

**Requirements and Specification, ESOF 328, Spring 2022**  
**Beyond Functionality: Software Quality Attributes, Chapter 14, March 28<sup>th</sup>**

Non-Functional requirements – A description of a property or characteristic that a software system must exhibit or a constraint that it must respect, other than an observable system behavior.

Non-functional requirements:

- Quality attributes
- Constraints
- External interface requirements

Quality attribute – A kind of nonfunctional requirement that describes a quality or property of a system. Examples include usability, portability, maintainability, integrity, efficiency, reliability, and robustness. Quality attribute requirements describe the extent to which a software product demonstrates desired characteristics, not what the product does.

When writing quality attributes remember the mnemonic SMART:

- S - Specific
- M – Measurable
- A – Attainable
- R – Relevant
- T – Time-sensitive

Example:

“95 percent of catalog database queries shall be completed within 3 seconds on a single-user 1.1-GHz Intel Pentium 4 PC running Microsoft Windows XP with a least 60 percent of the system resources free.” (Page 281)