The purpose of this project is to develop software/hardware in the context of a project development cycle. The idea is to pick a company within the microprocessor technology markets that you would like to work for and as a team project what product to develop for that company. Larger groups (4 or more) are expected to do more work.

Week by Week tasks:

Your group has to accomplish the following goals, although some are overlapping.

- **Week 1 (Thursday March 24):** Hand-in a statement-of-work (SOW) of the project application and Microsoft Project-like graph which lists tasks to be done by rows, and weeks by columns. For each task bar within the graph, list who does what (including software testing phase). Project software application development is concurrent with market analysis.

- **Week 2 (Thursday March 31):** Hand in on "paper" (a) Project status review write up (b) High level flow charts and (c) prototype/sample code.

- **Week 3 (Tuesday April 5):** 5 minute oral speech (3 slides or chalkboard) and brief *draft* write up of the product market and how it compares to **Intel**. That would include stock price comparison over last 3 years, revenues of the company compared to **Intel**, define the market you are targeting, market capitalization, list major players in the market, background of CEO, what does the annual report say their market growth is and what news groups say: money.cnn.com, bloomberg.com, finance.yahoo.com, etc.

- **Week 4 (Thursday April 14):** Project status review write up. Hand in on "paper" Screen shots of running code.

Week 5: Project final deliverables (Thursday April 21):

- **CDROM:** A software standalone application written on a cdrom including *all* docs (README.txt, help page, 2 page Product description) and how-to-build-it (i.e. script). If "not" using J51 (i.e. different machine language), then you can only use public domain software which must also be included on the cdrom (i.e. source and binaries). Any "prototype software" or "extra software" must also be included. Must be able to compile with *public domain* software such as "gcc", "perl", "javac".

- **PAPER:**
  (a) Source code, Flow charts, Screen Shots and Market write-up (from Week 3).
  (b) 2 page Product description which contains the following paragraphs:
    - Product Application,
    - Product Market (also, Licensing opportunities)
    - Product Description (high level description)
    - Legal Liability: Patent or Licensing infringements, and Product Liability
    - Technical Description: Prior Art, theory, how it works.

Topics can range from software to hardware based:

- **Software topics:** **J51**-based or other microcomputer-based architectures which use public domain software. Assembly code should be tight code and maximize subroutines. Text-based Tic-Tac-Toe. Other games by request only.

- **Hardware topics:** Write your own text-based 8051-like simulator for 12 or more instructions for another architecture, for example: Zilog Z180 or Motorola/FreeScale 68HC08. Simulator must be able to read Intel hex file format for machine instructions. It is not required to assemble instructions, but the simulator should be able to dis-assemble. Basic commands should show registers or memory (i.e. print regs), execute an instruction (i.e. step or step 100), modify registers or memory, quit. Groups greater that 2 must do more instructions or add simulated i/o (i.e. text display).