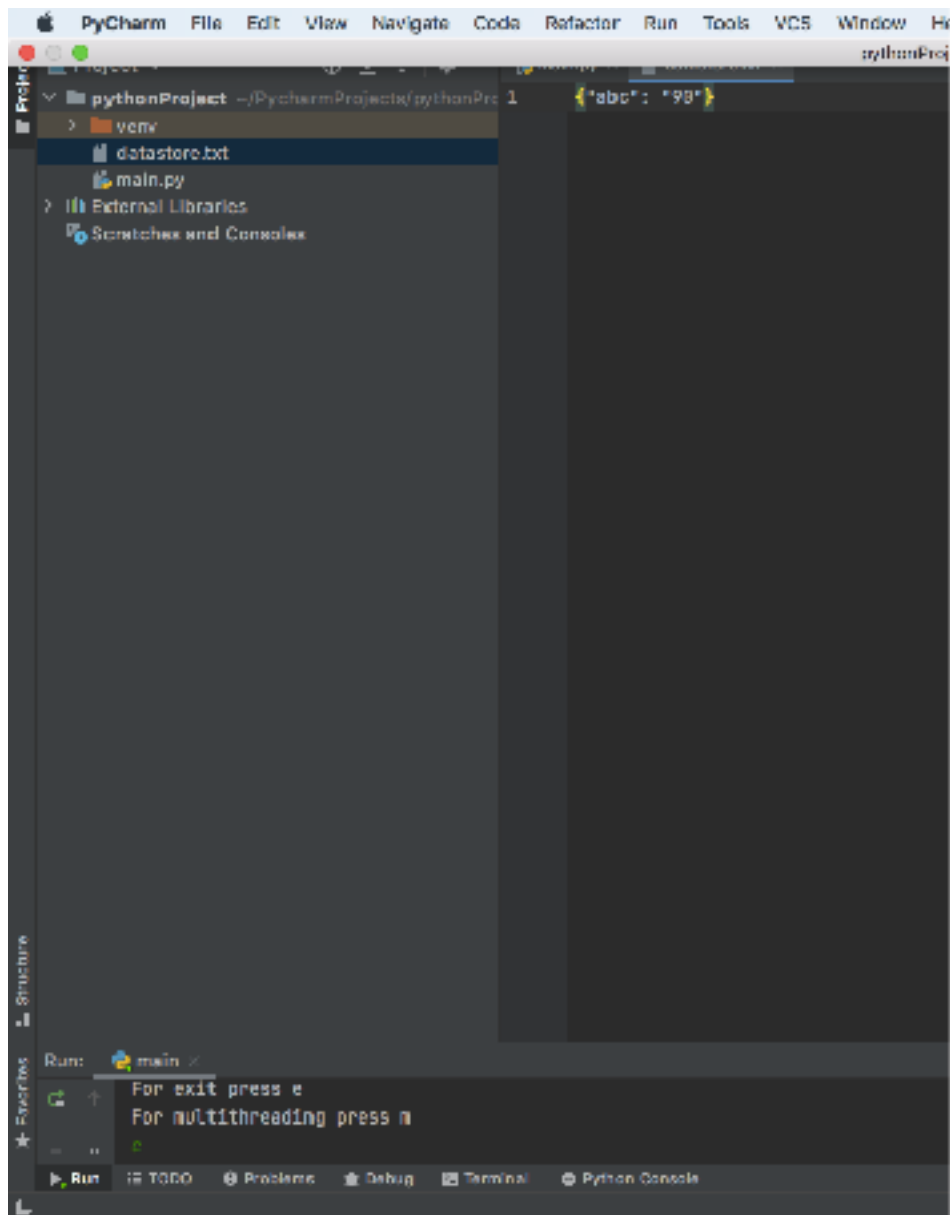
UNIT TESTING:

CREATE OPERATION:

