

STREAM API ASSIGNMENT

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1) Fruit class:

```
1 public class fruit {
2     String name;
3     int calories;
4     int price;
5     String colour;
6     public fruit(String name, int calories, int price, String colour) {
7         super();
8         this.name = name;
9         this.calories = calories;
10        this.price = price;
11        this.colour = colour;}
12    public String getName() {
13        return name;}
14
15    public void setName(String name) {
16        this.name = name;}
17
18    public int getCalories() {
19        return calories;}
20
21    public void setCalories(int calories) {
22        this.calories = calories;}
23
24    public int getPrice() {
25        return price;}
26    public void setPrice(int price) {
27        this.price = price;}
28    public String getColour() {
29        return colour;}
30    public void setColour(String colour) {
31        this.colour = colour;}
32    public String toString()
33    {
34        return ("name:" + name + "calories:" + calories + "price:" + price + "colour:" + colour);
35    }
36 }
37 }
```

```
1 import java.util.ArrayList;
5 public class fruitsort{
6     public static void main(String[] args) {
7
8         List<fruit> Stream=new ArrayList<>();
9         Stream.add(new fruit("Apple",100,50,"Red"));
10        Stream.add(new fruit("Mango",200,100,"Yellow"));
11        Stream.add(new fruit("Orange",50,600,"Orange"));
12        Stream.add(new fruit("Guava",60,50,"Green"));
13        Stream.add(new fruit("Cherry",70,90,"Red"));
14        Stream.add(new fruit("Chichoo",50,50,"Brown"));
15        Stream.add(new fruit("Guava",90,50,"Green"));
16
17
18        //Que1
19        System.out.println("Sorted By Calories less than 100 in Descending Order: \n");
20        Stream<fruit> listSorted = Stream.stream().sorted(Comparator.comparingLong(fruit::getCalories).reversed()).filter(p -> p.getCalories()<100);
21
22        listSorted.forEach(p -> System.out.println("FruitName: "+p.getName()+ "," + " Calories: "+p.getCalories()+ "," +
23        " Price: "+p.getPrice()+ "," + " Colour: "+p.colour));
24        //Que2
25        System.out.println("\nColour wise fruit names:\n");
26        Stream<fruit> listsorted2=Stream.stream().sorted(Comparator.comparing(fruit::getColour));
27        listsorted2.forEach(p -> System.out.println("FruitName: "+p.getName()+ "," + " Calories: "+p.getCalories()+ "," +
28        " Price: "+p.getPrice()+ "," + " Colour: "+p.colour));
29
30        //Que3
31        System.out.println("\nSorted Red Colour fruit as per the price\n");
32        Stream<fruit> listSorted1 = Stream.stream().sorted(Comparator.comparingLong(fruit::getPrice)).filter(p -> p.getColour().matches("Red"));
33
34        listSorted1.forEach(p -> System.out.println("FruitName: "+p.getName()+ "," + " Calories: "+p.getCalories()+ "," +
35        " Price: "+p.getPrice()+ "," + " Colour: "+p.colour));
36
37    }
38 }
39 }
```

Output:

```
Problems Javadoc Declaration Console Error Log
<terminated> fruitsort [Java Application] C:\Program Files\Java\jdk-13.0.2\bin\javaw.exe (12-Aug-202
Sorted By Calories less than 100 in Descending Order:

FruitName: Guava, Calories: 90, Price: 50, Colour: Green
FruitName: Cherry, Calories: 70, Price: 90, Colour: Red
FruitName: Guava, Calories: 60, Price: 50, Colour: Green
FruitName: Orange, Calories: 50, Price: 600, Colour: Orange
FruitName: Chichoo, Calories: 50, Price: 50, Colour: Brown

Colour wise fruit names:

FruitName: Chichoo, Calories: 50, Price: 50, Colour: Brown
FruitName: Guava, Calories: 60, Price: 50, Colour: Green
FruitName: Guava, Calories: 90, Price: 50, Colour: Green
FruitName: Orange, Calories: 50, Price: 600, Colour: Orange
FruitName: Apple, Calories: 100, Price: 50, Colour: Red
FruitName: Cherry, Calories: 70, Price: 90, Colour: Red
FruitName: Mango, Calories: 200, Price: 100, Colour: Yellow

Sorted Red Colour fruit as per the price

FruitName: Apple, Calories: 100, Price: 50, Colour: Red
FruitName: Cherry, Calories: 70, Price: 90, Colour: Red
```

