**Introduction**

**1.1 Purpose**

The purpose of the Software Requirements Specifications (SRS) will contain various explanations of the product that the developers will be working on. The people that will have access to this document will be the developers and the clients. The developers are Victor Rivera, Nilka Quiles, Yanilette Lopez, Tania Peña and Jonathan Melendez. These developers will work together on a group called Enable System (ES). The clients will be the GameStop general employees. This document will be able to explain the specifications of the product to the clients.

**1.2 Scope**

Enable Systems Item Lookup for GameStop:

* The ESILGS is an improvement to the inventory Item Lookup program of Games Stop.
* The ESILGS improves the search in the item data base locally and externally in each store and between them of all GameStop stores throughout Puerto Rico and The United States.
* The program provides the same information to the regular employee as the manager in the ESILGS.
* The ESILGS repairs the erroneous or outdated information that the current program presents in the stores.
* The Requirements ESILGS are:
  + The data on the GSSDBMS and GSGDBMS will be updated constantly.
  + The ESILGS will communicate and realize transactions between stores.
* The Objectives of ESILGS are::
  + The ESILGS eliminates the delays.
  + The ESILGS eliminates the Rank between regular employee and manger in the Item Look Up program.
* The Goal of the ESILGS are:
  + The ESILGS Increases the sales by improving the Item Look up Program.

**1.3 Definitions, Acronyms and Abbreviations**

**1.3.1 Definitions**

**Table 1.3.1 Definitions**

| Words | Definitions |
| --- | --- |
| Software Requirements Specifications (SRS) | Is an explanation of the product that the developers will be working on. |
| GameStop (GS) | Is the world’s largest video game and entertainment software retailer. |
| Portable Computer (PC) | Is a computer that is design to move from one place to another place. |
| Fiction | Is the form of a narrative events that are not real, mostly is invented by the author. |
| Art | Is the way of people express senses, emotions and intellect. |
| Magic | Is the art that purports to control or forecast natural events, effects, or forces by invoking the supernatural. |
| Supernatural | Is the meaning of this word is not clearly but it can be interpreted as above or existing outside the laws of nature. |
| Phenomenon | Is any observable occurrence. |
| Fantasy | Is fiction that commonly uses magic and supernatural phenomenon, which usually takes place on imaginary worlds. |
| early Childhood (eC) | I s the content for ages 3 and older. |
| Cartoon | It could be a drawing or a painting in a form of two dimensional visual arts. |
| Mild violence | Will contain moderate physical force. |
| Mild language | May contain moderate bad words, which parents may not want their children to hear. |
| Everyone (E) | Is the content for ages 6 and older, could contain minimal cartoon, fantasy or mild violence or use of mild language. |
| Suggestive themes | Contains provocative themes, which may cause people to feel certain way. |
| Everyone+10 (E+10) | Is the Content for ages 10 and older, could contain more cartoon, fantasy or mild violence, mild language or minimal suggestive theme. |
| Gambling | Is the way of gathering money or valuable objects. |
| Strong language | May contain insults, rude and vulgar vocabulary. |
| Teen (T) | Is the content for ages 13 and older, could contain violence, suggestive themes, minimal blood, gambling or usage of strong language. |
| Sexual content | Contains the actual or simulated sexual explicit. |
| Mature (M) | Is the content for the 17 and older, contain intense violence, blood, sexual content or strong language. |
| Intense violence | Will contain intense physical force. |
| Nudity | Is the State of wearing no clothing, which means peoples genitals are in the out. |
| Adults only | Is the content for ages 18 and older, could contain scenes of intense violence, graphic sexual content or nudity. |
| Rating Pending (RP) | Have been summited to the ESRB and is waiting for the final rating. RP only appears when advertising before the release of the game. |
| Item Look Up | Is the Old Software of Game Stop Item Look Up |
| Rank | Is a position of an employee in a store or job which identifies who’s the one will make decisions and the one who follow the decisions. |

**1.3.2 Acronyms**

**Table 1.3.2 Acronyms**

| Acronyms | Meaning |
| --- | --- |
| ES | Enable System |
| DBMS | Database Management System |
| GSSDBMS | Game Stop Store Data Base |
| ESILGS | Enable system Item Look Up for Game Stop |
| GSGDBMS | Game Stop Global Data Base |
| eC | early Childhood |
| E | Everyone |
| E+10 | Everyone+10 |
| T | Teen |
| M | Mature |
| Ao | Adults only |
| RP | Rating Pending |
| SRS | Software Requirements Specifications |
| Acronyms | Meaning |
| ES | Enable System |
| GS | Game Stop |
| UML | Unified Modeling Language |