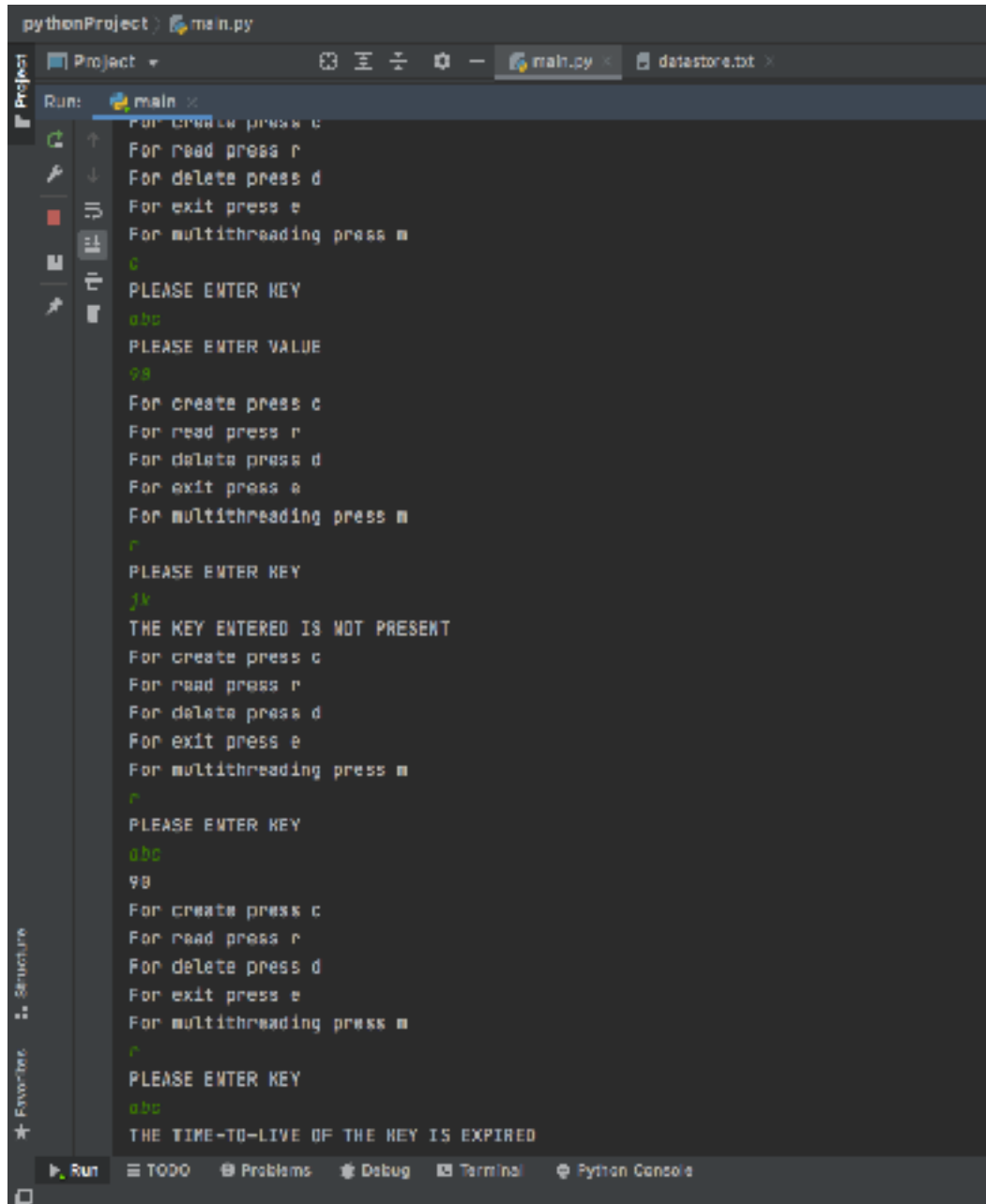


```
pythonProject > main.py
Project
Run: main
For read press r
For delete press d
For exit press e
For multithreading press m
c
PLEASE ENTER KEY
abc
PLEASE ENTER VALUE
90
For create press c
For read press r
For delete press d
For exit press e
For multithreading press m
c
PLEASE ENTER KEY
abcdefghijklmnopqrstuvwxyzabcedefghijklmnop
SIZE OF KEY MUST BE WITHIN 32 CHARACTERS
For create press c
For read press r
For delete press d
For exit press e
For multithreading press m
c
PLEASE ENTER KEY
abc
THE KEY IS ALREADY IN THE DICTIONARY
For create press c
For read press r
For delete press d
For exit press e
For multithreading press m
c
PLEASE ENTER KEY
abc
PLEASE ENTER VALUE
90
Run | TODO | Problems | Debug | Terminal | Python Console
```

