

Bill of Material – Manufacturer Orders

Problem Description

Write a C# program which reads a csv file `PCBAsemblyBOM.csv` which is a bill of material (BOM) for a PCB. Then your program shall ask the user for a specific manufacturer listed in the BOM. Finally your program shall create a csv file holding only the entries for this manufacturer.

Example

Consider the following snippet of the BOM:

item	manufacturer	partId	quantity	description	type
1	Linear	LTC3780EG#PBF	1	IC BUCK-BOOST CONV 24-SSOP	SMD
2	Fairchild	LM2904M	2	IC OPAMP DUAL -40-85 C 8-SOIC	DNS
4	ON	LM317MBDTG	1	LM317M IC REG VOLT ADJ 500MA DPAK	SMD
5	Microchip	PIC16F690-I/SS	1	IC PIC MCU FLASH 4KX14 20SSOP	SMD
6	Diodes Inc	GBJ10005-F	1	RECT BRIDGE GPP 50V 10A GBJ	SMD
7	Panasonic	ERJ-6ENF4701V	2	RES 4.70K OHM 1/8W 1% 0805 SMD	SMD
9	Susumu	RL3720WT-R022-F	1	RES .022 OHM 1W 1% 0815 SMD	SMD

Your program shall ask the user for which manufacturer the order shall be built. Lets say the user enters "Panasonic" then the expected output of your program is a file named `OrderForPanasonic.csv` with all entries of the BOM which manufacturer is Panasonic.

Please note that the given BOM may have several entries with the same manufacturer spread over the whole file.

Required Tasks

1. Class BomEntry (5 %)

Implement a class `BomEntry` with the following properties:

- Item: Integer
- Manufacturer: String
- PartId: String
- Quantity: Integer
- Description: String
- Type: String

2. Read BOM File (25 %)

Description

Method Name	ReadBom
Parameter	None
Return Type	Array of BomEntry
Description	Reads all lines from PCBAssemblyBOM.csv and stores them into an array of BomEntry objects

Hints

- The csv file PCBAssemblyBOM.csv is available with this assignment.
- You may place the file at any place of your project folder which is convenient for you.
- The path to the csv file may be hard coded in your program.

3. Get Manufacturer from User (25 %)

Description

Method Name	GetManufacturer
Parameter	bom of type array of BomEntry
Return Type	string
Description	Prints "Please enter the manufacturer for which the order shall be created: " and then reads the user input from the console. If the manufacturer entered by the user can't be found, the message "Manufacturer entered not found" shall be printed and the user shall be asked again.

Hints

- Although a bit unrealistic, there is no need to implement a cancel function, i.e., one can rely on that the user will enter an existing manufacturer.

4. Write the Order (45 %)

Description

Method Name	WriteOrder
Parameter	bomEntries of type array of BomEntry manufacturer of type string
Return Type	None
Description	Goes through all bomEntries and writes the ones with the manufacturer being equal to the parameter manufacturer into a csv file. The file must be named "OrderFor<manufacturer>.csv" where <manufacturer> has to be replaced by the string stored in the parameter manufacturer.

Hints

- Again the place to be stored can be chosen freely in your project folder as long as can be found.
- Since the number of lines to be written into the file may not be known in prior it is fine to allocate as many entries for the csv string array as the array `bomEntries` number of elements.
- The entries to be written into the file must not contain the manufacturer since this is available via the file name.
- Take care that a header row shall be on top of the entries containing "Item", "Part ID", "Quantity", "Description", and "Type". What does this mean for the size of your array?