

# Beyond Functionality: Software Quality Attributes

Chapter 14

# Non-Functional Requirements

Non-functional requirements:

- Quality attributes
- Constraints
- External interface requirements

# Some Quality Attributes

**TABLE 14-1** Some software quality attributes

<b>External quality</b>	<b>Brief description</b>
Availability	The extent to which the system's services are available when and where they are needed
Installability	How easy it is to correctly install, uninstall, and reinstall the application
Integrity	The extent to which the system protects against data inaccuracy and loss
Interoperability	How easily the system can interconnect and exchange data with other systems or components
Performance	How quickly and predictably the system responds to user inputs or other events
Reliability	How long the system runs before experiencing a failure
Robustness	How well the system responds to unexpected operating conditions
Safety	How well the system protects against injury or damage
Security	How well the system protects against unauthorized access to the application and its data
Usability	How easy it is for people to learn, remember, and use the system
<b>Internal quality</b>	<b>Brief description</b>
Efficiency	How efficiently the system uses computer resources
Modifiability	How easy it is to maintain, change, enhance, and restructure the system
Portability	How easily the system can be made to work in other operating environments
Reusability	To what extent components can be used in other systems
Scalability	How easily the system can grow to handle more users, transactions, servers, or other extensions
Verifiability	How readily developers and testers can confirm that the software was implemented correctly

# Pairwise Comparison of Sample QA

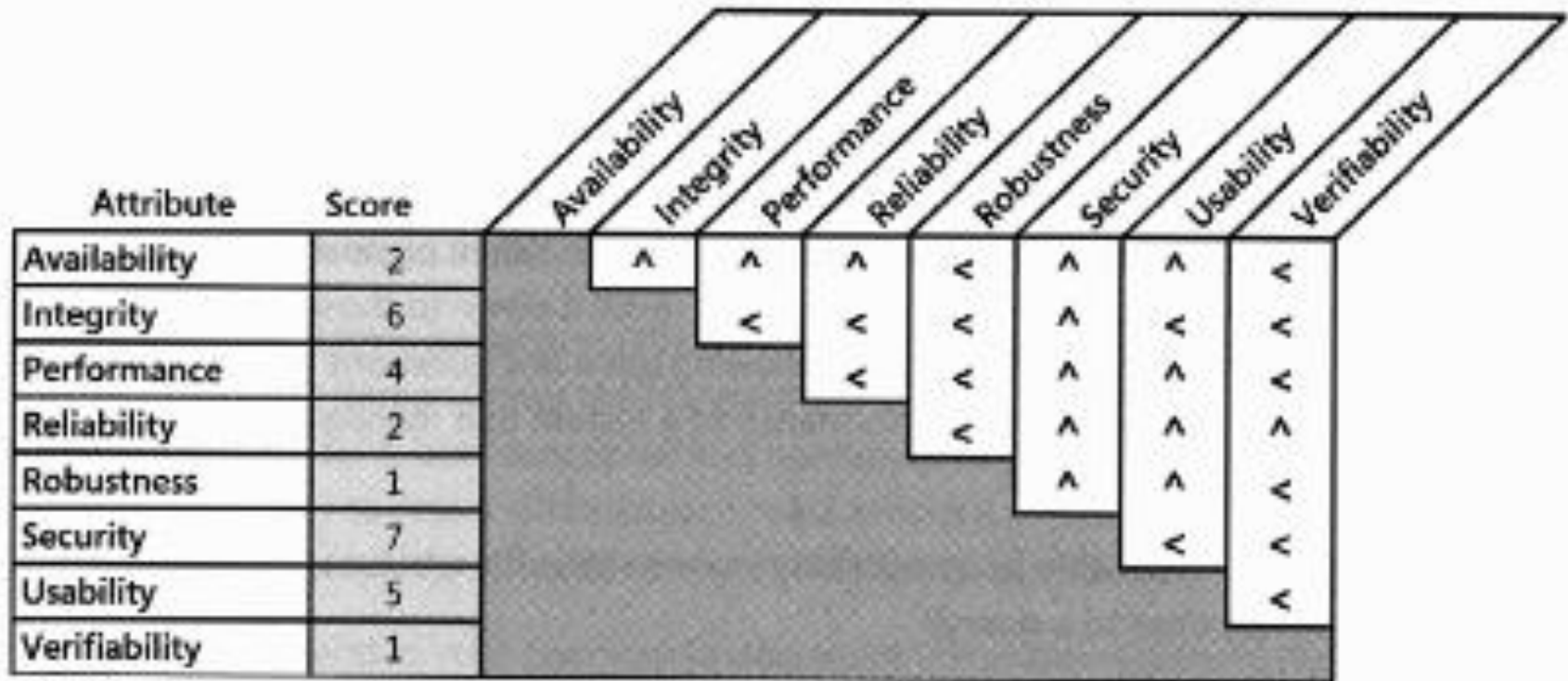


FIGURE 14-1 Sample quality attribute prioritization for an airport check-in kiosk.