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HACK ROUND STATEMENT

MEAN/MERN STACK

*<Please fill in the details in the sections provided below before submitting this document back to HR>*

This document outlines the hack statement and evaluation details for Hack round.

v1.0

**Candidate Details**

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**Problem Statement**

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| Here is the Test, which needs to be coded as a nodeJS command line program. Your submission should strictly be via Github.  Inventory Management Recently a new online store opened on the Internet that sells Masks & Gloves.  They are faced with an interesting problem of managing their inventory distributed across 2 countries: UK and Germany. You have been assigned to write a program to minimize the sale price for online customers based on its inventory in these 2 countries. The prices are different based on the country where the inventory is stored. The inventory in the two countries is limited. There are 100 Masks in UK which have a sale price of £65 whereas there are 100 in Germany which have a sale price of £100. There are 100 Gloves in UK which have a sale price of £100 whereas there are 50 in Germany which have a sale price of £150. For simplicity we will use GBP as our transaction currency. The order should be fulfilled fully or not at all. If the inventory from one country in used up item have to be fetched from the other country. There is a transport cost involved when the item needs to be shipped from one country to another in case the purchase country is different than the inventory country. Shipping cost is £400 for every 10 units of item type (no mixing of item types). Note that transport cost is always in multiples of 10 units. If customer passport belongs to local country then the customer will get 20% discount on the transport cost.  For example, a customer placing order from Germany and has a passport of UK, while shipping order from UK the transport cost will be charged (£400 - 20% = £320) for every 10 units. To identify passport from UK, passport number starts with B, followed by 3 digits, followed 2 chars, followed by 7 alphanumeric characters. And for Germany, passport number starts with A, followed by 2 chars, followed by 9 alphanumeric characters. To minimize the total sales price, it can be partly fulfilled from one country and remaining from other. Assume that before each purchase order the inventory is replenished to its normal level. Thus, the orders are independent of each other.  Use following input/output to understand the problem better. Also, if you find any discrepancies in the problem or sample input/output please let us know.  **INPUT FORMAT**: (no space between separators) <purchase\_country>:<optional\_passport\_number>:<item\_type>:<number\_of\_units\_to\_be\_ordered>:<item\_type>:<number\_of\_units\_to\_be\_ordered>  **OUTPUT FORMAT**: <total\_sale\_price>:<Mask\_UK\_inventory>:<Mask\_Germany\_inventory> :<Gloves\_UK\_inventory>:<Gloves\_Germany\_inventory> Example input & output INPUT 1: UK:B123AB1234567:Gloves:20:Mask:10 OUTPUT 1: 2650:90:100 80:50 INPUT 2: Germany:B123AB1234567:Gloves:22:Mask:10 OUTPUT 2: 3910:90:100 80:48 INPUT 3: UK:AAB123456789:Gloves:125:Mask:70 OUTPUT 3: 19260:30:100 0:25 INPUT 4: Germany:AAB123456789:Mask:50:Gloves:25 OUTPUT 4: 8550:100 50:80:45 INPUT 5: UK:Gloves:50:Mask:150 OUTPUT 5: 18500:0:50:50:50 INPUT 6: UK:Gloves:250:Mask: 150  OUTPUT 6: OUT\_OF\_STOCK:100 100:100 50 |

**Evaluation Criteria**

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| 1.  Completion of the task.  2.  Code organization and structure. (highest points)  3.  Any positive and negative tests. (need not be written tests, just describing them is enough)  4.  Understanding of the problem.  5.  How you approach the solution. |

**Timeline**

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| 2-3 days |

**Git Repo**

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| https://github.com/mo351557/iConnectHackRound-Inventory\_Management.git |

**Understanding of the problem**

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| From the given statement, I understood that UK has less cost price comparing to German cost price. Based on that and also considering transport cost, I have written an algorithm to minimize the total sales price. |

**Approach**

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| 1. Splitted the input based on the colon(:) 2. Stored inventory data in a separate json file named inventory.json 3. I used regex to check the given passport is valid and belongs to which country. 4. Using the given masks and gloves from the input, I am checking the stocks. 5. Based on the purchase country and passport available, I am subtracting the items and if stock excides, then get the stocks from the other country. 6. Based on the purchase, calculating the total sales price including transport cost if applicable. 7. Logging the total sales price as output |

**Positive and Negative Test Cases**

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**FAQs**

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| **Q:**  "If customer passport belongs to local country then the customer will get 20% discount on the transport cost. For example a customer placing order from Germany and has a passport of UK, while shipping order from UK the transport cost will be charged (£400 - 20% = £320) for every 10 units"  What I am trying to understand is if the customer in above example stays in Germany and orders but holds a passport of UK making him a British so condition is only applied if the Germany stock is less and trying to get rest stock from UK inventory to fulfill customer's order at that time the discount applies otherwise if Germany stock is sufficient then there won't be any discount irrespective of the customer having UK passport as the customer's order is being shipped internally Germany right?  **Response:**  Yes you are correct. If Customer orders from Germany and order is fulfilled from Germany there is not transport cost at all. Irrespective of customer's passport.  Customer's passport will only come into picture for 20% discount if there is an shortage of inventory in the country where order is placed.  **Q:**  Do we have to use a DB?  I am currently using array of objects to store data since I want to keep the project as simple and clean as possible.  **Response:**  DB is not required.  **Q:**  For Output 3: if the purchase country is Germany and passport is from the UK, why are we reducing inventory from UK  For Output 4: Total sale price and inventory for Germany is not getting matched.  **Response:**  You have to write code to minimize the sale price for online customers based on its inventory in these both countries. so the output are based on that.    **Q:**  1.How do I know from which country do I need to use inventory?  2.If I am placing an order from the UK, do I need to subtract inventory from the UK or Germany.  **Response:**  As mention in statement. **“You have been assigned to write a program to minimize the sale price for online customers based on its inventory in these 2 countries.”**  which answer your both questions 1. You have to minimize the cost 2. Yes you can subtract from Germany. If it suits to other condition in given statement. |