ITMD 411

Mini Project 3

SPRING 2013

SUBMITTED BY

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Project Description

The aim of the project is to design a Product- Consumer parallel design pattern. Products are produced by the Producer and the same products are consumed by the respective Consumer.

There is a single thread of Products that produces selecting random region. There are four consumer threads which are identified by the regions N, E,W and S.

Design of the Project

The project MP3 consists of 2 packages

Domain:

Consists of the following classes:

- Product.java – Product class to encompass all the fields read from the input file PRODUCT_data
- ProductMessage.java – class that encapsulates Product object, current timestamp and random region
- ProductProducer.java- Produces products for consumption. Randomly selects a product for product distribution to the ProductConsumer and then pushes the ProductMessage object on its internal queue.
- ProductConsumer.java – consumes only their respective ProductMessage objects from the ProductProducer and maintains an internal list of its collected products
- Utility.java – class that reads from the input data file PRODUCT_data.txt

Driver:

Consists of the main class within the class **MP3.java**

Installation and compile time Requirements

- OS – Windows 7
- IDE – NetBeans 7.2.1
- JDK – 1.7.0
- JRE Version 6

Steps for Execution

Double click on the **JavaWrite.bat** file in the **MP3 folder** to create an output file **mp3out_Sagarika.txt** in the **docs folder.**

Insights and Expected Results

Random Products are produced with random regions till a keystroke.

These products are consumed by their respective consumers.

