

# Principles of Software Engineering: System Deployment

Ethan Jackson And Wolfram Schulte,  
Research in Software Engineering (RiSE)  
Microsoft Research



# Grading

- ▶ Project 1 graded, working on Project 2.

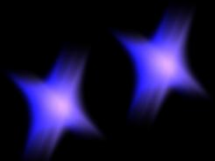
Correctness of Solution (C)	Application of Formalism (F)	To Boldly Go (B)
2 Perfect solution	2 Deep and appropriate	2 Major extensions
1 Minor glitches	1 Solid application	1 Special insights / features
0 One significant problem	0 Basic usage	0 Solid approach
-1 Several significant problems	-1 Insufficient application	
-2 Doesn't work	-2 Little or no use	

- ▶  $grade = 3.4 + 0.1 \times (C + F + B).$



# Goals

- ▶ Based on the FORMULA cloud deployment example (already on website) develop your own model of software components and computing nodes.
- ▶ Software components require memory, CPU time, etc...
- ▶ Computing nodes provide memory, CPUs, other resources. There may be heterogeneous kinds of CPUs.



# Goals

- ▶ Build a “Software Component” domain in FORMULA where you can describe systems of software components.
- ▶ Build a “Computing” domain in FORMULA where you can describe available computing resources.
- ▶ Build a “Mapping” domain which explains how software can be mapped to hardware. Should include constraints, e.g. code must fit into memory.
- ▶ Synthesize a valid architecture by constructing a partial model and using the FORMULA model finder.

# Thanks And Questions!

<http://www.cs.washington.edu/csep503>