**1.3.3 Abbreviations**

**Table 1.3.3 Abbreviations**

|  |  |
| --- | --- |
| Abbreviations | Meaning |
| Info | Information |

**1.4 References**

**Table 1.3.4 References**

|  |  |
| --- | --- |
| References | Used for |
| [www.google.com](http://www.google.com) | To find definitions, Diagrams Concepts, |
| [www.wikipedia.com](http://www.wikipedia.com) | To find Definitions and Diagrams Concepts |
| [www.gamestop.com](http://www.gamestop.com) | To find a Logo for the Icon program |
| www.esrb.org | To find the ratings of the games. |

**1.5 Overview**

The rest of the document is composed of two main sections the first one is Section 2.0 the Overall Description. This section is intended for the user. It contains the Product Perspective, Product Function, User Characteristic, Constraints, Assumptions and Dependencies and Apportion Requirement. The second one is Section 3.0 Specific Requirement. This section is intended for the developer. It contains the External Interfaces, Functional Requirements, Performance Requirements, Logical Data Base Requirements, Design Constraints and Software System Attributes.

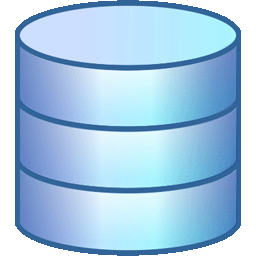
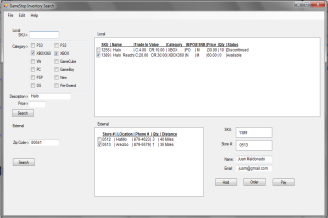
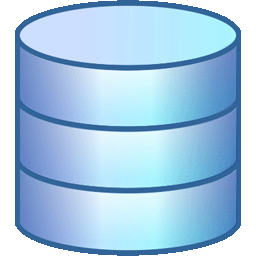
**2.0 Overall Description**

**2.1 Product Perspective**

The ESILGS Software is being developed as a revision of the current "Item Lookup" application GS is working with currently and it is an extension for the POS system that is the mainframe for running a store. The Lookup is an application that runs within the POS system which allows the user to find items within the store: local availability, external availability and price, Right now the current “Item Lookup” is divided into two different programs. It has one version for every employee and another for employees who are supervisors/ assistant managers/ managers. The basic one consists of conditions (SKU, Description, Category, Sub-Category, Quantity Greater Than, Quantity Lesser Than, Status and ESRB) which must be filled in so that the search can go through. Only four of the conditions (SKU, Quantity Greater Than, Category and Description) are used extensively since they allow the user to find everything. The difference between the basic and the manager’s lookup programs is that managers have access to the amount of items that are available at the time of the search. Most regular employees bypass this security measure by asking their manager to open up a lookup for them. When searching externally, both users (Regular and Managers) there are three options available: SKU, State, and Zip Code. When these conditions are met, only SKU is mandatory, the user initiates the search and it displays the nearest stores (in miles), their phone number and the amount of the procured item in the other stores. These quantities are displayed in this fashion: Less than 4, Between 5 and 9, 10 or more. The External Search is not updated instantaneously unlike the Local Search and has a delay of 48 hours. Our software would function similarly to the "Item Lookup" that the Borders bookstores had available inside the stores. Their software allowed the clients to search for a specific item or an item they only knew little about and see if the was available, if not then it would display the locations of where it was available and finally it would give the client the option of ordering the item to have it delivered to the store. This allows the sales to be kept within the umbrella of the company, meaning more sales and satisfied customers. The difference between the Borders bookstore Lookup and our ESILGS is that it restricted to the employees because it will allow them to quickly know if an item is available and if it is not it will allow the employee to communicate with another store and have it set aside for the client. Finally if it is not available in a nearby store, an order can be placed which will deliver the procured item to the store for customer pickup.

**2.1.1 System Interfaces**

The ESILGS is a modification for the software “Item look up” of Game Stop. As shown in the figure 2.1.1the GSSDBMS, the GSGDBMS, the Internet and the Employee take part as components of the ESILGS. The main system in which ESILGS takes part of would be composed of the internet, the GSGDBMS, the GSSDBMS, and the Employee. The main component when the Employee is performing an external search in the ESILGS is the GSGDBMS. The mains components when the Employee is performing a local search in the ESILGS are the GSSDBMS and the Internet.

