

SAPIENT CODING EXERCISE

Expectations

- The code should run and solve the requirement.
- Write the Unit Test Cases using JUNIT/ TestNG (if you're not conversant with JUNIT/TestNG , just list down unit test cases).

Evaluation criteria

- Code Completeness/ Correctness
- Code Structure and quality: Modularity, usage of OO principles, size of classes/functions, class/function/variable names, package/class structure
- Choice of data structures
- Unit Test cases

The better you perform on these criteria, higher you will score.

Problem Statement

Sapient has won a bid for ABC agency (will be referred as client going forward) which publishes the per capita income data for various cities / countries. Client receives the income information from various external sources. The per capita income information are received in a pre-configured format, for example, CSV, EXCEL, XML or a simple pipe delimited format text file placed at a file location.

Note: The code should handle csv format input, however the design should be extensible to support other input formats as well in future.

Client wants to -

- 1) Load the income data (as described in Sample_Input.csv) into the system.
- 2) Calculate the average income in USD (US Dollar), (currency conversion is required if needed).
- 3) The records should be grouped by Country and gender (refer Sample_Output.csv).

Note: City should be used where country is not available.

Currency Rates

USD (US Dollar)	Currency
1 \$	66 INR
1 \$	0.67 GBP
1 \$	1.5 SGD
1 \$	8 HKD

Objective

The objective of the system is:

- To read the average income information into the system. The various attributes are listed below.
- To calculate the average income grouped by country and gender.
- To provide API to get the summary report in a particular format (format mentioned below) **in a csv file**.

Attributes (provided in the Input)

Attribute name	Attribute Description
City	City
Country	Country (Not Mandatory)
Gender	M / F
Currency	The base currency (e.g. INR for Indian rupee, SGD for Singapore dollar, HKD for Hong kong Dollar)
Amount	Average Income, in decimals.

Summary Report Definition

The summary report should print the average price grouped by country and gender **in a csv file**. Report should be **SORTED** further by Country, gender and average price.

Note: City should be used where country is not available.

Country / City Name	Gender	Average Income (USD)

Sample java command

```
java <MainClass> <Sample_Input.csv> <Sample_Output.csv>
```

Sample Data



Sample_Input.csv



Sample_Output.csv