Every product produced is serialized

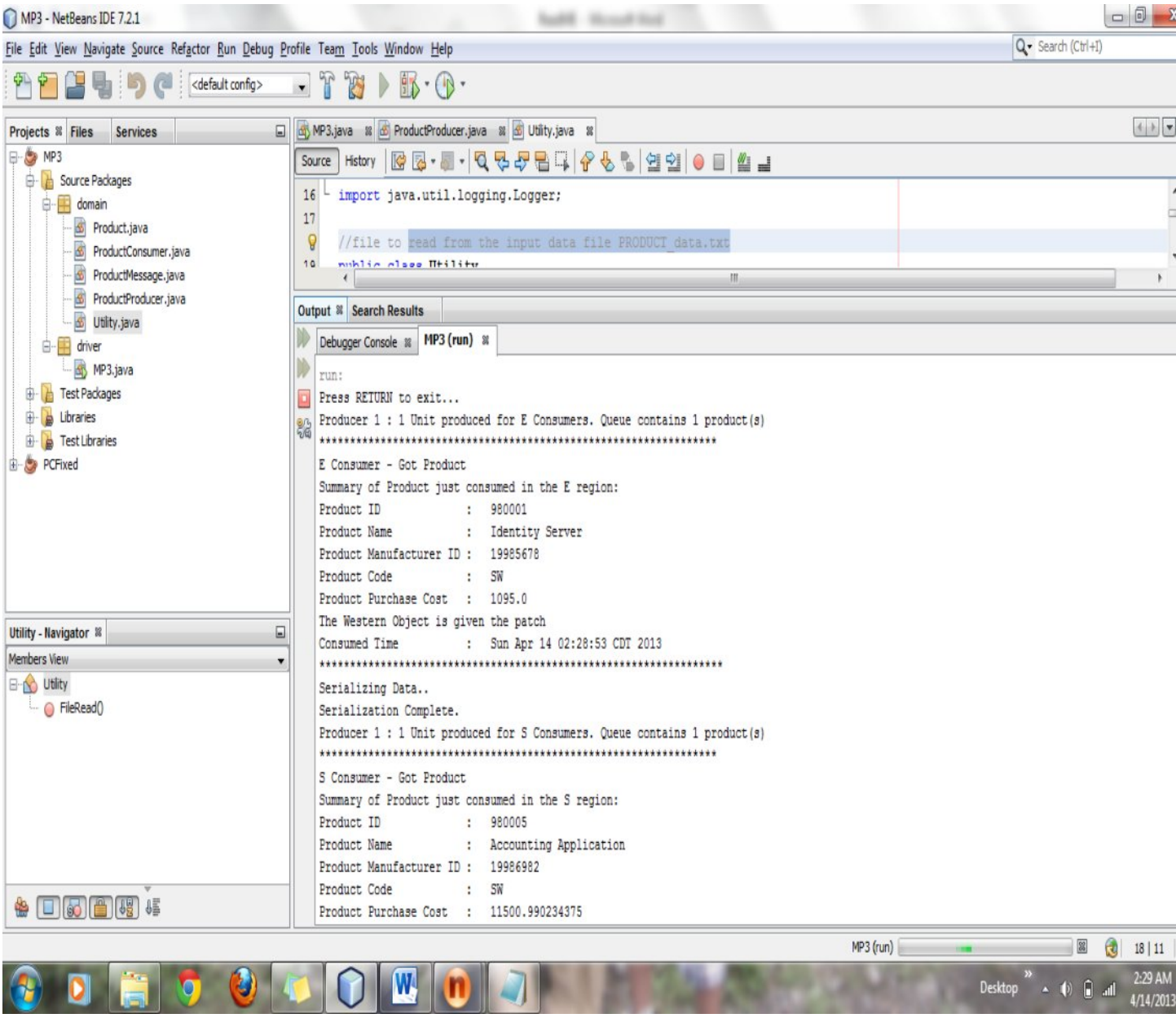
Summary of the

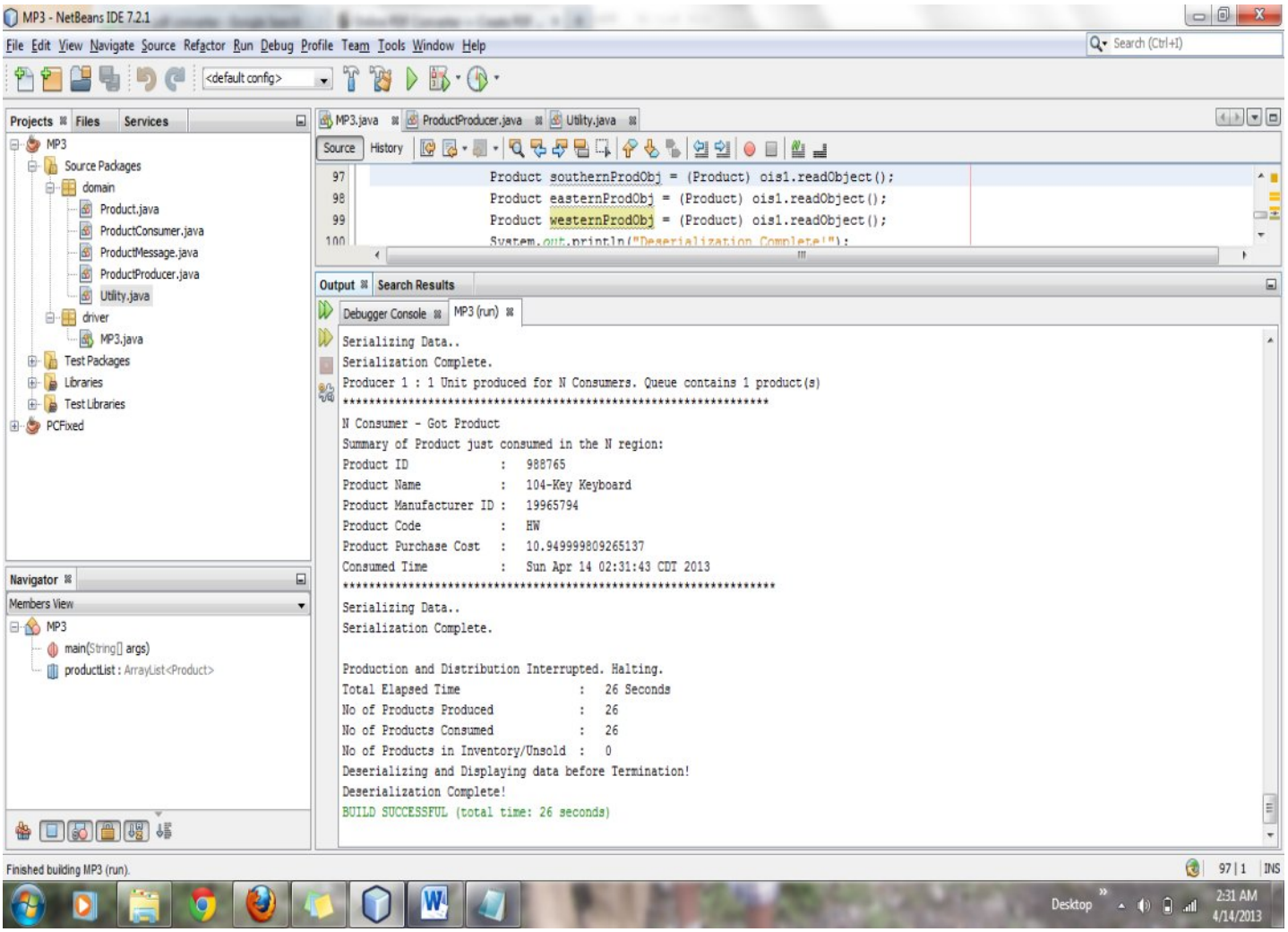
- total time consumed
- number of products produced
- number of products consumed is displayed

Data is deserialized

Note: Please wait for around 20 product objects to be produced before halting and make sure that the serialization is complete before halting the process of production-consumption with a keystroke.

This is to avoid EndOfFileException.


MP3 - NetBeans IDE 7.2.1
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
Search (Ctrl+I)
<default config>
Projects Files Services
MP3
Source Packages
domain
Product.java
ProductConsumer.java
ProductMessage.java
ProductProducer.java
Utility.java
driver
MP3.java
Test Packages
Libraries
Test Libraries
PCFixed
MP3.java ProductProducer.java Utility.java
Source History
16 import java.util.logging.Logger;
17
//file to read from the input data file PRODUCT_data.txt
Output Search Results
Debugger Console MP3 (run)
run:
Press RETURN to exit...
Producer 1 : 1 Unit produced for E Consumers. Queue contains 1 product(s)
****
E Consumer - Got Product
Summary of Product just consumed in the E region:
Product ID : 980001
Product Name : Identity Server
Product Manufacturer ID : 19985678
Product Code : SW
Product Purchase Cost : 1095.0
The Western Object is given the patch
Consumed Time : Sun Apr 14 02:28:53 CDT 2013
****
Serializing Data..
Serialization Complete.
Producer 1 : 1 Unit produced for S Consumers. Queue contains 1 product(s)
****
S Consumer - Got Product
Summary of Product just consumed in the S region:
Product ID : 980005
Product Name : Accounting Application
Product Manufacturer ID : 19986982
Product Code : SW
Product Purchase Cost : 11500.990234375
Utility - Navigator
Members View
Utility
FileRead()
MP3 (run)
18 | 11
Desktop
2:29 AM
4/14/2013



Conclusion

Hence the requirement of parallel Producer-Consumer is achieved