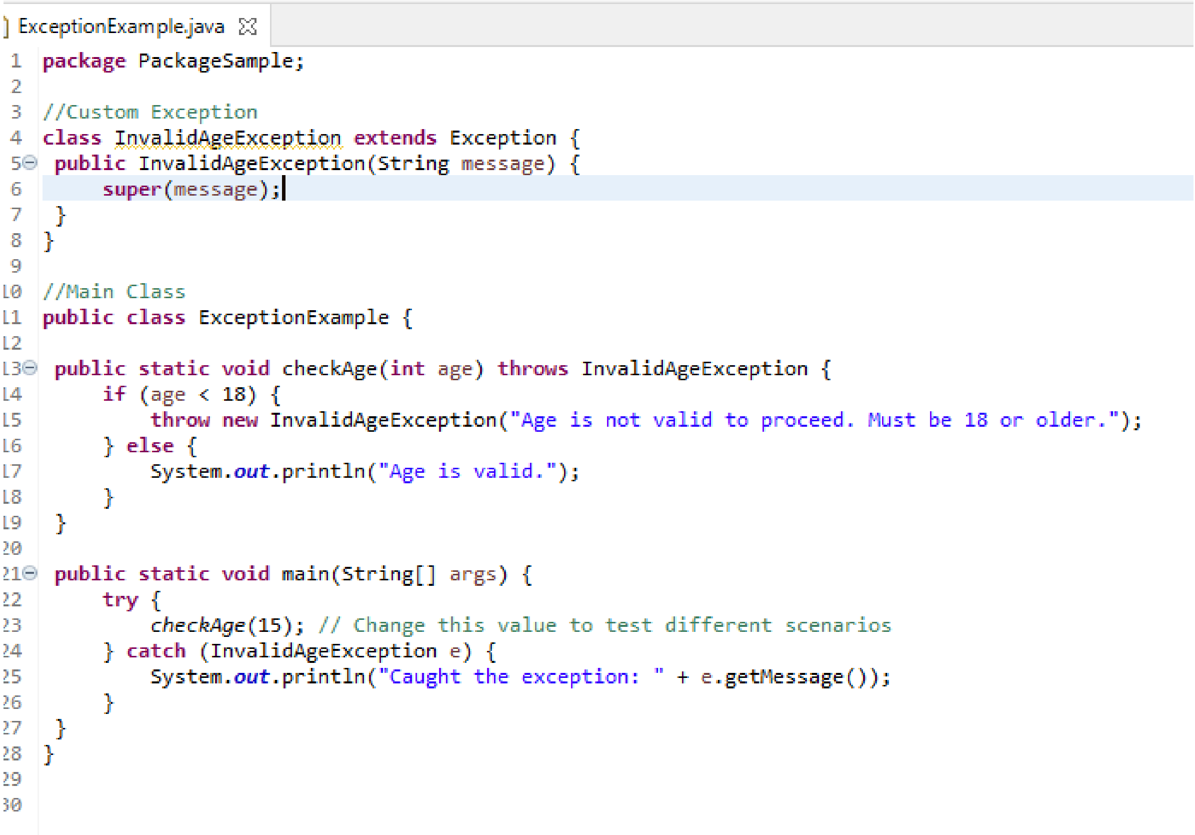
Name: Sownthari R P

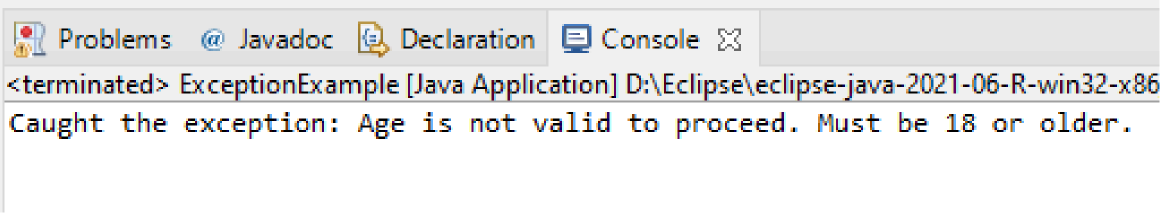
Date: 14.08.2024

1.Create a Java class with user defined exception handling



```java
package PackageSample;

//Custom Exception
class InvalidAgeException extends Exception {
    public InvalidAgeException(String message) {
        super(message);
    }
}

//Main Class
public class ExceptionExample {

    public static void checkAge(int age) throws InvalidAgeException {
        if (age < 18) {
            throw new InvalidAgeException("Age is not valid to proceed. Must be 18 or older.");
        } else {
            System.out.println("Age is valid.");
        }
    }

    public static void main(String[] args) {
        try {
            checkAge(15); // Change this value to test different scenarios