4)News Class:

```
1 class News {
2
3     int newsId;
4     String postedByUser;
5     String commentByUser;
6     String comment;
7     public News(int newsId, String postedByUser, String commentByUser, String comment) {
8         super();
9         this.newsId = newsId;
10        this.postedByUser = postedByUser;
11        this.commentByUser = commentByUser;
12        this.comment = comment;
13    }
14    public int getNewsId() {
15        return newsId;
16    }
17    public void setNewsId(int newsId) {
18        this.newsId = newsId;
19    }
20    public String getPostedByUser() {
21        return postedByUser;
22    }
23    public void setPostedByUser(String postedByUser) {
24        this.postedByUser = postedByUser;
25    }
26    public String getCommentByUser() {
27        return commentByUser;
28    }
29    public void setCommentByUser(String commentByUser) {
30        this.commentByUser = commentByUser;
31    }
32    public String getComment() {
33        return comment;
34    }
35    public void setComment(String comment) {
36        this.comment = comment;
37    }
38
39    public String toString() {
40        return "News [newsId" + newsId + ", postedByUser=" + postedByUser + ", commentByUser=" + commentByUser + ", comment=" + comment + "]\n";
41    }
42 }
43
```



```
mockito-example1/pom.xml *Newsjava *SortNewsjava
1 import java.util.ArrayList;
2 public class SortNews {
3     public static void main(String[] args) {
4         List<News> list=new ArrayList<>();
5         list.add(new News(1,"Shruti","Sakshi","Your post is so good"));
6         list.add(new News(2,"Rohit","Amit","Your Budget is going too long"));
7         list.add(new News(3,"Akash","Ritesh","What is the Budget of this project"));
8         list.add(new News(1,"Shruti","Ritesh","I didnt like your post"));
9         list.add(new News(1,"Shruti","Megha","I like your Idea But Budget is too high"));
10        list.add(new News(1,"Shruti","Ritesh","I like your Idea But Budget is too high"));
11        //Que4
12        int I=0;
13        for(News i:list) {
14            if(i.getComment().length()>I) {
15                I=i.getComment().length();
16            }
17        }
18        for(News i:list) {
19            if(i.getComment().length()==I) {
20                System.out.println("NewsId which has received a maximum comments is "+i.getNewsId());
21            }
22        }
23        System.out.println("=====");
24        //Que5
25        Long count=list.stream().filter(p -> p.getComment().contains("Budget")).count();
26        System.out.println("\nBudget word appeared in the comments "+count+" times");
27        //Que6
28        List<String> list1 =new ArrayList<String>();
29        for(News i:list) {
30            list1.add(i.getCommentByUser());
31        }
32    }
33 }
34 }
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```

```

1 import java.util.ArrayList;
2
3 public class SortTrader {
4     public static void main(String[] args) {
5         List<Trader> trade=new ArrayList<>();
6         trade.add(new Trader("Shruti","Mumbai"));
7         trade.add(new Trader("Ritesh","Pune"));
8         trade.add(new Trader("Swarda","Aurangabad"));
9         trade.add(new Trader("Teju","Pune"));
10        trade.add(new Trader("Piu","Indore"));
11        trade.add(new Trader("Akash","Khed"));
12        trade.add(new Trader("Yogesh","Chiplun"));
13        trade.add(new Trader("Sanket","Delhi"));
14        trade.add(new Trader("Bunty","Aurangabad"));
15        trade.add(new Trader("Akshay","Delhi"));
16        trade.add(new Trader("Aish","Aurangabad"));
17        //Que10
18        Stream<Trader> sorted = trade.stream().filter(p -> p.getCity().equals("Pune")).sorted(Comparator.comparing(Trader :: getName));
19        sorted.forEach(p -> System.out.println("Name: " +p.getName()+ " city: "+p.getCity()));
20        System.out.println("=====");
21        //Que12
22        Stream<Trader> sorted1 = trade.stream().filter(p -> p.getCity().equals("Indore"));
23        sorted1.forEach(p -> System.out.println("Name: " +p.getName()+ " city: "+p.getCity()));
24        System.out.println("=====");
25        //Que11
26        Stream<Trader> sorted2 = trade.stream().sorted(Comparator.comparing(Trader :: getName));
27        sorted2.forEach(p -> System.out.println("Name: " +p.getName()+ " city: "+p.getCity()));
28        System.out.println("=====");
29        //Que9
30        Stream<Trader> sorted3 = trade.stream().filter(DistinctCustomPropertyExample.distinctByKey(p -> p.getCity()));
31        sorted3.forEach(p -> System.out.println("Name: " +p.getName()+ " city: "+p.getCity()));
32    }
33
34 }

```

```

1 import java.util.Map;
2
3 public class DistinctCustomPropertyExample {
4     public static <T> Predicate<T> distinctByKey(Function<? super T,Object> keyExtractor){
5         Map<Object, Boolean> uniqueMap = new ConcurrentHashMap<>();
6         return t -> uniqueMap.putIfAbsent(keyExtractor.apply(t), Boolean.TRUE) == null;
7     }
8 }

```

Output:

```

Console ✕
<terminated> SortTrader [Java Application] C:\Program Files\Java\jdk-13.0.
Name:Ritesh city: Pune
Name:Teju city: Pune
=====
Name:Piu city: Indore
=====
Name: Aish city: Aurangabad
Name: Akash city: Khed
Name: Akshay city: Delhi
Name: Bunty city: Aurangabad
Name: Piu city: Indore
Name: Ritesh city: Pune
Name: Sanket city: Delhi
Name: Shruti city: Mumbai
Name: Swarda city: Aurangabad
Name: Teju city: Pune
Name: Yogesh city: Chiplun
=====
Name: Shruti city: Mumbai
Name: Ritesh city: Pune
Name: Swarda city: Aurangabad
Name: Piu city: Indore
Name: Akash city: Khed
Name: Yogesh city: Chiplun
Name: Sanket city: Delhi

```


4)Transaction:

```
1 public class Transaction{
2
3     final Trader trader;
4     final int year;
5     private final int value;
6
7     public Transaction(Trader trader, int year, int value){
8         this.trader = trader;
9         this.year = year;
10        this.value = value;
11    }
12
13    public Trader getTrader(){
14        return this.trader;
15    }
16
17    public int getYear(){
18        return this.year;
19    }
20
21    public int getValue(){
22        return this.value;
23    }
24
25    public String toString(){
26        return "{" + this.trader + ", " +
27            "year: " + this.year + ", " +
28            "value: " + this.value + "}";
29    }
30 }
```

```
1 import java.util.ArrayList;
2
3 public class Transort {
4
5     public static void main(String[] args) {
6         Trader t1 = new Trader("Shruti", "Mumbai");
7         Trader t2 = new Trader("Ritesh", "Pune");
8         Trader t3 = new Trader("Akash", "Delhi");
9         Trader t4 = new Trader("Swarda", "Delhi");
10        Trader t5 = new Trader("Shital", "Roha");
11        Trader t6 = new Trader("Anu", "Mumbai");
12        Trader t7 = new Trader("Piu", "Delhi");
13
14        Transaction T1=new Transaction(t1,2011,4000);
15        Transaction T2=new Transaction(t2,2010,4000);
16        Transaction T3=new Transaction(t3,2014,4000);
17        Transaction T4=new Transaction(t4,2011,4000);
18        Transaction T5=new Transaction(t5,2015,4000);
19        Transaction T6=new Transaction(t6,2016,4000);
20        Transaction T7=new Transaction(t7,2011,4000);
21
22        List<Transaction> trans=new ArrayList<>();
23        trans.add(T1);
24        trans.add(T2);
25        trans.add(T3);
26        trans.add(T4);
27        trans.add(T5);
28        trans.add(T6);
29        trans.add(T7);
30
31        //Que 8
32        System.out.println("-----TRANSACTION IN YEAR 2011-----");
33        List<Transaction> Year2011=trans.stream().filter(P -> P.year==2011).sorted(Comparator.comparing(Transaction::getValue))
34            .collect(Collectors.toList());
35        Year2011.forEach(System.out::println);
36    }
37 }
```

```

42 //Que14
43 System.out.println("\n"+"-----Highest TRANSACTION-----");
44 Transaction Max=trans.stream().max(Comparator.comparing(Transaction::getValue)).get();
45 System.out.println(Max);
46
47 //Que15
48 System.out.println("\n"+"-----Lowest TRANSACTION-----");
49 Transaction Min=trans.stream().min(Comparator.comparing(Transaction::getValue)).get();
50 System.out.println(Min);
51
52 //Que13
53 System.out.println("\n"+"-----TRANSACTION OF TRADER FROM DELHI-----");
54 List<Transaction> FromDelhi=trans.stream().filter(P -> P.trader.getCity().equals("Delhi")).collect(Collectors.toList());
55 FromDelhi.forEach(System.out::println);
56
57
58
59
60 }
61 }
62

```

Console Problems Debug Shell

<terminated> Transort [Java Application] C:\Program Files\Java\jdk-13.0.2\bin\javaw.exe (13-Aug-2021, 10:32:56 pm – 10:32:58 pm)

```

-----TRANSACTION IN YEAR 2011-----
{Trader [name=Shruti, City=Mumbai], year: 2011, value:4000}
{Trader [name=Swarda, City=Delhi], year: 2011, value:4000}
{Trader [name=Piu, City=Delhi], year: 2011, value:4000}

-----Highest TRANSACTION-----
{Trader [name=Shruti, City=Mumbai], year: 2011, value:4000}

-----Lowest TRANSACTION-----
{Trader [name=Shruti, City=Mumbai], year: 2011, value:4000}

-----TRANSACTION OF TRADER FROM DELHI-----
{Trader [name=Akash, City=Delhi], year: 2014, value:4000}
{Trader [name=Swarda, City=Delhi], year: 2011, value:4000}
{Trader [name=Piu, City=Delhi], year: 2011, value:4000}

```