

# **Kiichigo**

A Point-of-Sale system for the Raspberry Pi

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# Chapter 1

## Functional Requirements

### 1.1 Client-User

1. command input at bottom of screen, for all typed commands (including user change, sku input, etc)

USER:<USERID> (USERID replaced with ‘\*’)

<ITEMSKU>

2. some commands (like user change) replace following characters with \* (e.g. USER:\*\*\*\*\*). This should be done on the fly, so characters don’t show up at all.

3. Track Inventory, including serial numbers

4. Create Transactions

On Transaction: Customer, Taxable, Discount, Custom Fields

Per Item: SKU, Description, Ext. Description, Qty, Price, Taxable, Total Price

5. Create Item Entries

6. Lookup Transactions

7. Lookup Customer History

8. Save Transactions (Hold and Layaway)

Option to input item SN immediately or later

Option to print hold/layaway sticker for each item

9. Print Receipts

10. Print Labels, including barcodes

11. Scan barcodes using USB scanner

12. Receive Inventory

13. Transfer Inventory Out
14. z report
15. x report
16. Input opening amounts (if static not defined by admin)
17. Input closing amounts
18. Generate Specific reports (Saved by manager)
19. cash drop
20. cash add (put money in register...)
21. Lookup item
  - option for having levels of lookup
  - first, show categories, then subcat, then subcat... until user doesn't select any subcat, then will show list of all items that fit all cat and subcat filters. will search by name (starting from beginning) from there, or can switch to "search by keyword" mode

## 1.2 Client-Manager

1. Create Users
2. Restrict User Privileges
  - z/x reports
  - Information Shown on x/z reports
  - Show over/short amounts
  - cash drop/add
  - Receive Inventory
  - Transfer Inv. Out
  - lookup customer history
  - Item Creation
  - Allow refunds/voids
  - define which transaction fields user can modify
3. Delete Users
4. Generate Reports (custom too)
  - Recommended items to order

## 1.3 Client-Admin

1. Add New Terminal to Cluster
2. Remove Terminal from Cluster
3. e-mail alerts to admin about problems
  - Terminal stops responding
  - Suspicious Tx Void/refunds
  - Over x number of deletions/changes to DB.
4. Customer information fields add/delete
5. Customer Information Fields name rename
6. Item Information Fields name rename
7. Define Custom Fields for Transaction
8. Set standard amount for till's to have on open
9. View Database deletions until end of day
10. If over x number of deletions/changes to DB, don't delete the changes at end of day.

## 1.4 Server Database

1. Option to implement pseudo deletions and pseudo changes
2. Pseudo Changes: Any changes to database make a "deleted" version of the row, and THEN change it, so you can see the changes later (until end of day).
3. Pseudo Deletions: Any deletions to database aren't actually deleted until end of day.
4. Changes to fields
5. Daily backups of the database are archived for x days back (daily backup done before daily deletions).
6. SQL Changes are done local, then broadcast
7. When client is idle, then synchronize received changes
8. big changes need to roll between clients so the load is spread (1->2; 1->3, 2->4; 1->5, 2->6, 3->7, 4->8, 5->9)
9. Backup mode for terminals (Just holds database and waits for a terminal to fail, when it will ask what terminal it should replace.)

## 1.5 Hardware

## Chapter 2

# Non-Functional Requirements

### 2.1 Client-User

### 2.2 Client-Manager

### 2.3 Client-Admin

1. Setup for Terminals is simple (plug it in and it asks if it's the first or not, etc)

### 2.4 Server Database

### 2.5 Hardware

1. Compatible with wireless
2. Compatible with various printers
3. Compatible with barcode scanners
4. Compatible with Touchscreen (maybe...)
5. Compatible with employee card scanner

## Chapter 3

# Use Cases

## Chapter 4

# State Diagrams



## Chapter 5

# Database Schematic

## Chapter 6

# Class Diagrams

## Chapter 7

# Sequence Diagrams

## Chapter 8

# Test Cases