ESILGS

GSSDBMS

GSGDBMS

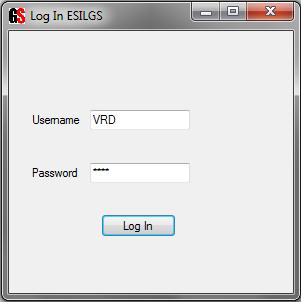


Employee

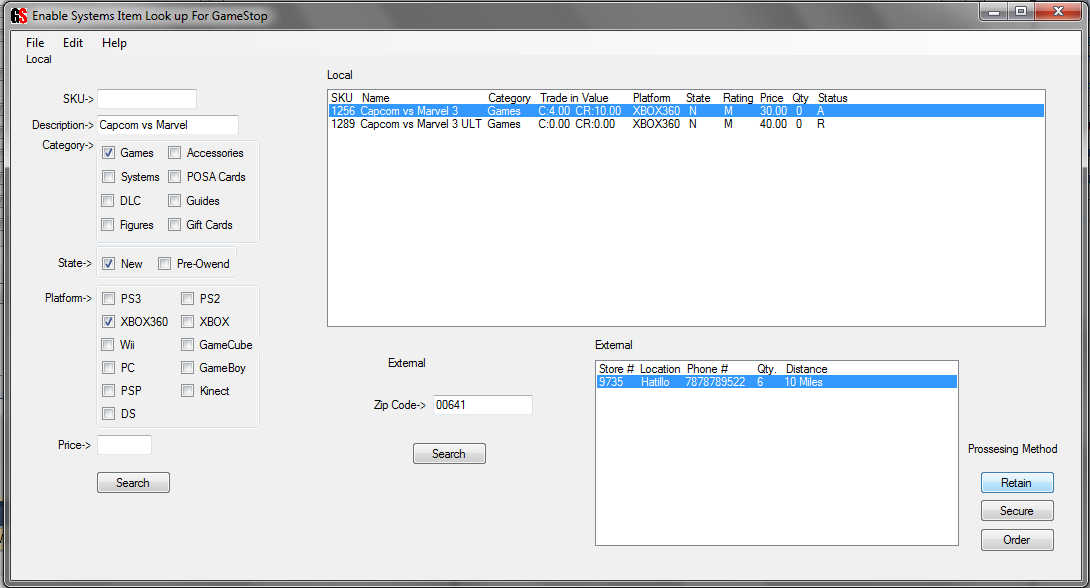
**ESILGS Interface** Figure 2.1.1

**2.1.2 User Interface**

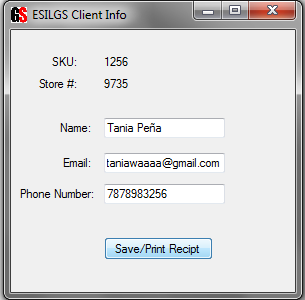
ESILGS will provide the Employee a better way of searching thru the Local and External data base. The Employee should be able to learn how to use the system in around 20 minutes. As shown the figure 2.1.2 the Employee has to enter their credential to be able to access the ESILGS. In figure 2.1.3 the Employee will be able to make a local or external Search. When the Employee is performing an External Search and select a processing method a request will be send to the External Store and when the confirmation arrive like show the figure 2.1.4 the Employee will be able to Enter Client Info, save it and print a receive.



**Figure 2.1.2 Login Interface**



**Figure 2.1.3 Local and External Search Interface**



**Figure 2.1.4 Client Info**

**2.1.3 Hardware Interfaces**

ESILGS will use the hardware that is already installed and provided in each GameStop store. In order for the inventory updates to be live, upgrades must be made to:

* Servers at Company Level - Allows for updates to the inventory to be live and reflected across the company.
* Routers In-Store – Allows access to the global live network which will keep the inventory up to date both locally and globally.
* The other components which the stores already possess are:

Monitor - Displays the ESILGS and allows the user to have a visual of what they are doing.

Mouse - Allows the user to choose different options included in the ESILGS.

Keyboard - Allows the user to type in data to search for specific items in the ESILGS

Scanner - Allows the user to scan a barcode to find specific information in the ESILGS regarding the scanned item..

Printer - Prints the hold and order confirmations, as well the inventory from the ESILGS.

