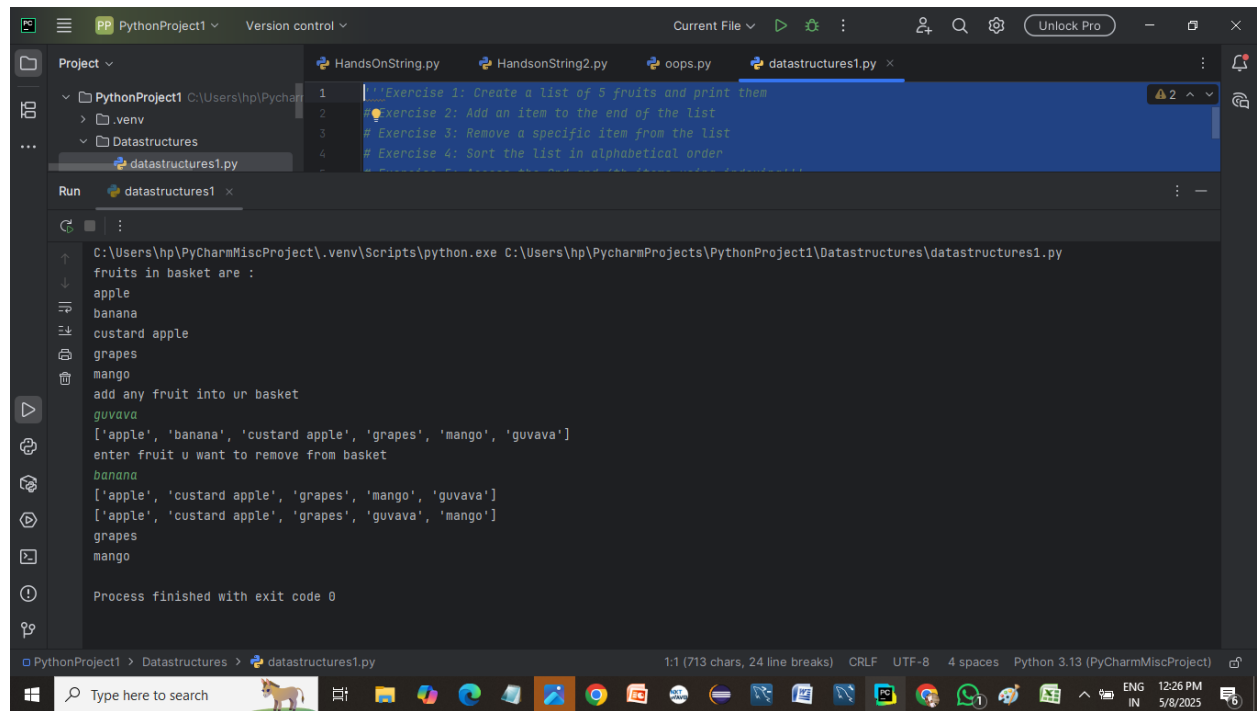


Hands-on DataStructures

```
'''Exercise 1: Create a list of 5 fruits and print them
# Exercise 2: Add an item to the end of the list
# Exercise 3: Remove a specific item from the list
# Exercise 4: Sort the list in alphabetical order
# Exercise 5: Access the 2nd and 4th items using indexing'''

#exer1
list_fruits=['apple','banana','custard apple',"grapes","mango"]
print("fruits in basket are :")
for i in list_fruits:
    print(i)
#exer2
newMem=input("add any fruit into ur basket\n")
list_fruits.append(newMem)
print(list_fruits)
#exer3
remMem=input("enter fruit u want to remove from basket\n")
list_fruits.remove(remMem)
print(list_fruits)
#exer4
list_fruits.sort()
print(list_fruits)
#exer5
print(list_fruits[2])
print(list_fruits[4])
```

Output)



```
PythonProject1 > Version control > Current File > datastructures1.py x
Project > PythonProject1 C:\Users\hp\P... > .venv > Datastructures > datastructures1.py
1 '''Exercise 1: Create a list of 5 fruits and print them
2 # Exercise 2: Add an item to the end of the list
3 # Exercise 3: Remove a specific item from the list
4 # Exercise 4: Sort the list in alphabetical order
5 # Exercise 5: Access the 2nd and 4th items using indexing'''
6
7 #exer1
8 list_fruits=['apple','banana','custard apple',"grapes","mango"]
9 print("fruits in basket are :")
10 for i in list_fruits:
11     print(i)
12
13 #exer2
14 newMem=input("add any fruit into ur basket\n")
15 list_fruits.append(newMem)
16 print(list_fruits)
17
18 #exer3
19 remMem=input("enter fruit u want to remove from basket\n")
20 list_fruits.remove(remMem)
21 print(list_fruits)
22
23 #exer4
24 list_fruits.sort()
25 print(list_fruits)
26
27 #exer5
28 print(list_fruits[2])
29 print(list_fruits[4])
Run datastructures1 x
C:\Users\hp\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\hp\PyCharmProjects\PythonProject1\Datastructures\datastructures1.py
fruits in basket are :
apple
banana
custard apple
grapes
mango
add any fruit into ur basket
guvava
['apple', 'banana', 'custard apple', 'grapes', 'mango', 'guvava']
enter fruit u want to remove from basket
banana
['apple', 'custard apple', 'grapes', 'mango', 'guvava']
['apple', 'custard apple', 'grapes', 'guvava', 'mango']
grapes
mango
Process finished with exit code 0
PythonProject1 > Datastructures > datastructures1.py 1:1 (713 chars, 24 line breaks) CRLF UTF-8 4 spaces Python 3.13 (PyCharmMiscProject)
```

```

'''Exercise 6: Create a tuple with 3 numbers and print it
# Exercise 7: Try changing an item in a tuple (expect an error)
# Exercise 8: Unpack a tuple into 3 variables
# Exercise 9: Convert a tuple to a list and modify an item'''

#exer6
tup_1=(1,2,4)
print("numbers in tuple are:")
for i in tup_1:
    print(i)
#exer7
# tup_1[2]=3          //this part of code throws
# print(tup_1)        //error
#exer8
print("printing values by unaoacking tuple:")
a,b,c=tup_1
print(a)
print(b)
print(c)
#exer9
print("Converting a tuple to a list and modify an item")
list_1=list(tup_1)
list_1[2]=3
print(list_1)

