# Basics of Core Java

## Problem Statement

Implement a standalone product search program in Java **using JDBC** that lists matching products for a user who is looking for T-shirts.

You are given 3 CSV files, each containing the T-shirts data for Nike, Puma, and Adidas respectively. Sample CSV files links are attached here for reference. You can add more data in existing files or can add more CSV files for another companies.

All the search operations for the T-shirts will be done on the **relational database using JDBC**.

## CSV File Data

|  |  |
| --- | --- |
| **CSV Fields** | **Details** |
| ID | Unique product id, starting with 2-digit company code |
| NAME | Model name |
| COLOUR | T-shirt Color |
| GENDER\_RECOMMENDATION | Gender for which this T-shirt is recommended. M, F, U (M – Male, F- Female, U-Unisex) |
| SIZE | S, M, L, XL, XXL |
| PRICE | Price of the T-shirt per piece in INR |
| RATING | Rating of the T-shirt from 1 to 5 (1 being lowest and 5 being highest) |
| AVAILABILITY | Y or N |

## Input

Program should accept 4 input parameters:

1. **Color:** String which holds the color of T-shirt.
2. **Size:** String which can have five possible values like S, M, L, XL, XXL.
3. **Gender:** String which has two possible values like ‘M’ and ‘F’. M=Male and F=Female
4. **Output Preference:** String which suggests whether the results should be sorted only by Price or by Rating or by both Price and Rating

## Expected Behavior and Output

* After getting the inputs, program should search for the T-shirts in the database.
* When the program starts, read all the CSV files, and insert records to database. If the record exists in database, then update it else insert a new record. (For this point, consider the server is started).
* Program should display the list of available T-shirts with details(complete record) sorted as per Output Preference.
* Program should be written considering that there could be more csv files and at runtime program should load the files. Please make use of Thread which will look for any new file at a particular configurable location after some configurable time and load the provided files. (For this point, new files are added, or existing files are updated while the server is up).
* If the suitable T-shirt is not present, then program should return a user-friendly error.
* Use available 3rd party dependencies to read and parse CSV files.
* Use the new features of Java wherever possible.

## Deliverables

* Video of the complete program execution(Max 2-3 minutes).
* Java code.

## Evaluation Criteria

* Code Completeness and Correctness
* Database design and use of JDBC
* Use of Java Collections, Threads and Annotations
* Usage of OO Principles, package/class structure, class/function/variable names
* Code in running condition.
* Usage of new Java features