Workload management

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# Context

At the #WawaByHCL hackathon hosted at Media, Pennsylvania - home to Wawa convenience stores, HCL is inviting modern day innovators such as yourself, to tackle real problems posed by the world's biggest brands. Mentored by business leaders, you'll collaborate to build solutions that will propel their organizations to the 21st Century.

Wawa HCL Hackathon 2019 is being conducted to inspire ideas ranging from real-time retail business challenges, to automation in the cloud, self-remediation, IoT and cost optimization. The ideas imagined by developers will correlate with retail industry trends around topics that reflect the pulse of activity.

# Introduction

Workload management is a business problem where ones this process is optimised and automated, it will bring significant revenue to the organisation. ([https://www.hackerearth.com/challenges/hackathon/wawa-hcl-hackathon/custom-tab/workload-management/#Workload%20Management](about:blank#Workload%20Management))

From the time order is placed to the time order is delivered there are lot of variables which are to be accounted for in the solution to optimise and automate it.

# Goal/ Objective

Design and develop a model of workload management and test the scenarios listed. Following list of activities to be performed during the exercise:

1. <<technical inputs for evaluation criteria>>

# Points to Ponder

# Technology Stack

|  |  |  |
| --- | --- | --- |
| **S. No.** | **Technology/Tools** | **Notes** |
|  |  |  |
|  |  |  |

# Use Cases

# Workload management

Automate the workload management system



* Staff would login on to the system. Based on login, system should determine which products are available to order that day.
* Groups should be mapped to products.
* It is possible that no staff (for a group), has logged in on a system on that day. The products related to this group should be shown as “not available” for that day.
* One staff could be mapped to multiple groups based on his/her skills.

|  |  |
| --- | --- |
| Primary Question | Sub-Primary Section |
| **Section 1: Receive order and consolidate in central queue**  **Order details – capture for each item**   * Order number * Order description * Quantity * Product code * Product description * Topping 1 * Topping 2 * Topping 3 * Quantity * Price * Order status | Q. Check if order has multiple items?   * Yes * No   If Yes, Create multiple orders in the queue with same order number but different items |
| **Section 2: Mapping**   |  |  |  | | --- | --- | --- | | Group | Group members | As a staff when I login as member of ‘veg pizza’ group, I should get the orders that are placed against veg pizza.  This means all the orders placed under veg pizza group would be routed to the people who are under the group of veg pizza. | | Veg Pizza | Chandler | | Veg Pizza | Joey | | NV Pizza | Joey | | NV Pizza | Rachel | | Sandwich | Monica | | Sandwich | Joey | | Burger | Chandler | | Burger | Joey | | Drinks | Ross | | Q What is consolidation station?  On this station items in an order are bought together and prepared for final delivery. This is manual process.  Q Can a staff be marked to multiple groups?  One staff may have skill to make multiple items. Therefore they can be mapped to multiple groups based on there skill |

Table A

|  |  |  |
| --- | --- | --- |
| # | User Story | Acceptance Criteria |
| Order management | | |
| 1 | User should be able to place orders using different channels | User is able to place orders using different channels viz:   1. Store 2. Web 3. Mobile |
| 2 | Order should have a unique order number | A unique order number is generated by the system  **Ex**: ORD20092019001 |
| 3 | **Order life cycle:**  Each order follows a life cycle:  Customer places an order – Status: **Order placed**  Station gets order assigned – Status: **WIP**  Consolidation station receives all items in an order – Status: **Order complete.** | Order life cycle in system is – Order placed > WIP > Order complete |
| Queue management | | |
| 4 | The order should queue up in a central queue system for processing | A central queue system has all the orders based on the sequence in which they arrive. This is shown in the form of list with FIFO principle. |
| 5 | Central queue system should determine the following:  Business rule: Only those groups can be assigned on which atleast one staff has logged in | Central queue system determines if order has multiple items. If yes, each order is split into multiple orders (with same order number) |
| 6 | An order can have multiple items (Ex: sandwich and burger)  If order has more than one item the same order can be routed to multiple groups for optimization | **Case 1:** Order with one item (Veg pizza) - Veg pizza order gets routed to group ‘veg pizza’  **Case 2:** Order with multiple items (Non veg pizza and veg s/w)  Non veg pizza gets routed to ‘NV Pizza’  S/w gets routed to ‘Sandwich’  Both case 1 and case 2 – once prepared are sent to consolidation station.  Refer table above |
| 7 | Order should be auto assigned to the groups based on mapping table above | Orders are auto assigned to the staff belonging to the groups.  Orders with multiple items are assigned to multiple groups. |
| Order fulfilment | | |
| 8 | Order-items should be prepared by one or more groups and send to consolidation station where they are manually consolidated for delivery. | Order-item(s) is prepared by multiple groups and are sent to consolidation station where they are manually consolidated for delivery  The consolidation group updates the **order status to complete** only when all items of that order are received. |
| 9 | Consolidation station should send the order for delivery as per customer’s delivery instructions | Consolidation station sends the order to delivery as per customer’s delivery instructions |

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