**Supplementary specification**

**Revision history**

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| --- | --- | --- | --- |
| Version | Date | Description | Author |
| Inception phase | Sept. 8, 2015 | First draft of six use cases. Two are fully-dressed and the other four are brief. | SG Technologies |

**Functionality**

* Error handling

all errors occurring log to stable storage

* Security

all user information requires user authentication

**Usability**

* Human factors
* The text on POS screen should large enough to be seen from 1 meter
* The POS system should be easy to use for cashiers
* The checkout process should be precise, and quick for customer’s convenience
* The management system should clearly list information, and be easy for manager to search and update

**Reliability**

* Recoverability
  + If one register POS system crashes, other registers can finish the checkout process
  + If store has a power failure, there is backup electrical system for the store to continue operating
  + All information stored in the management system has backup on the cloud

**Performance**

Our goal is to make the checkout process easy and quick to meet customer’s expectation. The only bottleneck we have is that we cannot control the time for requesting credit authorization, but we would try to make it responds under 30 seconds.

**Supportability**

* Adaptability: when process sale with different customers, it should be able to plug new business rules under customer’s requirements. The system can be easily updated without rework other parts of the system.
* Configurability: The system needs to be configurable and flexible for its business and performance needs.

**Hardware constraint**

* Touch screen monitor
* Barcode scanner
* Keyboard for entering barcode and price
* Receipt printer
* Credit/debit card reader
* Signature reader
* Computers for management system

**Software constraint**

* Interface for management system
* Inventory record system to keep track of inventory
* other external system

**Other design and implementation constraints**

Most of the time, we try to maximize the utility of Java to make the POS system easy to implement.

**Legal concerns**

* Each product sold or rent by POS system should be in good quality.
* All tax rules must under law restraint.
* We allow the resale of products if the products have license on resale.

**Physical environment concerns**

The store’s temperature should always be suitable for human. In summer, the store should provide airconditioner, and in winter, it should provide heat.

**Internationalization concerns**

* The language shown on screen should be in local language.
* For measurement, the system should always use international unit.
* Management system can change to at least eight languages under user’s need.

**Information in domains of interest**

* Pricing: every product has one original price, and with price rules in the business rules, tax rules and other external effects, the product also has one permanent markdown price. Product will be sold at permanent markdown price.
* Sales Tax: A sales tax is a tax paid to a governing body for the sales of certain goods and services. Usually laws allow the seller to collect funds for the tax from the consumer at the point of purchase. It is very complicated to compute the tax to be paid, we requires outside tax calculation system to calculate it.
* Credit and debit Payment: When customer makes payment with credit/debit card, the payment authorization service will receive the request and approve it. After approvement, the amount customer needs to pay will be recorded by the service system in the account needed to be paid to seller. The authorization service will transfer the money to seller’s account in the end of every day. The authorization service will also charge a service fee for each transaction.