Objectives

Textbook
- Revise or rewrite all 8 chapters

Teaching Tools
- Create a set of teaching tools through the development and testing of new lecture slides
- Effectively use these tools and the text by teaching team members

Problem Sets
- Exhaustive testing and revision of all chapter exercises

Critical Barriers
- Difficult to write and edit 10 chapters in only 4 months
- Recognizing the need to modify team structure and efficient integration of this new structure -- allowing the addition of two new chapters
- Coming together as a team

IPRO Highlights
- 14/14 Project Plan
- 16/16 Midterm Report
- 16/16 Ethics Document

References:

Development Cycle

Begin Chapter

Technical Team: Lecture chapter

Editing Teams: Begin new chapter

Exercise Team: Begin homework
Comment new on chapter

Editing Teams: Modify new chapter

Technical Team: Grade homework

Exercise Fixing Team: Update exercises

Chapter Complete

IPRO 328
Testing and Improving a New Text for Teaching Computer Science

Today’s CS Textbooks
Teach only about programming languages, and neglect the most important aspect of computer science: the algorithmic approach to problem solving. Large texts scare new students with arcane and overly complex languages.

Tomorrow’s CS Textbook
This IPRO revised and rewrote a new edition of a textbook drafted by IIT’s Dr. Grossman and Dr. Frieder. This book includes:
- Relevant text
- Chapter exercises
- Side bars and figures
- Introductions and appendicies

The Crowning Jewel
The Ruby language was chosen for:
- Power
- Ease of use
- No previous CS course textbook
- Intuitive nature
- Help new users learn computer programming
- Acceptance from major corporations like: IBM, Cisco, Amazon, Qualcomm, Siemens, Cnet, NASA, BBC, and Yahoo!
- 743% increase in Ruby book sales in 2006
The Team Behind the Text
In order to accomplish this literary feat, an intelligent and diverse team was required.

**Students**
- David Charles Allen  
  5th year Political Science
- Nicholas Bathum  
  3rd year Computer Science
- Katherine Hammes  
  3rd year Chemical Engineering
- Seon Jeong  
  4th year Mechanical Engineering
- Leland Johnson  
  4th year Computer Science
- Roman Kofman  
  4th year Computer Science
- Noh Hyup Kwak  
  4th year Electrical Engineering
- Vivek Patel  
  3rd year Biochemistry
- Phillip Rymek  
  3rd year Computer Science
- Peter Schmitz  
  3rd year Computer Science
- Michael Tilatti  
  3rd year Aerospace Engineering
- Harry Tran  
  3rd year Biomedical Engineering

**Technical Team**
- Leland Johnson, Phillip Rymek
- Created lecture slides and conducted class lectures
- Graded all the homeworks
- Commented on all chapters

**Exercise Team**
- David Allen, Nicholas Bathum, Seon Jeong, Noh Kwak, Vivek Patel, Peter Schmitz, Michael Tilatti
- Learned Ruby using the textbook
- Completed homework to test effectiveness of the text
- Commented on all homeworks and chapters

**Exercise Fixing Team**
- David Allen, Seon Jeong, Noh Kwak, Vivek Patel, Michael Tilatti
- Modified, deleted, and created chapter exercises

**IPRO 328 Future Plans**
To continue IPRO 328’s success, the textbook will be used in a real world setting - an IIT classroom.

**IPRO Results:**
- 1100.9 Person Hours
- 12 IPRO Team Members
- 10 Total Chapters
- 3 New Chapters
- 189 Total Exercises
- 35 New Exercises
- 23 Changed Exercises
- 14 Deleted Exercises
- 1015 Chapter Text Insertion/Deletions