Hints for Writing Specifications

Jeannette M. Wing*

School of Computer Science, Carnegie Mellon University,
Pittsburgh, PA 15213, USA

Based on my experience in teaching formal methods to practicing and aspiring software engineers, I present some of the common stumbling blocks faced when writing formal specifications. I've broadly categorized the issues along the following dimensions:

- Figuring out why you are going through this specification effort. What do you hope to get out of using formalism?

- Figuring out what of the system you want to specify.

- Figuring out how to specify. The most important hurdle to overcome is learning to abstract. I also give specific suggestions on how to make incremental progress when writing a specification.

- Figuring out what to write down. Learn a formal method's set of conventions but do not feel constrained by them. Also, we all make logical errors sometimes; I point out some common troublespots in getting the details of a specification right.

I address all these issues by giving hints to specifiers. My talk should be of interest not only to teachers of formal methods but also to their students.

* This research is sponsored by the Wright Laboratory, Aeronautical Systems Center, Air Force Materiel Command, USAF, and the Advanced Research Projects Agency (ARPA) under grant number F33615-93-1-1330. Views and conclusions contained in this document are those of the authors and should not be interpreted as necessarily representing official policies or endorsements, either expressed or implied, of Wright Laboratory or the United States Government.