Java Core Assignment -8 – Tanaya Jadhav

@FunctionalInterface  
interface Addition{  
 int add(int a, int b);  
}  
@FunctionalInterface  
interface Substraction{  
 int sub(int a, int b);  
}  
@FunctionalInterface  
interface Multiplication{  
 int mul(int a, int b);  
}  
@FunctionalInterface  
interface Division{  
 int div(int a, int b);  
}  
  
  
public class LambdaExpression {  
 public static void main(String[] args){  
 Addition ad = (a,b)->(a+b);  
 System.*out*.println("Addition= "+ad.add(57,78));  
  
 Substraction sb = (a, b) -> (a-b);  
 System.*out*.println("Substraction= "+sb.sub(900,567));  
  
 Multiplication mu = (a, b) -> (a\*b);  
 System.*out*.println("Multiplication= "+mu.mul(56,76));  
  
 Division di = ((a, b) -> (a/b));  
 System.*out*.println("Divsion= "+di.div(900,10));  
  
 }  
}

Output:-

"C:\Program Files\Java\jdk-16.0.2\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.2\lib\idea\_rt.jar=55257:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.2\bin" -Dfile.encoding=UTF-8 -classpath C:\Users\Tanaya\IdeaProjects\Corejava\out\production\Javalambda8 LambdaExpression

Addition= 135

Substraction= 333

Multiplication= 4256

Divsion= 90

Process finished with exit code 0

2)

import java.util.ArrayList;  
import java.util.List;  
import java.util.stream.Stream;  
class Order{  
 int id;  
 String status;  
 float price;  
 public Order(int id, String status, float price) {  
 super();  
 this.id = id;  
 this.status = status;  
 this.price = price;  
 }  
}  
class LambdaExp2{  
 public static void main(String[] args) {  
 List<Order> list=new ArrayList<>();  
 list.add(new Order(1,"Accepted",17000f));  
 list.add(new Order(3,"Completed",650000f));  
 list.add(new Order(2,"Accepted",250000f));  
  
  
 Stream<Order> filtered\_data = list.stream().filter(p -> p.price > 20000);  
  
 filtered\_data.forEach(  
 Order -> System.*out*.println(Order.price+": "+Order.status)  
 );  
 }  
}

output:-

"C:\Program Files\Java\jdk-16.0.2\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.2\lib\idea\_rt.jar=61155:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.2\bin" -Dfile.encoding=UTF-8 -classpath C:\Users\Tanaya\IdeaProjects\Corejava\out\production\Javalambda8 LambdaExp2

650000.0: Completed

250000.0: Accepted

Process finished with exit code 0

3)

a) import java.util.\*;  
import java.util.function.Predicate;  
  
class Test  
{  
 public static void main(String args[])  
 {  
  
 List<String> names =  
 Arrays.*asList*("Tanaya","tanu","hiiii");  
 Predicate<String> p = (s)->s.startsWith("t");  
  
 for (String st:names)  
 {  
 if (p.test(st))  
 System.*out*.println(st);  
 }  
 }  
}

output:-

"C:\Program Files\Java\jdk-16.0.2\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.2\lib\idea\_rt.jar=54612:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.2\bin" -Dfile.encoding=UTF-8 -classpath C:\Users\Tanaya\IdeaProjects\Corejava\out\production\Javalambda8 Test

tanu

Process finished with exit code 0

b)

import java.util.function.Supplier;  
  
class LambdaExp {  
 public static void main(String args[])  
 {  
  
 Supplier<Double> randomValue = () -> Math.*random*();  
  
 System.*out*.println(randomValue.get());  
 }  
}

output:-

"C:\Program Files\Java\jdk-16.0.2\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.2\lib\idea\_rt.jar=64622:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.2\bin" -Dfile.encoding=UTF-8 -classpath C:\Users\Tanaya\IdeaProjects\Corejava\out\production\Javalambda8 LambdaExp

0.03772567780134539

Process finished with exit code 0

c)

import java.util.ArrayList;  
 import java.util.LinkedList;  
 import java.util.List;  
 import java.util.function.Consumer;  
  
class Main {  
 public static void main(String args[])  
 {  
 Consumer<Integer> display = a -> System.*out*.println(a);  
  
 display.accept(100);  
  
 Consumer<List<Integer> > modify = list ->  
 {  
 for (int i = 0; i < list.size(); i++)  
 list.set(i, 4 \* list.get(i));  
 };  
  
 Consumer<List<Integer> >  
 dispList = list -> list.stream().forEach(a -> System.*out*.print(a + " "));  
  
 List<Integer> list = new ArrayList<Integer>();  
 list.add(2);  
 list.add(1);  
 list.add(3);  
  
 modify.accept(list);  
 dispList.accept(list);  
 }  
}

output:-

"C:\Program Files\Java\jdk-16.0.2\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.2\lib\idea\_rt.jar=55721:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.2\bin" -Dfile.encoding=UTF-8 -classpath C:\Users\Tanaya\IdeaProjects\Corejava\out\production\Javalambda8 Main

100

8 4 12

Process finished with exit code 0

d)

import java.util.function.Function;  
  
class Main {  
 public static void main(String args[])  
 {  
 Function<Integer, Double> half = a -> a / 2.0;  
  
  
 half = half.andThen(a -> 3 \* a);  
  
 System.*out*.println(half.apply(900));  
 }  
}

output:-

"C:\Program Files\Java\jdk-16.0.2\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.2\lib\idea\_rt.jar=64071:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.2\bin" -Dfile.encoding=UTF-8 -classpath C:\Users\Tanaya\IdeaProjects\Corejava\out\production\Javalambda8 Main