**2.1.4 Software Interfaces**

The ESILGS will share compatibility with the software available at GameStop which consists of a customized version of Windows XP as its OS and the Point of Sale software which contains the ESILGS. As an extension of the POS, it will link up with the transaction application in order to finalize a transaction. The ESILGS will communicate with the GSGDBMS, which contains the information of all store inventories which will isolate the individual Lookups in order to access a specific store’s inventory. As the parent DBMS it will have continuous access to each store.

**2.1.5 Communications Interfaces**

In order for ESILGS to work seamlessly, it requires high end implementation of the TCP/IP model. The routers will be able to access the network at any time, barring any unforeseen circumstance, and pull information from the global network continuously. The servers will be optimized to handle the traffic from all the stores without suffering from delays and miscues. Each store will also be connected through a dedicated internal network which allows communication between stores. This will allow for requests and orders to be met without the need for telecommunications. The ESILGS will use this established framework to access external information around the company such as inventory quantities, instant communication between stores for hold confirmation and placing an order at the company warehouse all within the same system.

**2.1.6 Memory Constraints**

The ESILGS is designed to have everything available within the same application. This will require the system to be streamlined and as such the program will rely on the maximum 4 GB of RAM that the operating system (Windows XP) requires. The program, for example, will not access the external data unless it is prompted. When it is necessary, it will display the options in the same window and if further options are necessary it will transition to the Secure/Retain/Order extension with the data and close itself. This will allow the program to run at optimal condition without taking performance hits. The computers provided by GameStop have 240 GB Hard Drives. No additional storage will be necessary since the Global Servers will hold the entirety of the inventory data. The Hard Drives will serve as backups in the event that something interferes with the network and the stores can continue to function.

**2.1.7 Site Adaptation Requirements**

As ESILGS is part of the POS mainframe, it will need access to different applications within the system:

* POS: Locating the game and getting confirmation from client that they want to purchase, the ESILGS will pass along the information to the Transaction application to finalize the sale.
* Inventory Control: This application is used to receive the merchandise and will update the inventory. It also generates transfer and recalls which deal with altering the inventory quantities. The Lookup will have continuous access to this program when it is open to reflect the inventory changes to the user as soon as they are happening.

**2.2 Product Functions**

The employee needs to enter the credentials ( username and password) to Access the ESILGS like is shown in Figure 2.2.1. If the user or password or both are invalid the employee can login to ESILGS.



**Figure 2.2.1 Access to ESILGS**

In Figure 2.2.2 For a Local Search the employee enter the Item information then look for the List of games to see if is available.



**Figure 2.2.2 Local Search**

In figure 2.2.3 the Employee Select the Item then Enter the Zip Code and the Stores will be Display depending of the Zip Code entered. Then the employee select the store and select Processing and automatically the system send a confirmation to the Other store



**Figure 2.2.3 External Search**

**2.3 User characteristics**

The user characteristics are:

* Basic Computer Skills: knowledge on how to use the mouse, keyboard, printer and computer monitor.
* Bilingual (Spanish & English): read, write and speak.
* Knowledge on consoles, games rating and accessories:
* Knowledge on consoles:

1. PlayStation(PS): PS2, PS3, PSP
2. Xbox: Xbox360, XboxKinect
3. Nintendo: Nintendo GameCube, Nintendo Wii,

Nintendo DS, Nintendo 3DS

1. Desktop & Portable Computer(PC) : Any kind of computer

* Knowledge on games rating:

1. Early Childhood (eC): content for ages 3 and older.
2. Everyone (E): content for ages 6 and older, could contain

minimal cartoon, fantasy or mild violence

or use of mild language.

1. Everyone +10 (E+10): content for ages 10 and older,

could contain more cartoon,

fantasy or mild violence, mild

language or minimal suggestive

theme.

1. Teen (T): content for ages 13 and older, could contain

violence, suggestive themes, minimal blood,

gambling or usage of strong language.

1. Mature (M): content for ages 17 and older, could

contain intense violence, blood,

sexual content or strong language.

1. Adults only (Ao): content for ages 18 and older,

could contain scenes of intense

violence, graphic sexual content

or nudity.

1. Rating Pending (RP): have been summited to the ESRB

and is waiting for the final rating.  
 RP only appears when advertising

before the release of the game.

