

## **Business Re-engineering**

You have been hired by a manager to create a web system which is a servlet and JSP server-side application to manage a new business. The manager also wishes to use the same system to assess their customer base. That is to see whether the customers are growing in size or reducing over a given period of time the categories of customers they wish to see trends for including the gender, preferences and location of the customers. The manager has informed your team that the company produces 4 sets of products, each on a product line and it's important to know the demand for each product in order to plan appropriately. During system set up, the manager specifies how many products can be produced in a single day on a long-term product category line. Based on this, the system provides how many mid-term and short-term products can be produced per day. Given that the number of products produced per day for the mid-term product category is double the number produced under the long-term category. The number of products that can be produced on the short-term product line is 5 times the number produced by the mid-term product line. The manager wishes that he only enters the number of products required for the long-term line and the others are automatically computed and displayed by the system.

The company wishes to recruit staff to work under the different product lines. The company should at any one time have staff/employees whereby each product line has at least one staff. These product line staff are supervised by a manager, who is the only other employee of the company. If the product line demand drops while another increases, then, staff may be moved automatically from where the demand dropped to where it increased instead of hiring new staff. Note that regardless of the drop in demand, no staff loses their job. The number of staff required to manufacture long-term products is double the number of staff required to manufacture the same number of medium-term products. Also, the number of staff required to manufacture the same number of short-term products is a quarter the amount of time required to manufacture the same number of long-term products. The system reallocates the available staff based on the ratio of sales generated for a given month. That is, the higher the sales, the more staff. The reallocation is done when the manager clicks reallocate.

Customers can buy products of choice using the system after being authenticated and if they only want to show their liking of a product, they may not be authenticated. Buying involves adding items to the cart and clicking the check-out link. Thereafter, the product is considered to be bought and that sale is registered. Some customers who wish to only like may do so even if they are not registered.

### **Assignment:**

Using your 5-man team, come up with a company name and using a product of choice, decide on what product categories this company will be producing. For each of the group members assign a module from each of the following

- 1- HR Management
- 2- Product and sales Management – for adding products, tracking sales and likings
- 3- Customer Base Tracking and advisory module - to show which customers need which products
- 4- Reporting – for reports generation from all modules
- 5- System configuration, dashboard and Authentication – dashboard provides a summary of statistics when one logs in

Submit the following on muele per group by **10<sup>th</sup> August 2022**

- SQL database dump
- System code
- Simple manual of your system
- Indicate who has done what – in a few sentences in a word document and host your work on git, show link for git here

**Presentation of the work will be done on 11<sup>th</sup> and 12<sup>th</sup> August 2022. Only those who will present their work will be awarded marks**

### **Marking guide**

- System functions being fully operational (**25 marks**)
- System interface (**10 marks**)
- Database design (**20 marks**)
- Using git (**10 marks**)
- Individual contribution and answering asked questions (**30 marks**)
- Variable naming - (**5 marks**)
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