

Unit 1.2 Graded Assignment: 1

Instructions:

Write a dataclass describing a mountain (containing fields for name and elevation) and:

- Construct an instance of the dataclass
- Convert it to string

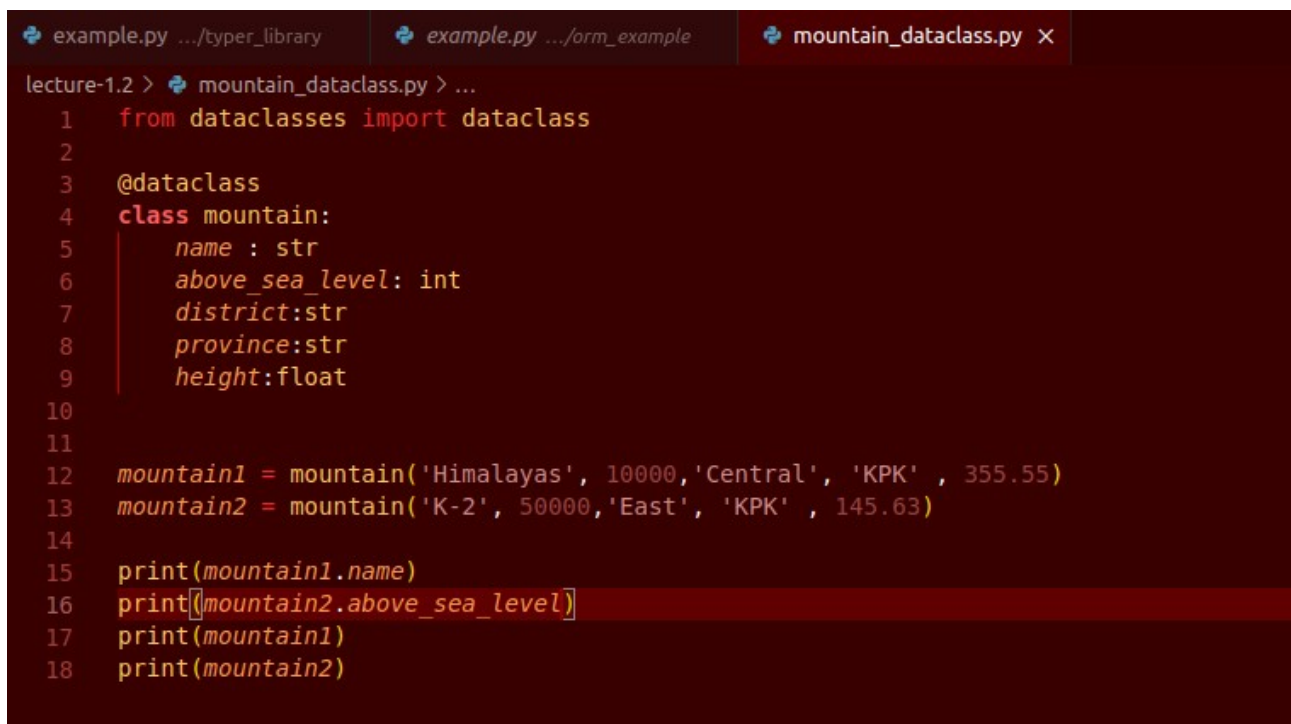
Submitted By:

1. Ali Nasir (2303.KHI.DEG.012)
2. Syed Muhammad Hammad Irshad (2303.KHI.DEG.032)

Solution:

In this assignment we have implemented dataclass library that is describing a mountain class. In the mountain class we have multiple variable like name, above sea level and etc these variables are define as string and integers. An @dataclass annotation was used to implement the function which directly initialize the class without requiring a constructor.

1. First we have imported dataclass library, then we have built a class name mountain, with different variables.

A screenshot of a code editor with a dark theme. The editor has three tabs at the top: 'example.py .../typer_library', 'example.py .../orm_example', and 'mountain_dataclass.py x'. The active tab is 'mountain_dataclass.py'. The code is as follows:

```
lecture-1.2 > mountain_dataclass.py > ...
1  from dataclasses import dataclass
2
3  @dataclass
4  class mountain:
5      name : str
6      above_sea_level: int
7      district:str
8      province:str
9      height:float
10
11
12  mountain1 = mountain('Himalayas', 10000,'Central', 'KPK' , 355.55)
13  mountain2 = mountain('K-2', 50000,'East', 'KPK' , 145.63)
14
15  print(mountain1.name)
16  print(mountain2.above_sea_level)
17  print(mountain1)
18  print(mountain2)
```

2. In the second step we have pass values into the mountain class,and print them out:

```
mountain1 = mountain('Himalayas', 10000,'Central', 'KPK' , 355.55)
mountain2 = mountain('K-2', 50000,'East', 'KPK' , 145.63)
print(mountain1.name)
print(mountain2.above_sea_level)
print(mountain1)
print(mountain2)
```

```
lecture-1.2 > mountain_dataclass.py > ...
1 from dataclasses import dataclass
2
3 @dataclass
4 class mountain:
5     name : str
6     above_sea_level: int
7     district:str
8     province:str
9     height:float
10
11
12 mountain1 = mountain('Himalayas', 10000,'Central', 'KPK' , 355.55)
13 mountain2 = mountain('K-2', 50000,'East', 'KPK' , 145.63)
14
15 print(mountain1.name)
16 print(mountain2.above_sea_level)
17 print(mountain1)
18 print(mountain2)
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL Python Debug Console

```
ali@ali-MS-7035:~/Desktop/emertus-lecture$ /usr/bin/env /bin/python3 /home/ali/.vscode/extensions/ms-python.python-2023.6.0/pythonFiles/lib/python/debugpy/adapter/../../debugpy/launcher 50143 -- /home/ali/Desktop/emertus-lecture/lecture-1.2/mountain_dataclass.py
Himalayas
50000
mountain(name='Himalayas', above_sea_level=10000, district='Central', province='KPK', height=355.55)
mountain(name='K-2', above_sea_level=50000, district='East', province='KPK', height=145.63)
ali@ali-MS-7035:~/Desktop/emertus-lecture$
```

3. The second task was to convert it into str which is also performed:

```
lecture-1.2 > mountain_dataclass.py > ...
1 from dataclasses import dataclass
2
3 @dataclass
4 class mountain:
5     name : str
6     above_sea_level: int
7     district:str
8     province:str
9     height:float
10
11
12 mountain1 = mountain('Himalayas', 10000,'Central', 'KPK' , 355.55)
13 mountain2 = mountain('K-2', 50000,'East', 'KPK' , 145.63)
14 strr = str(mountain2.above_sea_level)
15 method_strr = str(mountain1)
16 print(mountain1.name)
17
18 print(type(strr))
19 print(type(method_strr))
20
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL Python Debug Console

```
ali@ali-MS-7035:~/Desktop/emertus-lecture$ cd /home/ali/Desktop/emertus-lecture ; /usr/bin/env /bin/python3 /home/ali/.vscode/extensions/ms-python.python-2023.6.0/pythonFiles/lib/python/debugpy/adapter/../../debugpy/launcher 48157 -- /home/ali/Desktop/emertus-lecture/lecture-1.2/mountain_dataclass.py
Himalayas
<class 'str'>
<class 'str'>
ali@ali-MS-7035:~/Desktop/emertus-lecture$
```