* Knowledge on accessories:

1. Consoles Accessories: cables & adaptors, chargers &

batteries, controllers, gear &

apparel, headsets & mics,

memory, game systems, repair &

cleaning, cooling systems, cameras

& webcams, gaming furniture,

storage & cases, keyboard & mouse

pads. These accessories are

available for all PS, all Xbox and all

Nintendo.

1. Computer Accessories: cables & adaptors, controllers,

game systems, gaming furniture,

gear & apparel, headsets & mics,

keyboard and mouse pads,

repairing & cleaning, storage &

cases. These accessories are for

any kind of computer (desktop

or PC).

* GS general employees.
* 4th year of high school required.

The users that will use this product, will be the general employees of GS, these employees might already have the necessary skills to work with the system, as metion.

**2.4 Constraints**

Here you will find the limitations, minimum requirements and security that the user must possessed.

* Regulatory Policies
* User must be a GameStop employee
* Games will be sold depending on the clients age and game rating
  + Hardware limitations
    - * Keyboard
      * Computer
      * Cash register drawer
      * Monitor
      * Receipt Printer
      * Barcode Scanner
      * Router
  + Software limitations
* OS: Windows XP, Windows Vista and Windows 7
  + - * Internet connection with at least a speed of 512 kbps
  + Interfaces to other applications
    - * Inventory Management
      * Transaction Program
  + Parallel operation
    - * Inventory Management
      * Transactions
  + Audit Functions
    - * The ESILGS has key log program that registers every key that de user has input
  + Control Functions
    - * Controls intended primarily to allow ESILGS to be connected to networks whose routing may be unstable or subject to errors.
  + Higher-Order Language Requirements
    - * C#
  + Signal Handshake Protocols
    - * Communications and Synchronizations Between stores via The GSGDBMS
  + Reliability Requirements
    - * Must have user friendly environment for new employees.
      * Update the information constantly and automatically.
  + Criticality of the application
    - * Live update every 20 seconds to the GSSDBMS and GSGDBMS
      * Every employee on games stop can use it and make a transaction.
  + Security
    - * User ID and Password Authentication.
  + Safety And Security Considerations
    - * This part does not apply to our system because it doesn’t put the user in danger.

**2.5 Assumptions and Dependencies**

**Assumptions:**

The followings assumptions statements indicate in what conditions the ESILGS will work:

* Employee has an account to access the ESILGS.
* ESILGS is installed in the Operating Systems Windows.
* ESILGS is connected to GSSDBMS when the Employee performed a local Search.
* ESILGS is connected to GSGDBMS when the Employee performed an External Search.

**Dependencies:**

* Every employee needs an account (username, password) to access ESILGS.
* The ESILGS have to be installed on Windows XP, Windows Vista or Window 7.
* ESILGS doesn’t work on Linux or Mac OS.

**2.6 Apportioning of Requirements**

Some of the Implementation will be create:

* Instead of the GS employees doing the search, the customer s will be able to perform a search thru the GS Main Page. This way make it more efficient lowery the employee client interaction.

**3.0 Specific Requirements**

**3.1 External Interfaces**

Our system, ES GameStop Inventory, will be able to interact with the user and the GameStop DBMS via inputs provided by the user. They will be organized in the following format as input/output, purpose of input/output and source of input/outputs.

**3.1.1 Type-Input**

1. Name: User Log in credentials (username and password)
2. Purpose: The purpose of this input is to validate the user’s credentials so that he may use the system to search the local inventory of the store, view external stores inventories, etc.
3. Source: User
4. Accuracy and Tolerance: The credentials, being a string type the input needs to be exact and will receive no tolerance as user-name and passwords will be considered case sensitive in order to make sure the user logging to our system is a valid one.
5. Unit of Measure: none
6. Timing: none
7. Relationship to other inputs or output: these inputs will be used throughout the whole software processes since all operations need these credentials so that the system performs its tasks accordingly and these tasks are to be applied on the correct user.
8. Screen format/organization: Log in text box user-name [\_\_\_\_\_\_\_\_] password [\_\_\_\_\_\_\_\_\_\_] upper part of a window.
9. Windows format/organization: On the window you will commonly see a tittle below that you will see a log in text boxes and the log in button.
10. Data Formats: char, string
11. Commands Formats: none
12. End Messages: It invokes the inventory program.

