

**DRIVER LICENSE EXAM SUPPORT**

**Software Requirement Specification**

**Report 5 - Non-Functional Requirements**

– HoChiMinh, August 2022 –

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**Record of Changes**

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| **Date** | **A\* M, D** | **In charge** | **Change Description** |
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\*A - Added M - Modified D - Deleted

**V. Non-Functional Requirements**

**1. External Interface Requirements**

**1.1 User Interfaces**

UI-1: The WRS screen displays shall conform to the *Process Impact Internet Application User Interface Standard.*

UI-2: The WRS provides tutorials , displayed on the left webpage to help user how to use functions.

UI-3: Incorrect syntax ,value shall be displayed behind each text field.

UI-4: Errors caused by the system shall be displayed on the popup srceen.

**1.2 Software Interfaces**

SI-1: Warehouse Restaurant System

SI-1.1: The WRS shall transmit the quantities of food items ordered to the Cafeteria Inventory System through a programmatic interface.

SI-1.2: The system shall not allow user to import materials when the warehouse is full or export materials when not having enough quantity.

SI-1.3: When material is no longer available, the system shall remove it from the warehouse.

SL-1.4: The WHS takes food/drink information from POS and exports raw materials according quantitative recipe

**1.3 Hardware Interfaces**

HI-1: ***Server Configuration***

*Application Server*

CPU : Intel Core i5 -10400

Memory Space : 128 GB RAM 1333 MHz

Storage Space : 2 TB

Operating System : MS Windows Server 2012 R2

Software : Microsoft IIS 8.x, .NET Framework 4.5

***Database Server***

CPU : Intel Core i5 -10400 s

Memory Space : 256 GB RAM 1333 MHz

Storage Space : 3 TBOperating System : MS Windows Server 2012 R2

Software : Microsoft SQL Server 2019

HI-2: ***Client Configuration***

*PC Device*

CPU : Intel Core i5 -10400

Memory Space : 4 GB RAM 1333MHz

Storage Space : HDD: 500GB, 2.5" SATA x 2, RAID 1

Operating System : Windows Win7/Win8/Win10

Operator Display : 18.5-inch widescreen, 16:9 format

1280 x 720 pixel, 1024 x 768 pixel

*POS Device*

CPU : Intel® Celeron® Processor G1820TE (2.2GHz, Dual Core)

Memory Space : 2GB (Max. 4GB), DDR3 SO-DIMM slot x 2 (1 open)

Storage Space : HDD: 500GB, 2.5" SATA x 2, RAID 1

Operating System : Windows Embedded POS Ready 7

Operator Display : 15" XGA TFT colour LCD with resistive touch screen (TeamTouch), Integrated

1024 x 768 pixel

Proximity Sensor

Option: Integrated Camera/Mic

*Mobility Device*

CPU : Quad-Core 1.2 GHz

Memory Space : 1.5 GB

Storage Space : 8 GB

Operating System : Android 8.0

Wifi Standard : 5GHz Wi-fi

Operator Display : 7.0 inches

1280 x 800 Pixels

HI-3: ***Network***

LAN Network : Speed ≥ 1 Gbps

WAN Network : Speed ≥ 2Mbps/10 Users operate together

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**1.4 Communications Interfaces**

CI-1: The system shall send the daily report to administrator through email or text message to check quantity of material

CI-2: The warehouse keeper can report immediately to administrator through email or text message if system have problem need to handle

CI-3: The warehouse keeper can communicate with each other through local network to confirm quantity of material ( to manage import, export or transfer)

**2. Quality Attributes**

**2.1 Usability**

USE-1: The system allows a member to update information when data input needs to change.

USE-2: Warehouse keepers can view previous reports.

USE-3: Members can only access function corresponding to their role

**2.2 Performance**

PER-1: Software interface’s load time should not be more than one second for users.

PER-2: The System shall send confirmation messages to the administrator within an average of 3 seconds after the warehouse keeper sends the request.

PER-3: The system shall send text messages between warehouse keeper each other must to be fast should not be more than two or three seconds.

PER-4: 95% of web pages generated shall download completely within 4 seconds from the time the user requests the page over a 20 Mbps or faster Internet connection.

**2.3 Security**

SEC-1: User password must be hashed with SHA256.

SEC-2: All user's "sensitive" data such as password, phone number, ID card, email must be encrypted.

SEC-3: User account will be blocked if user input wrong password more than 3 times.

SEC-4: Only admin can use manage account or manage warehouse tag feature.

SEC-5: User must login to use software functions.

SEC-6: Only manager can declare material, declare recipes, edit material information and recipes information.

**2.4 Safety**

* We have many good environments suitable for material preservation that help keeping material for a long time while still having the best quality, also increase the user’s health.
* Tracing the resource of the material and control all the import and export strictly for fresh material.

**2.5 Availability**

AVL-1: The system is always available for access, at least 98% of time from 5 A.M to 4 A.M the next day. One hour for checking the system. Local time, excluding scheduled maintenance windows.

AVL-2: If having a problem during working time, the system have ro stop for under 5 hours to resolve this.

**2.6 Reliability**

REL-1: maintenance time shall not exceed 1 hour compared to intended time.

REL-2: No more than 3 experimental runs out of 500 can be lost because of system failures.

**2.7 Design Constraints**

DES-1: Programming languages:Java,Javascript.

DES-2: Web server: Apache.

DES-3: Web browser: IE8-11.

DES-4: Database: SQL Server 2019.

DES-5: Report: Crystal Report 2016 + Excel.

DES-6: Design tools: Power Designer 16, Diagram.io,...

DES-7: Programming Tool: Visual Studio Code.

**2.8 [Others as relevant]**

About efficiency: This app helps the administrator easier in managing the number of materials, import, export or transfer.

installability: easy to install after having a id key from the administrator.

interoperability: warehouse keeper can communicate with each other conveniently. Administrator can read detail report every day so they can know how it’s working.

This app has high security. It use local network so only the warehouse keeper or the manager can interact with each other, no one else can. And if it has bug, The time need to fixing under 5 hours