

IT 314 SOFTWARE ENGINEERING

*FUNCTIONAL AND NON-FUNCTIONAL
REQUIREMENTS*

FUNCTIONAL REQUIREMENTS

A functional requirement document defines the functionality of a system or one of its subsystems. It also depends upon the type of software, expected users and the type of system where the software is used.

Functional user requirements may be high-level statements of what the system should do but functional system requirements should also describe clearly about the system services in detail.

An example of a **functional requirement** would be:

- A system must send an email whenever a certain condition is met (e.g. an order is placed, a customer signs up, etc).

A related **non-functional requirement** for the system may be:

- Emails should be sent with a latency of no greater than 12 hours from such an activity.

NON-FUNCTIONAL REQUIREMENTS

The functional requirement is **describing the behavior of the system** as it relates to the system's functionality.

The non-functional requirement **elaborates a performance characteristic** of the system.

EG: NON-FUNCTIONAL REQUIREMENTS

Performance requirements Requirements about resources required, response time, transaction rates, throughput, benchmark specifications or anything else having to do with performance.

Modifiability Requirements about the effort required to make changes in the software. Often, the measurement is personnel effort (person- months).

Portability The effort required to move the software to a different target platform. The measurement is most commonly person-months or % of modules that need changing.

Reliability Requirements about how often the software fails. The measurement is often expressed in MTBF (mean time between failures). The definition of a failure must be clear. Also, don't confuse reliability with availability which is quite a different kind of requirement. Be sure to specify the consequences of software failure, how to protect from failure, a strategy for error detection, and a strategy for correction.

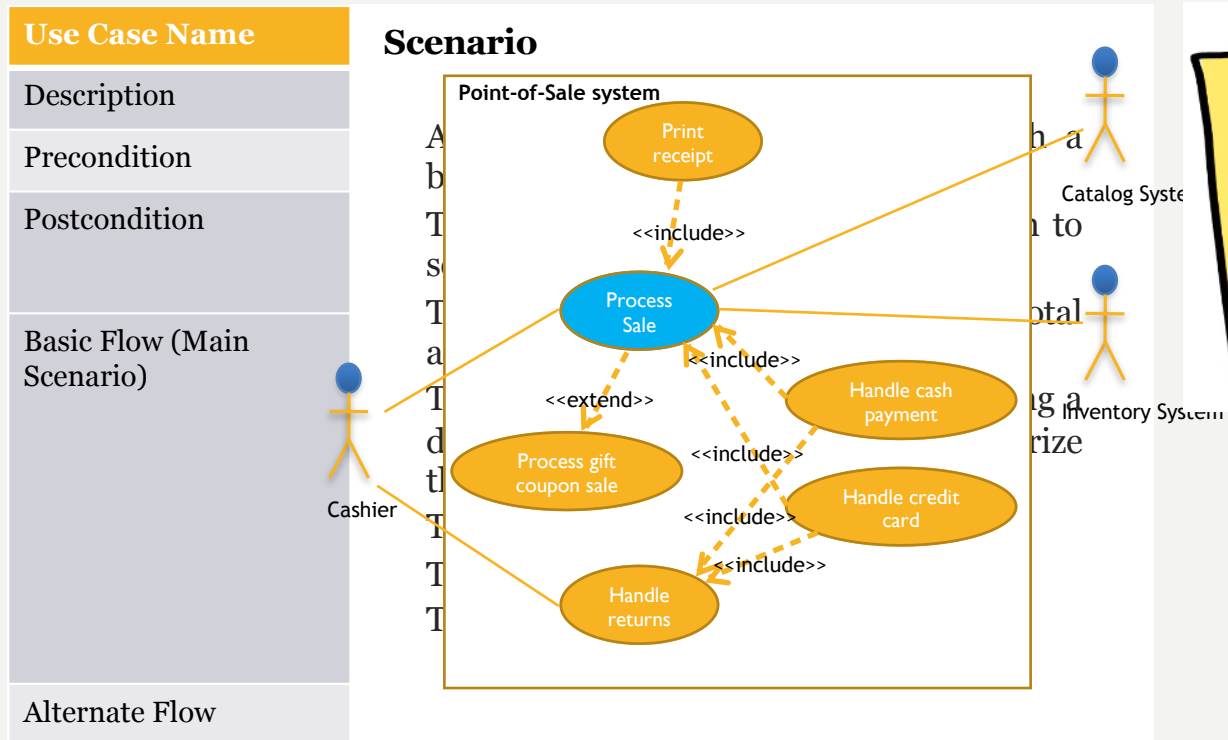
Usability Requirements about how difficult it will be to learn and operate the system. The requirements are often expressed in learning time or similar metrics.

Legal There may be legal issues involving privacy of information, intellectual property rights, export of restricted technologies, etc.

Bus Facility to and fro between Campus, Railway station, Airport and some city points



USE CASE & USER STORIES





Questions??