```

Output)

The screenshot shows the PyCharm IDE interface. The top toolbar includes buttons for running and debugging. The left sidebar shows the project structure with 'PythonProject1' and its subfolders. The main editor window displays the code from the previous block. The bottom pane shows the output of the script execution, which matches the expected results for the exercises.

```

Run C:\Users\hp\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\hp\PyCharmProjects\PythonProject1\Datastructures\datastrucures2.py
numbers in tuple are:
1
2
4
printing values by unaoacking tuple:
1
2
4
Converting a tuple to a list and modify an item
[1, 2, 3]
Process finished with exit code 0

```

```

'''Exercise 10: Create a set of numbers with duplicates and print it (observe
how duplicates are removed)
# Exercise 11: Add a new element to the set
# Exercise 12: Remove an element (use discard to avoid errors)
# Exercise 13: Find the union and intersection of two sets'''
#exer10
print("values in set after deleting duplicates")
set_1={1,2,3,4,5,5,4,3,2,1,6,7,8,9,12,0}
print(set_1)
#exer11
print("adding a new element into set_1 and printing")
set_1.add(14)
print(set_1)
#exer12
print("Removeing an element 0 useing discard to avoid errors")
set_1.discard(0)
print(set_1)
#exer13
set_2={1,2,3,3,4,5,6,9,67,19,77}
print("union of set1 and set 2")
print(set_1.union(set_2))
print("intersection of set1 and set 2")
print(set_1.intersection(set_2))

```

Output

The screenshot shows the PyCharm IDE interface. The top pane displays the code for `datastructures3.py`, which includes exercises 10 through 13. The bottom pane shows the output of the script, which prints the set after removing duplicates, adds a new element, removes an element, and then prints the union and intersection of two sets. The process finished with exit code 0.

```

C:\Users\hp\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\hp\PyCharmProjects\PythonProject1\Datastructures\datastructures3.py
values in set after deleting duplicates
{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 12}
adding a new element into set_1 and printing
{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 12, 14}
Removeing an element 0 useing discard to avoid errors
{1, 2, 3, 4, 5, 6, 7, 8, 9, 12, 14}
union of set1 and set 2
{1, 2, 3, 4, 5, 6, 7, 8, 9, 67, 12, 77, 14, 19}
intersection of set1 and set 2
{1, 2, 3, 4, 5, 6, 9}

Process finished with exit code 0

```

```

'''Exercise 14: Create a dictionary with keys: name, age, city
# Exercise 15: Access and print the value of 'city'
# Exercise 16: Add a new key 'email' to the dictionary
# Exercise 17: Update the age to a new value
# Exercise 18: Delete the 'city' key from the dictionary'''

#exer14
details={"name":"abhijithsai","age":23,"city":"Hyderabad"}
print(details)
#exer15
print("Access and printing the value of 'city'")
print(details["city"])
#exer16
print("Adding a new key 'email' to the dictionary")
details["email"]="abhijith963@gmail.com"
print(details)
#exer17
print("Updating the age to a new value")
details["age"]=18
print(details)
#exer18
print("Deleting the 'city' key from the dictionary")
del details["city"]
print(details)

```

Output

The screenshot shows the PyCharm IDE interface. The top toolbar includes buttons for running and debugging. The left sidebar shows the project structure with files like `datastructure4.py`. The main editor window displays the Python code. The bottom Run console shows the following output:

```

C:\Users\hp\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\hp\PyCharmProjects\PythonProject1\Datastructures\datastructure4.py
{'name': 'abhijithsai', 'age': 23, 'city': 'Hyderabad'}
Access and printing the value of 'city'
Hyderabad
Adding a new key 'email' to the dictionary
{'name': 'abhijithsai', 'age': 23, 'city': 'Hyderabad', 'email': 'abhijith963@gmail.com'}
Updating the age to a new value
{'name': 'abhijithsai', 'age': 18, 'city': 'Hyderabad', 'email': 'abhijith963@gmail.com'}
Deleting the 'city' key from the dictionary
{'name': 'abhijithsai', 'age': 18, 'email': 'abhijith963@gmail.com'}

Process finished with exit code 0

```

The status bar at the bottom indicates the file is `datastructure4.py`, 1:1 (730 chars, 23 line breaks), CRLF, UTF-8, 4 spaces, Python 3.13 (PyCharmMiscProject).