**3.1.2 Type- Input**

1. Name: Game stock information
2. Purpose: To tell the system which game the user desires to search availability.
3. Source: User
4. Accuracy and Tolerance: This will be invoked by clicking a search button with any one of these inputs SKU, Category, Description, price or all of the above as long as the mouse is hovered above the button and then performing a left click will execute the input and subsequent script functions to do after the input is received by the system.
5. Unit of Measure: none
6. Timing: none
7. Relationship to other inputs or output: this input will produce an output so that the user may verify or select the game.
8. Screen format/organization: :Search text box SKU[\_\_\_\_\_\_\_\_] Category[x] Description[\_\_\_\_\_\_\_\_] price[\_\_\_\_\_\_\_\_]on the top left
9. Windows format/organization: SKU, Category, Description and price text boxes displayed on the top left and below the search button right next to that on the top right it will have the list box.
10. Data Formats: char, string
11. Commands Formats: none
12. End Messages: none

**3.1.3 Type- Output**

1. Name: Game list viewer.
2. Purpose: To show the user the search results and to find witch one they were looking for and if is in stock or not in stock.
3. Source: ES GameStop Inventory
4. Accuracy and Tolerance: doesn't apply here
5. Unit of Measure: none
6. Timing: none
7. Relationship to other inputs or output: invoked by ES GameStop Inventory receiving a game information input before this output the system invokes.
8. Screen format/organization: Lists the search result in the list box [x] |SKU |Name |T/V |Cat. |N/PO |ESRB |Price |Qty. |Status|
9. Windows format/organization: Same window next to the search inputs.
10. Data Formats: char, string
11. Commands Formats: none
12. End Messages: None

**3.1.4 Type-Input-Output**

1. Name: External inventory search
2. Purpose: If the game is not in stock the user can search for a nearby store that has it in Stock.
3. Source: User
4. Accuracy and Tolerance: The system will show which stores nearby depending on the zip code the user entered have the game it in stock.
5. Unit of Measure: none
6. Timing: none
7. Relationship to other inputs or output: The user will then ask the costumer if he wants to put it on hold, pay or order it and entering the costumers name and email.
8. Screen format/organization: [x] |Str # |Location |Phone # |Qty. |Distance|
9. Windows format/organization: List Box
10. Data Formats: string, char
11. Commands Formats: none
12. End Messages: none

**3.1.4 Type-Input-Output**

1. Name: Hold, Pay or Order
2. Purpose: Put it on hold for the costumer or sell him the game from the store or order the game entering the costumers name and email.
3. Source: User
4. Accuracy and Tolerance: The system will show which stores nearby depending on the zip code the user entered have the game it in stock.
5. Unit of Measure: none
6. Timing: none
7. Relationship to other inputs or output: The user will then ask the costumer if he wants to put it on hold, pay or order it.
8. Screen format/organization: SKU\_\_\_\_ Str#\_\_\_\_\_ Name[\_\_\_\_] Email[\_\_\_]
9. Windows format/organization: Bottom right
10. Data Formats: string, char
11. Commands Formats: none
12. End Messages: Your transaction was successful or Your transaction was unsuccessful.

3.2 **Functional Requirements**

3.2.1 Access to ESILGS

**Table 3.2.1 User Case: Access to ESILGS**

| User Case Name: | Access to ESILGS (Figure 2.2.1) |
| --- | --- |
| Actors: | Primary: Employee  Secondary: ESILGS |
| Pre-Condition:  Post-Condition : | Be an employee of GS Store  The employee is login in the ESILGS  The employee has access to the ESILGS |
| Principal Stage : | 1. The system requires to enter a username      1. The user enter the username 2. The system requires to enter a password 3. The user enter the password 4. The system shows that the employee grant the access to enter the database |
| Alternate Stage : | N/A |
| Exception Stage 1: | 2a. Username and/or password are incorrect.  1.The system doesn’t allow the user to enter to the database |
| Exception Stage 2: | 4a. Username and/or password are incorrect.  1. User can’t login to the ESILGS |
| Exception Stage 3: | 5a. The system shows that the employee don’t grant the access to enter the database |
| Condition: | The time limited exceeded (1 minute) the login prompt will reset. |

