

14 – DAY – TASK (13-08-2024)

1. Create a Java class with user defined exception handling

Code:

UserException.java File:

```
package task;

public class UserException extends Exception {
    /**
     *
     */
    private static final long serialVersionUID = -6327011303529182059L;

    public UserException(String message) {
        super(message);
    }
}
```

Main.java File:

```
package task;

public class Main {

    public static int riskyOperation(int value) throws UserException {
        if (value < 0) {

            throw new UserException("Value cannot be negative.");
        }
        return value * 2;
    }

    public static void main(String[] args) {
        try {

            int result = riskyOperation(-5);
            System.out.println("Result: " + result);
        }
    }
}
```

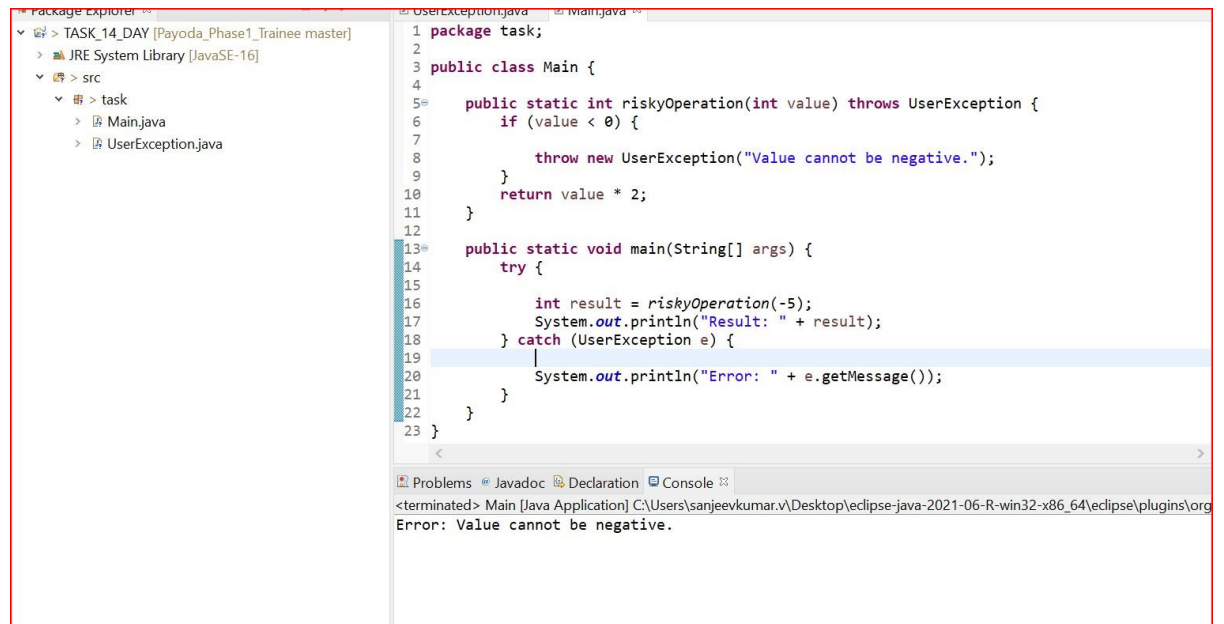
```

    } catch (UserException e) {

        System.out.println("Error: " + e.getMessage());
    }
}
}

```

Output:



```

1 package task;
2
3 public class Main {
4
5     public static int riskyOperation(int value) throws UserException {
6         if (value < 0) {
7             throw new UserException("Value cannot be negative.");
8         }
9         return value * 2;
10    }
11
12    public static void main(String[] args) {
13        try {
14            int result = riskyOperation(-5);
15            System.out.println("Result: " + result);
16        } catch (UserException e) {
17            System.out.println("Error: " + e.getMessage());
18        }
19    }
20 }
21
22
23

```

Problems Javadoc Declaration Console

<terminated> Main [Java Application] C:\Users\sanjeevkumar.v\Desktop\eclipse-java-2021-06-R-win32-x86_64\eclipse\plugins\org

Error: Value cannot be negative.

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 = [ ('Arun', 30, 160), ('Black', 25, 175), ('Carter', 30, 170), ('Divya', 25, 180)]

```

Code:

```

people = [
    ('Arun', 30, 160),
    ('Black', 25, 175),
    ('Carter', 30, 170),
    ('Divya', 25, 180),
]

```

```

people.sort(key=lambda x: (-x[1], x[2]))