        } catch (InvalidAgeException e) {
            System.out.println("Caught the exception: " + e.getMessage());
        }
    }
}


```

Output:



```
<terminated> ExceptionExample [Java Application] D:\Eclipse\eclipse-java-2021-06-R-win32-x86
Caught the exception: Age is not valid to proceed. Must be 18 or older.
```

2.Modify below sorted list of user with name, age and height such that age can be descending and height as ascending using python

“people = [

(&#39;Arun&#39;, 30, 160),

(&#39;Black&#39;, 25, 175),

(&#39;Carter&#39;, 30, 170),

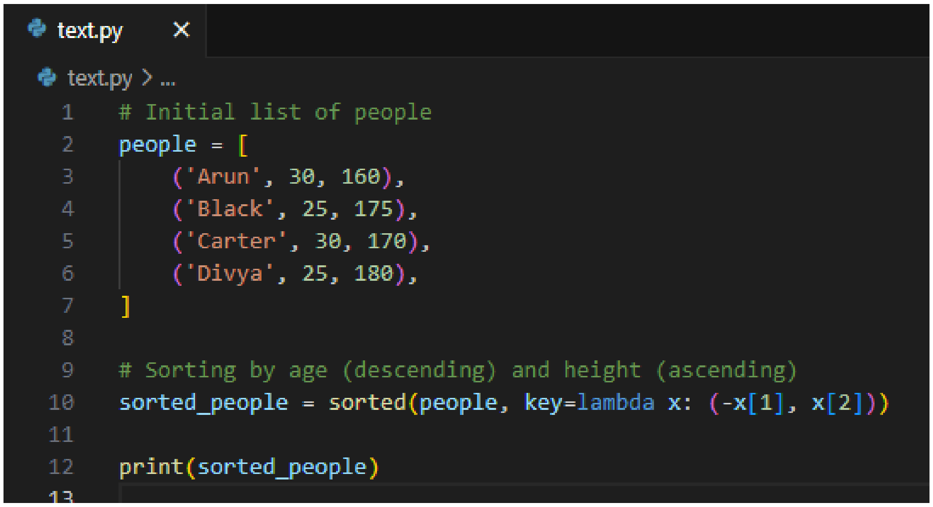
(&#39;Divya&#39;, 25, 180),

]

# Sort by age (ascending) and then by height (descending)

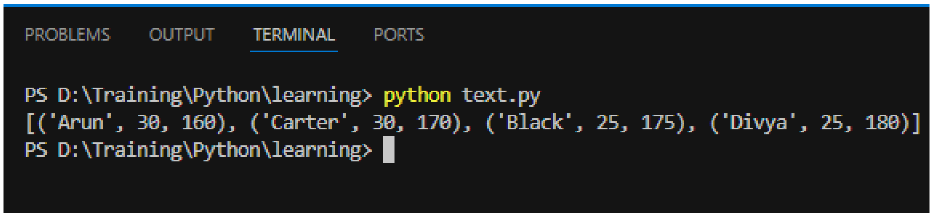
sorted_people = sorted(people, key=lambda x: (x[1], -x[2]))

print(sorted_people)”



