

# **Analytical Thinking: Assessments and Assertions**

**Jeff Offutt**

**<http://www.cs.gmu.edu/~offutt/>**

**SWE 632**

**User Interface Design and Development**

## **Assessments**

**Judging or determining some quality about a  
person or situation**

- **He is a good teacher**
- **She is a good student**
- **He is a good husband**
- **She is a good researcher**
- **He is an effective manager**
- **He is quite tall**

## Assertions

Statements that can be either True or False;  
the validity is observable

- His exams cover all the material
- She always reads the material before class
- She has all As
- He always considers her feelings
- She has published more than 40 papers
- Her papers are referenced hundreds of times
- The results of her research are being put into practice
- His employees always achieve their goals
- His employees give him above-average reviews
- He is 180 cm tall

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## Preparation for Action

An assessment is often made as a preparation  
for action

- Accepting a job
- Giving a promotion
- Making a recommendation
- Working on a project
- Taking a class
- Voting for a candidate
- Buying a car

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# Grounding

**An assessment is well grounded if the assertions *adequately* support the assessment**

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# Standards

- The standards for whether a set of assertions adequately support the assessment *varies* and are determined by the *community*
- Reasons that a set of assertions do not meet the standards for supporting an assessment:
  1. not enough assertions
  2. incorrect assertion
  3. different standards

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## Levels of Competence—Performance

1. **Beginner**  
No knowledge or skills
2. **Novice**  
Understands rules or process
3. **Competent**  
Usually does what is expected
4. **Proficient**  
Others admire performance and sets a new standard for others
5. **Virtuoso**  
Widely admired and inspirational, helps others rise to new heights of excellence
6. **Master**  
Superior performance at a level that most could never reach

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## Levels of Competence—Grades

1. **A**  
Superior demonstration of knowledge
2. **A-**  
Excellent demonstration of knowledge
3. **B+**  
Understands most material
4. **B**  
Performs as expected, understands most material, some problems
5. **C**  
Significant lapses in knowledge, mostly adequate
6. **F**  
Inadequate, most material not learned

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## Summary—Usability Evaluations

- Every statement in the usability evaluations should be an assertion
- These should lead to assessments:
  - Is the UI User Appropriate ?
  - Is the UI good enough ?