3.2.1 Access to ESILGS

**Table 3.2.2 User Case: GSSDBMS**

| Employee Case Name: | GSSDBMS Local Search (Figure 2.2.2) |
| --- | --- |
| Actors: | Primary: Employee  Secondary: GSSDBMS |
| Pre-Condition:  Post-Condition : | Be an employee of GS Store  The Item is in the Store |
| Principal Stage : | 1. The ESSDBMS requires the Employee to input item information. 2. The Employee inputs item information. 3. The ESSDBMS displays the search results. |
| Alternate Stage 1: | 1a. The ESSDBMS requires a barcode for scanning an item.   1. The Employee scans the item. 2. The ESSDBMS searches for item information related to the specific barcode. 3. The ESSDBMS displays the availability and price for the item scanned. |
| Alternate Stage 2: | 1b. The ESSDBMS requires to enter a price   1. The Employee enters the price Item. 2. The ESSDBMS displays the availability of the Item with that price. |
| Alternate Stage 3: | 1c. The ESSDBMS requires to select a category   1. The Employee selects a category. 2. The ESSDBMS displays the availability of the Item under that category. |
| Alternate Stage 4: | 1d. The ESSDBMS requires to select the Item state   1. The Employee select the Item state 2. The ESSDBMS displays the Items with the state selected |
| Alternate Stage 5: | 1e. The ESSDBMS requires to select a Platform  1. The employee select a Platform  2. The ESSDBMS displays the Items with the Platform selected. |
| Alternate Stage 6: | 1.f No Item Info entered or selected    1. The List box will display all of the Items in the GSSDBMS. |
| Exception Stage 1: | 2a. The Employee entered the Item Information Incorrect   1. Not matches found in the ESILGS, the List box will be empty . |

* + 1. ES DBMS External Search

**Table 3.2.3 User Case: GSGDBMS**

| User Case Name: | External Search (Figure 2.2.4) |
| --- | --- |
| Actors: | **Primary: Employee**  **Secondary: ESILGGS system** |
| Pre-Condition:  Post-Condition : | **Be an employee of GS Store**  **The game is in the Store** |
| Principal Stage : | **1. ESILGGS system requires the**  **user to select a store**  **2. The employee will choose a store**  **3. ESILGGS system requires to**  **choose a method of order**  **4. The employee will pick an order**  **method**  **5. ESILGGS system requires**  **secure method to purchase a**  **merchandise**  **6. The employee enters the secure**  **method**  **7. ESILGGS system requires to pick**  **retain method**  **8. The employee enters the retain**  **method**  **9. ESILGGS system requires to**  **enter the client info**  **10. The employee enters the client info** |
| Alternate Stage1 : | **3a. ESILGGS system requires**  **to choose an order of method**  **1. The employee will ask the client,**  **which order of method will**  **be used** |
| Alternate Stage2 : | **7a. ESILGGS system requires**  **to choose a retain method**  **1. The employee will ask the client,**  **which retain method will be used** |
| Exception Stage 1: | **5a. The payment did not went through**  **ESILGGS system because**  **of insufficient funds**  **1. The employee receives a message of**  **decline card** |
| Exception Stage 2: | **3b. ESILGGS system did not sent the**  **request for an order method**  **confirmation**  **1. The employee needs to resend an**  **order method** |
| Exception Stage 3: | **7b. ESILGGS system did not sent the**  **request for a hold method**  **confirmation**  **1. The employee needs to resend a**  **hold method** |
| Exception Stage 4: | **The game is not in the store** |

**3.3 Performance Requirements**

Static Numerical Requirements:

ES DBS has two applications:

* Local: Confined to the store and reliant on the inventory available at the time of the item- lookup.
* Global: Open to every store in the district, region or the whole GS chain, including the main warehouse.

Locally the ESDBS can be used in any terminal at any time inside the store. This number varies per store, due to the category the store belongs to, such as High Volume and Low Volume. The average number of terminals is 5 and the average number of employees working at the same time is 3.

The number of simultaneous users can be one user per terminal company wide. Based on information from a form from the United States Securities and Exchange Commission from 2009, the company has a little over 6,450 locales so the average numbers of simultaneous users at the busiest time would be 19,350.

The amount of information is incalculable since it would depend on the queries of the client at any certain time and that information would be shared between the servers which store the global values and the 6,450 locales which can access it or are affected by it because of a sale, hold or request. The type of information to be shared is personal client information when an item is ordered from the main warehouse o held/bought at a store and the values for the products GameStop handles. This includes but is not limited to: games, systems, accessories, guides, digital content and toys. Meaning that the data being shared will number in the hundreds of Tera Bytes, since last years numbers bordered one 200 TB.

Dynamic Numerical Requirements:

The ESDBS is optimized to react to the ever-changing amount of information that is going to be added or removed from the database, so the peak and normal values would be the same with the exception of the system crashing for some unforeseen reason.

Leaving some wiggle room for circumstances that are out of control, **99%** of the searches should maintain their processing time at less than **1 second**.

When a hold/request is sent to another store they will receive it as soon as it is posted since it updates live, with a **1 second** delay between requests if another one reached the store at the same time. It will sort them out by order to have fair play between the stores and most importantly the clients that are purchasing. When processing orders sent to the warehouse, an order can be finalized in **3 seconds per item** without any delay as long as there is no queue from other stores. With the short amount of time for the orders to finalize, there would only be any waiting time during the November - January season when sales and customer movement reaches their peak and the exchange of information will be double to triple times as fast. The order will require at least **2 seconds** per order to take into account other stores asking for the same item.

**3.4. Logical database requirements**

The GSSDBMS and the GSGDBMS would be access thru our software system ESILGS. This access will be optimized thru the followings requirements:

* The GSSDBMS contains the Item Info the Employee Info and the Store Info.
* The GSGDBMS contains all the data from each DBMS from each Store.
* The database will be updated every 20 seconds. The data must be verifying
* weekly to check for some irregularities and to have the report of the new information.

**Employee**

Obtain Information of

of

**GSSDBMS**

**GSGDBM**

Obtain Information of

of

Access

Information

**Figure 3.4.1 ERD** Diagram

**3.5 Design Constraints**

3.5.1 Hardware restrictions:

* The computers provided by the company are compatible with the program since ESDBMS is an optimization of the currently established Item Lookup.

3.5.2 User system requirements:

* Processor: 233 GHz
* Memory: 4 GB RAM

3.5.3 Server requirements:

* Microsoft-IIS/6.0
* Processor: 8 core processor (3.6 GHz)/Server
* Memory minimum: 16 GB of RAM/Server
* Most-Cost Efficient amount of memory: 32 GB of RAM/Server
* Memory max: 64 GB of RAM/Server

3.5.4 Software Restrictions:

* OS: GS Authorized Customized Windows XP with Integrated Point of Sale Software.
* Web browser: Customized Internet Explorer Browser embedded inside the proprietary OS.

3.5.5 Programming languages:

* PHP (ver. 4.3 or higher)
* JavaScript Library (to work with jQuery)
* jQuery
* Document Information: Cascading Style Sheets
* Encoding: utf-8
* Server: Header: Microsoft-IIS/6.0

3.5.6 Standards Compliance

ESDBMS is an extension of the main system that GS utilizes so as such it does not deal with data altering, report generating or deal with accounting. It uses the user and password securities to keep a log of the hold/requests and orders placed in order to follow up on them, but any payment/customer information is not stored or can be added inside the ESDBMS extension. The log in software is only present when the program is initiated and belongs to the main system.

**3.6 Software System Attributes**

* Reliability

The system will need a proper internet connection when it comes to DBMS external GS stores to check the available merchandise on other stores. The external DBMS will be updated constantly and automatically, just like the local DBMS. The internet connection needs to be with at least a speed of 512 kbps. Even though the system needs a proper internet connection, it won’t interfere with the transactions, unless there is an order or a hold of merchandise been made on another GS store, which will be made with the external DBMS.

* Availability

Item-Look Up system will be only used for its purpose, which is localizing merchandise external & local GS stores, and also making transactions. The system will be only available on GS stores and only used by GS employees on GS store hours. As mention the system external and local DBMS will be available all the time because it will be updated constantly and automatically. Even though the system needs maintenance, these task will be try to be done overnight by the developers, that way the system won’t have any kind of interruptions on GS store hours .

* Security

Our system will require username and password authentication, which will be only used by GS employees who will use their name initials for the username and a four digit password. The authentication will be used for security log-in records on the employees. The computer that will contain our system will be on a restricted area. The GS employees are the only people authorized to have access to the restricted area which is closed for non-employees.

* Maintainability

Although our system will be live if there is an error, the system will send a report immediately to the developers, with the GS employees concern. This report will contain a quick summary of the system error. As soon as the report is received, the developers will get to it as soon as possible. Even though the system’s main functions aren’t that much of independent, the developers will do their best to resolve the problem without changing neither the system concept nor anything else.

* Portability

Our system will definitely have portability. If other GS store’s open the system will simply be installed on the new store computer. The system will have the same process as mention on the Software Requirements Specifications (SRS) document.