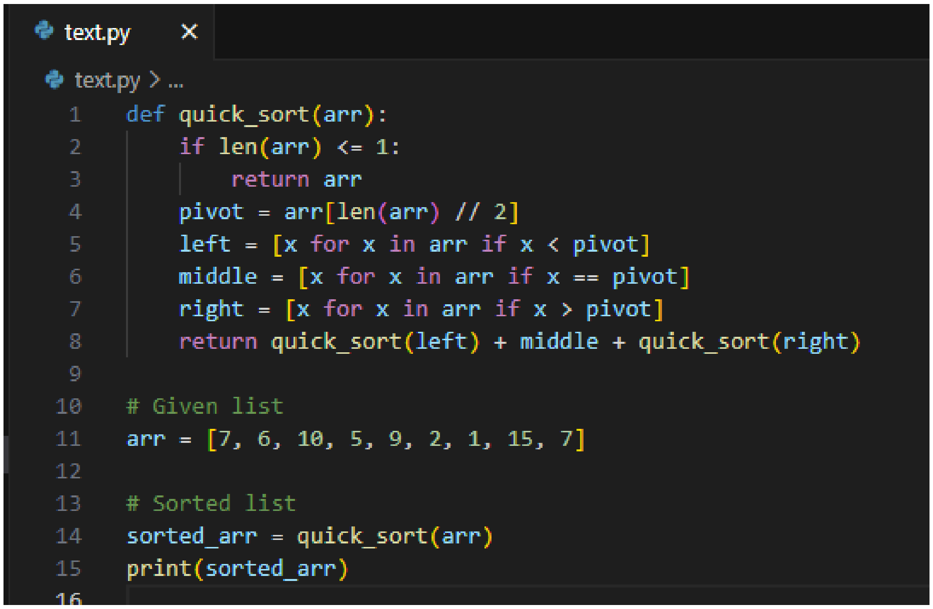
```python
# Initial list of people
people = [
    ('Arun', 30, 160),
    ('Black', 25, 175),
    ('Carter', 30, 170),
    ('Divya', 25, 180),
]

# Sorting by age (descending) and height (ascending)
sorted_people = sorted(people, key=lambda x: (-x[1], x[2]))

print(sorted_people)
```

Output:



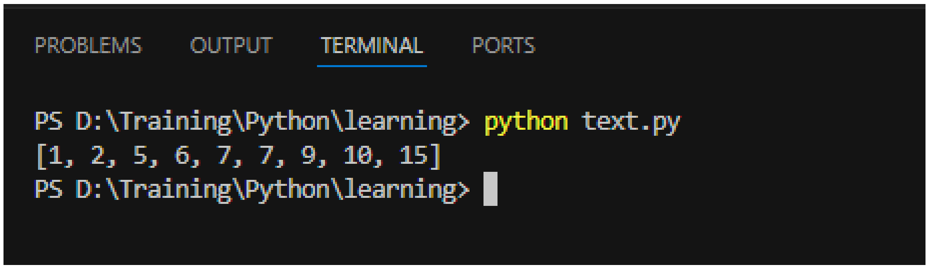
```
PS D:\Training\Python\learning> python text.py
[('Arun', 30, 160), ('Carter', 30, 170), ('Black', 25, 175), ('Divya', 25, 180)]
PS D:\Training\Python\learning> 
```

3. Implement quick sort and display sorted values for [7,6,10,5,9,2,1,15,7] using python



```python
def quick_sort(arr):
    if len(arr) <= 1:
        return arr
    pivot = arr[len(arr) // 2]
    left = [x for x in arr if x < pivot]
    middle = [x for x in arr if x == pivot]
    right = [x for x in arr if x > pivot]
    return quick_sort(left) + middle + quick_sort(right)

# Given list
arr = [7, 6, 10, 5, 9, 2, 1, 15, 7]

# Sorted list
sorted_arr = quick_sort(arr)
print(sorted_arr)
```

Output:



```
PS D:\Training\Python\learning> python text.py
[1, 2, 5, 6, 7, 7, 9, 10, 15]
PS D:\Training\Python\learning>
```