FILE AFTER THE ABOVE OPERATIONS:

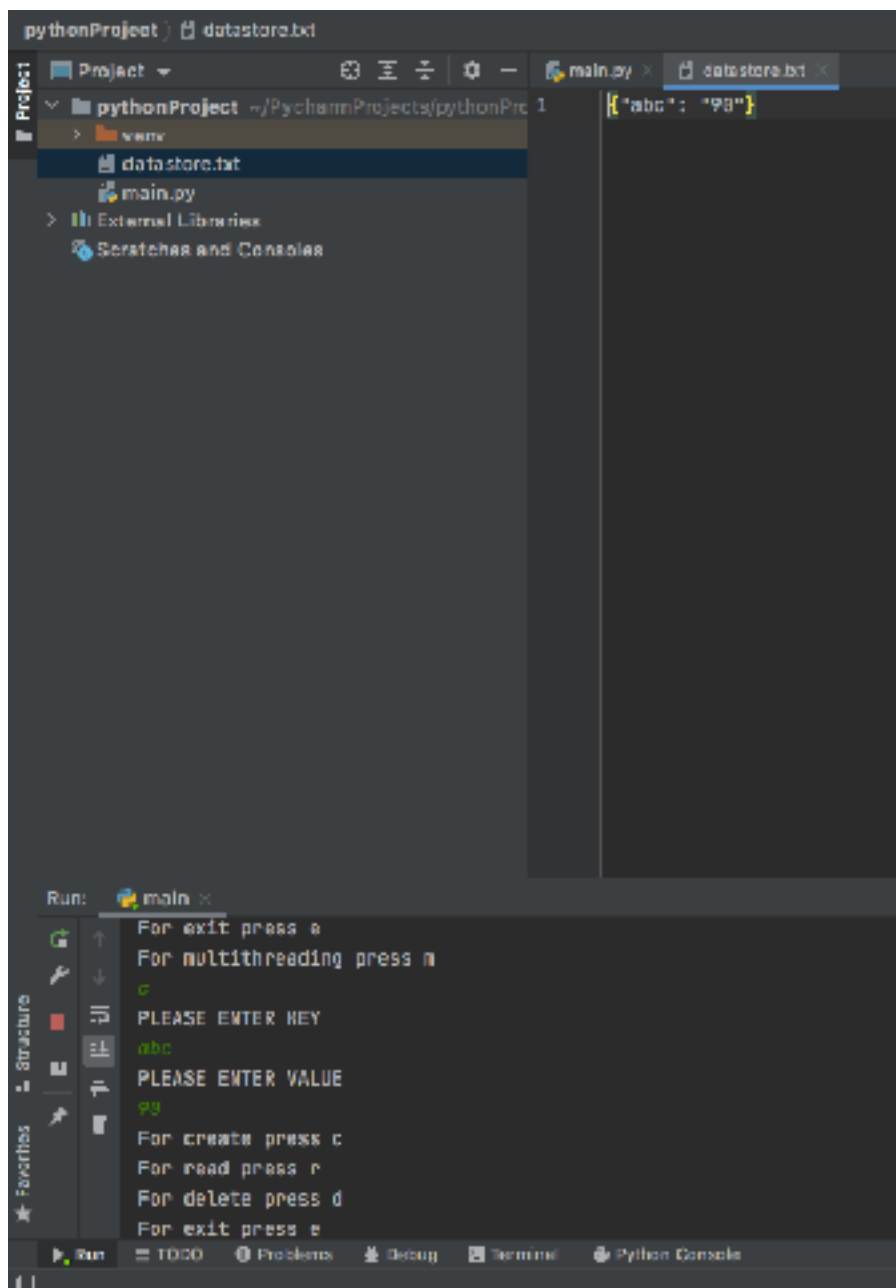


READ OPERATION:

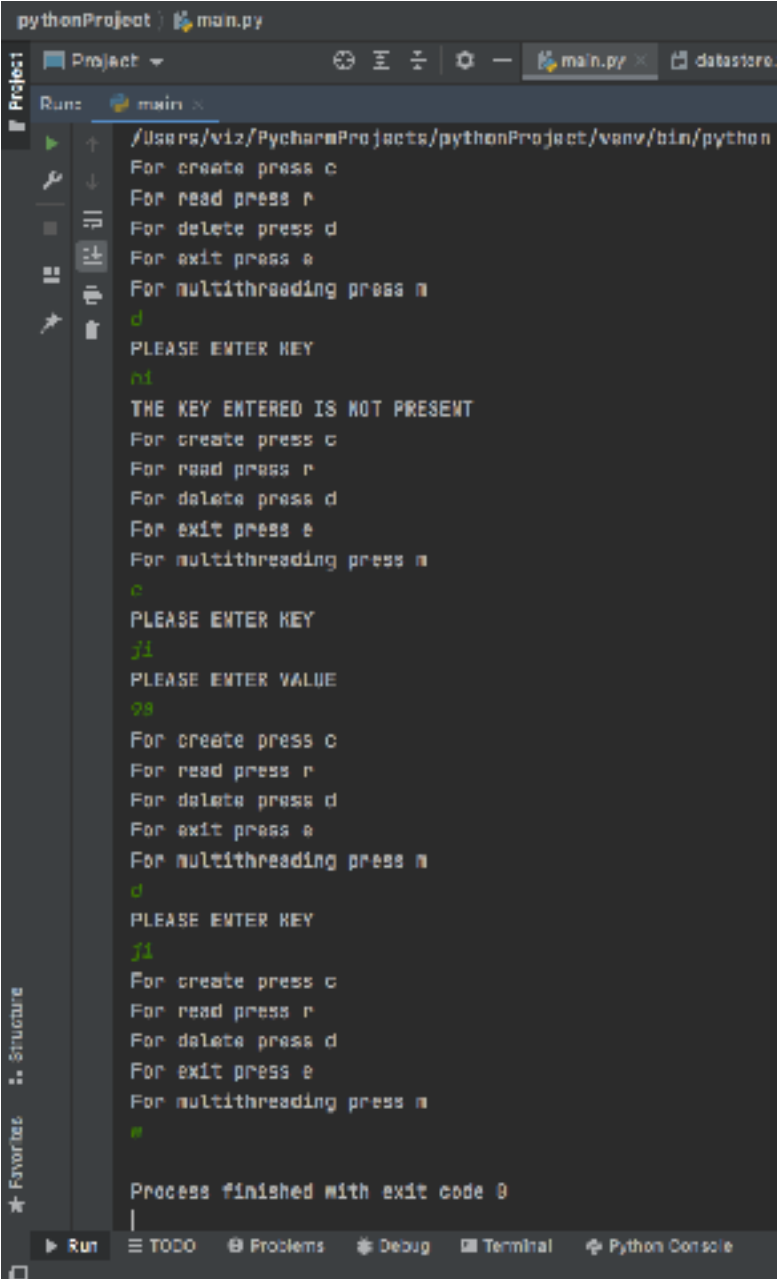


```
pythonProject > main.py
Project
Run: main
For create press c
For read press r
For delete press d
For exit press e
For multithreading press m
c
PLEASE ENTER KEY
abc
PLEASE ENTER VALUE
98
For create press c
For read press r
For delete press d
For exit press e
For multithreading press m
r
PLEASE ENTER KEY
jk
THE KEY ENTERED IS NOT PRESENT
For create press c
For read press r
For delete press d
For exit press e
For multithreading press m
r
PLEASE ENTER KEY
abc
98
For create press c
For read press r
For delete press d
For exit press e
For multithreading press m
r
PLEASE ENTER KEY
abc
THE TIME-TO-LIVE OF THE KEY IS EXPIRED
```

FILE AFTER READ OPERATIONS:

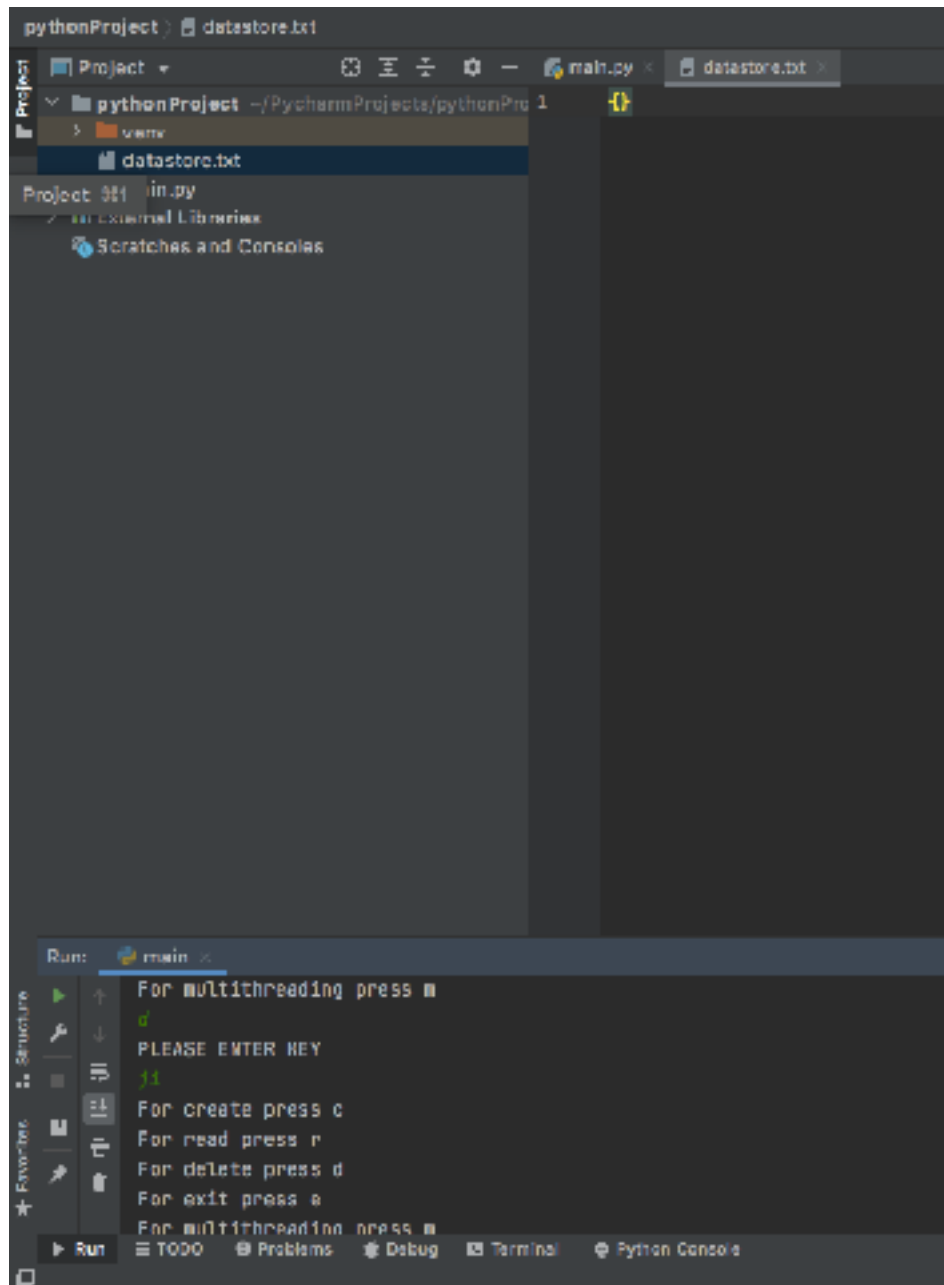


DELETE OPERATIONS:

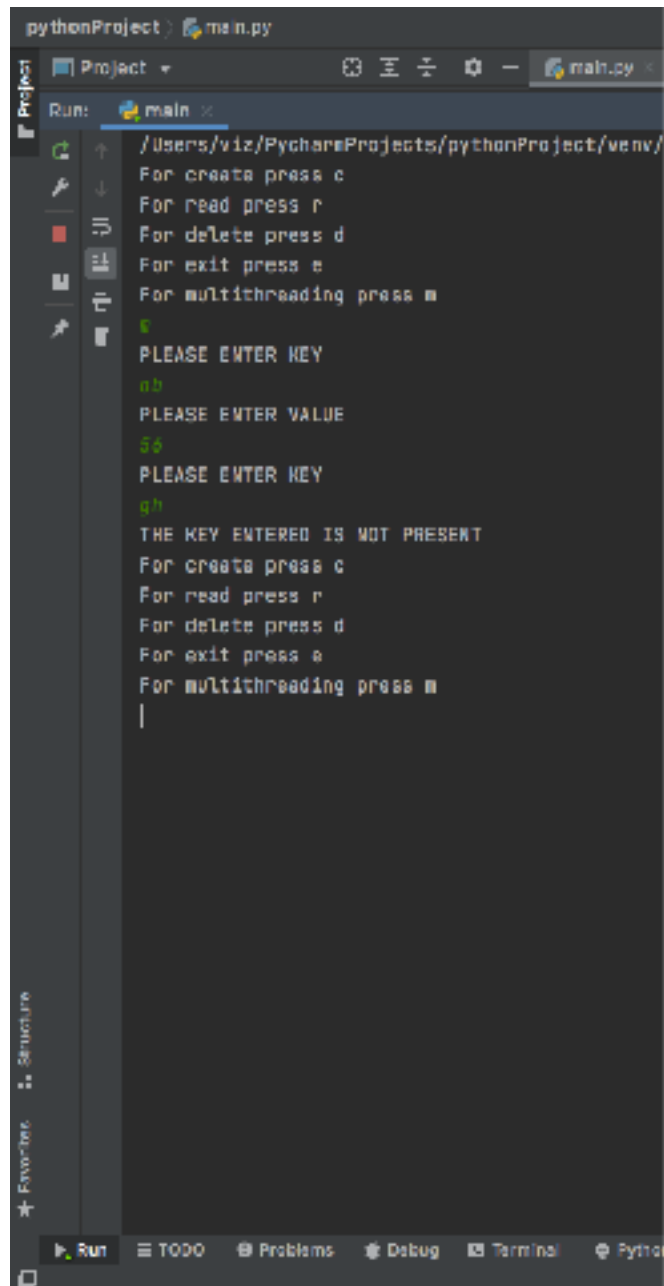


```
pythonProject | main.py
Run: main x
/Users/viz/PycharmProjects/pythonProject/venv/bin/python
For create press c
For read press r
For delete press d
For exit press e
For multithreading press m
d
PLEASE ENTER KEY
n1
THE KEY ENTERED IS NOT PRESENT
For create press c
For read press r
For delete press d
For exit press e
For multithreading press m
e
PLEASE ENTER KEY
j1
PLEASE ENTER VALUE
99
For create press c
For read press r
For delete press d
For exit press e
For multithreading press m
d
PLEASE ENTER KEY
j1
For create press c
For read press r
For delete press d
For exit press e
For multithreading press m
e
Process finished with exit code 0
|
```

FILE AFTER THE ABOVE OPERATIONS:



MULTITHREADING OPERATIONS:



The screenshot shows the PyCharm IDE interface. The top toolbar includes icons for Run, Debug, and other development tools. The main editor window displays a Python script named `main.py` with the following content:

```
pythonProject \ main.py
Project
Run: main
/Users/viz/PycharmProjects/pythonProject/venv/
For create press c
For read press r
For delete press d
For exit press e
For multithreading press m
PLEASE ENTER KEY
ab
PLEASE ENTER VALUE
50
PLEASE ENTER KEY
gh
THE KEY ENTERED IS NOT PRESENT
For create press c
For read press r
For delete press d
For exit press e
For multithreading press m
|
```

The bottom status bar shows the 'Run' tab is active, along with other tabs like 'TODO', 'Problems', 'Debug', 'Terminal', and 'Python'.

FILE AFTER THE OPERATIONS:

