**Quality Attribute Ranking Table**

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| --- | --- | --- | --- |
| Quality Attribute | Important (base on customer) | Difficult level (to implement) | Priority |
| Performance | **High** | **High** | **High** |
| Availability | **High** | **High** | **High** |
| Usability | **Medium** | **Low** | **Low** |
| Security | **Medium** | **Medium** | **Medium** |

Base on the Quality Attribute Ranking Table, team decide to choose two quality attributes are: Performance and Availability to develop

1. **Performance**: this is sales system; we must always ensure that customer service was not delayed. Intervals such as scan the point card, bar code scanning, displaying results... will be done in the shortest time possible to avoid the dissatisfy customer. Things that need attention are: increased client response time, reduced throughput, and server resource over utilization. Ensure that you structure the application in an appropriate way and deploy it onto a system or systems that provide sufficient resources.

**Example of Performance Attribute:** Users initiate 100 transactions per minute at 100 POS terminal under overload operations, and these transactions are processed with an average latency of two seconds.

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| --- | --- |
| Portion of scenario | Possible values |
| Source | User |
| Stimulus | 100 transactions per minute at 100 POS terminal |
| Artifact | Process |
| Environment | Overload operation |
| Response | These transactions are processed |
| Response Measure | 2 seconds |

1. **Availability:** This system has two servers located at the head office server and POS terminal, if the failure occurs at head office server or the network; we need the system still available and working normal at the POS terminal.

**Example of Availability Attribute**: The temporary failure of the head office server, the POS terminal will be still working securely. The POST terminals can carry out the sales operation efficiently using locally stored data as much as possible.

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| Portion of scenario | Possible values |
| Source | Head office database |
| Stimulus | Temporary failure of the head office server |
| Artifact | Process |
| Environment | Normal operation |
| Response | To be still working securely and carry out the sales operation efficiently using locally stored data. |
| Response Measure | No down time |

1. **Usability:** The application interfaces must be designed with the user and consumer in mind so that they are intuitive to use, provide a good overall user experience. This quality attribute help the user (cashier) easier to manipulate functions to help the sale progress better.
2. **Security**: we must consider to the capability of a system to reduce the chance of malicious or accidental actions outside of the designed usage affecting the system, and prevent disclosure or loss of information. Improving security can also increase the reliability of the system by reducing the chances of an attack succeeding and impairing system operation. Securing a system should protect assets and prevent unauthorized access to or modification of information.

* The factors affecting system security are confidentiality, integrity, performance and availability. So when we apply the performance and availability attribute to this system, we should make attention to balance or tradeoff between them.
* The features used to secure systems are authentication, encryption, auditing, and logging