1350.0

Process finished with exit code 0

4)

import java.util.\*;  
  
class ArrayListExample  
{  
 public static void main(String[] args)  
 {  
 List<String> set = new ArrayList<>(Arrays.*asList*("tanash","ijdybd","hehehehe","tanugoooooe","qwerty","qwqw"));  
 set.removeIf(p -> p.length() %2 != 0);  
 System.*out*.println("Odd lenght removed tanaya, so the final is here : "+set);  
  
  
 }  
}

output:-

"C:\Program Files\Java\jdk-16.0.2\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.2\lib\idea\_rt.jar=57488:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.2\bin" -Dfile.encoding=UTF-8 -classpath C:\Users\Tanaya\IdeaProjects\Corejava\out\production\Javalambda8 ArrayListExample

Odd lenght removed tanaya, so the final is here : [tanash, ijdybd, hehehehe, qwerty, qwqw]

Process finished with exit code 0

5)

import java.util.Arrays;  
import java.util.List;  
  
public class LambdaExp5{  
 public static void main(String[] args){  
List<String> strings = Arrays.*asList*("Tanaya", "yuvraj", "Jadhav");  
 strings.stream()  
 .map(s -> s.substring(0, 1))  
 .forEach(s -> System.*out*.println(s));  
}  
}

output:-

"C:\Program Files\Java\jdk-16.0.2\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.2\lib\idea\_rt.jar=52305:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.2\bin" -Dfile.encoding=UTF-8 -classpath C:\Users\Tanaya\IdeaProjects\Corejava\out\production\Javalambda8 LambdaExp5

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Process finished with exit code 0

6)

import java.util.ArrayList;  
import java.util.Arrays;  
import java.util.Locale;  
  
public class LambdaExp6  
{  
 public static void main(String[] args) throws CloneNotSupportedException  
 {  
 ArrayList<String> words = new ArrayList<>(Arrays.*asList*("tanaya", "yuvraj", "jadhav"));  
  
 System.*out*.println(words);  
  
 words.replaceAll( e -> e.toUpperCase() );  
  
 System.*out*.println(words);  
 }  
}

output:-

"C:\Program Files\Java\jdk-16.0.2\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.2\lib\idea\_rt.jar=57626:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.2\bin" -Dfile.encoding=UTF-8 -classpath C:\Users\Tanaya\IdeaProjects\Corejava\out\production\Javalambda8 LambdaExp6

[tanaya, yuvraj, jadhav]

[TANAYA, YUVRAJ, JADHAV]

Process finished with exit code 0

7)

import java.io.UnsupportedEncodingException;  
import java.net.URLDecoder;  
import java.net.URLEncoder;  
import java.util.HashMap;  
import java.util.Map;  
  
class MapUtil {  
 public static String mapToString(Map<String, String> map) {  
 StringBuilder stringBuilder = new StringBuilder();  
  
 for (String key : map.keySet()) {  
 if (stringBuilder.length() > 0) {  
 stringBuilder.append(",");  
 }  
 String value = map.get(key);  
 try {  
 stringBuilder.append((key != null ? URLEncoder.*encode*(key, "UTF-8") : ""));  
 stringBuilder.append(",");  
 stringBuilder.append(value != null ? URLEncoder.*encode*(value, "UTF-8") : "");  
 } catch (UnsupportedEncodingException e) {  
 throw new RuntimeException("This method requires UTF-8 encoding support", e);  
 }  
 }  
  
 return stringBuilder.toString();  
 }  
 public static void main(String[] args){  
 Map<String, String> map = new HashMap<String, String>();  
 map.put("Tanaya", "is");  
 map.put("good", "developer");  
 map.put("favorite", "all");  
 String output = MapUtil.*mapToString*(map);  
 System.*out*.println(output);  
 }  
}

output:-

"C:\Program Files\Java\jdk-16.0.2\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.2\lib\idea\_rt.jar=65180:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.2\bin" -Dfile.encoding=UTF-8 -classpath C:\Users\Tanaya\IdeaProjects\Corejava\out\production\Javalambda8;C:\Users\Tanaya\.m2\repository\junit\junit\4.13.1\junit-4.13.1.jar;C:\Users\Tanaya\.m2\repository\org\hamcrest\hamcrest-core\1.3\hamcrest-core-1.3.jar MapUtil

Tanaya,is,good,developer,favorite,all

Process finished with exit code 0

8)

import java.util.ArrayList;  
import java.util.Arrays;  
import java.util.Collections;  
import java.util.List;  
import java.util.function.Consumer;  
  
class Multi extends Thread{  
 public void run(){  
 Consumer<List<Integer> > modify = list ->  
 {  
 for (int i = 0; i < list.size(); i++)  
 list.set(i, list.get(i));  
 };  
 Consumer<List<Integer> >  
 dispList = list -> list.stream().forEach(a -> System.*out*.print(a + " "));  
  
 List<Integer> list = new ArrayList<Integer>();  
 list.add(5);  
 list.add(6);  
 list.add(7);  
 modify.andThen(dispList).accept(list);  
 ;  
  
 }  
 public static void main(String args[]){  
 Multi t1=new Multi();  
 t1.run();  
  
  
  
 }  
}

output:-

"C:\Program Files\Java\jdk-16.0.2\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.2\lib\idea\_rt.jar=60768:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2021.2\bin" -Dfile.encoding=UTF-8 -classpath C:\Users\Tanaya\IdeaProjects\Corejava\out\production\Javalambda8;C:\Users\Tanaya\.m2\repository\junit\junit\4.13.1\junit-4.13.1.jar;C:\Users\Tanaya\.m2\repository\org\hamcrest\hamcrest-core\1.3\hamcrest-core-1.3.jar Multi

5 6 7

Process finished with exit code 0