

The Java Function & Consumer Functional Interfaces: Case Study ex14

Douglas C. Schmidt

d.schmidt@vanderbilt.edu

www.dre.vanderbilt.edu/~schmidt

Professor of Computer Science

Institute for Software
Integrated Systems

Vanderbilt University
Nashville, Tennessee, USA



Learning Objectives in this Part of the Lesson

- Know how the Java Consumer & Function functional interfaces can be used to print & sort Thread objects by their names

```
var threads = Arrays  
    .asList(new MyThread("Larry"),  
            new MyThread("Curly"),  
            new MyThread("Moe"));  
  
threads.forEach(System.out::println);  
  
threads.sort(Comparator.comparing  
    (Thread::getName));  
  
threads.forEach(System.out::println);  
...
```

Applying the Java Consumer & Function Functional Interfaces

Applying the Java Consumer & Function Interfaces

The screenshot shows an IDE interface with a Java file named `ex14.java` open. The code demonstrates the use of `Consumer` and `Function` interfaces from the Java 8 Stream API.

```
static public void main(String[] argv) {
    // Create a List of Thread objects.
    var threads: List<MyThread> = Arrays
        .asList(new MyThread(name: "Larry"),
                new MyThread(name: "Curly"),
                new MyThread(name: "Moe"));

    System.out.println("Original List:");

    // forEach() takes a Consumer, which is bound to the
    // System.out println() method.
    threads.forEach(action: System.out::println);

    // Sort the Thread objects by their names in ascending order.
    threads.sort(c: Comparator.comparing(keyExtractor: Thread::getName));
}
```

The code creates a list of three `MyThread` objects and prints them to the console. It then sorts the list by name and prints it again. The `forEach` method uses a `Consumer` lambda expression to print each thread's name. The `sort` method uses a `Comparator` lambda expression to compare threads based on their names.

See github.com/douglasraigschmidt/ModernJava/tree/main/FP/ex14

End of the Java Consumer & Function Functional Interfaces: Case Study ex14