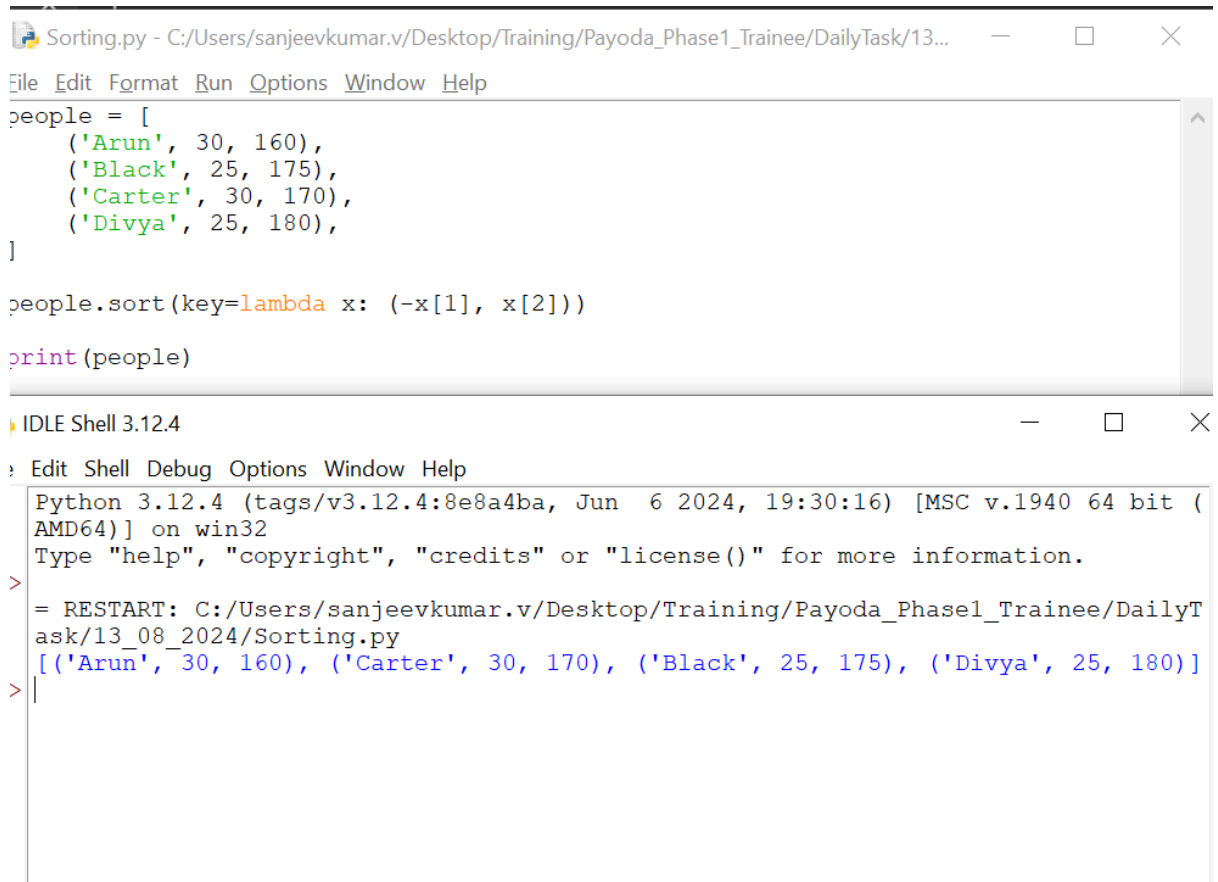
```

```

print(people)

```

Output:



The screenshot shows a Python IDE window titled 'Sorting.py' with the following code:

```
people = [
    ('Arun', 30, 160),
    ('Black', 25, 175),
    ('Carter', 30, 170),
    ('Divya', 25, 180),
]

people.sort(key=lambda x: (-x[1], x[2]))

print(people)
```

Below the code editor is the 'IDLE Shell 3.12.4' window, which displays the output of the script:

```
Python 3.12.4 (tags/v3.12.4:8e8a4ba, Jun 6 2024, 19:30:16) [MSC v.1940 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>
= RESTART: C:/Users/sanjeevkumar.v/Desktop/Training/Payoda_Phase1_Trainee/DailyTask/13_08_2024/Sorting.py
[('Arun', 30, 160), ('Carter', 30, 170), ('Black', 25, 175), ('Divya', 25, 180)]
> |
```

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

Code:

package task;

```
public class QuickSort {
```

```
    public static void quickSort(int[] arr, int low, int high) {
        if (low < high) {
            int pi = partition(arr, low, high);
            quickSort(arr, low, pi - 1);
            quickSort(arr, pi + 1, high);
        }
    }
}
```

```
    private static int partition(int[] arr, int low, int high) {
```

```

    int pivot = arr[high];
    int i = low - 1;
    for (int j = low; j < high; j++) {
        if (arr[j] <= pivot) {
            i++;
            int temp = arr[i];
            arr[i] = arr[j];
            arr[j] = temp;
        }
    }
    int temp = arr[i + 1];
    arr[i + 1] = arr[high];
    arr[high] = temp;

    return i + 1;
}

public static void main(String[] args) {
    int[] numbers = {7, 6, 10, 5, 9, 2, 1, 15, 7};

    quickSort(numbers, 0, numbers.length - 1);

    System.out.println("Sorted array:");
    for (int num : numbers) {
        System.out.print(num + " ");
    }
}
}

```

Output:

