In this homework, port your software written in homework 1 to ARM Integrator development system. If the performance of your design is constrained by the file I/O, you may load the whole data into memory first and then process it. Optimize your software for the target system you use.

You have to take the following considerations into account:
- performance & constraint of different types of memory (SSRAM, SDRAM, and Flash, and possible the cache)
- data alignment and data layout (in which type of memory)
- available data bus and memory bandwidth

Note:
- The IP you designed must be off-the-shelf. (Your IP will be compared with the accessible one in the future.)
- The application you choose must be convincing.

**Deliverable**
Your deliverable has to include:
1. Report that describes your idea and result.
   - **Performance**: use the timers/counters to record the time your program spends and show it on the host console.
   - **Memory requirement**: describe your memory organization for each stage of data processing of your software in detail and explain how it works. Evaluate the maximum memory requirement during the execution of your program. Note that the same memory space can be shared with different data structures if their life times are not overlapped. Also, the memory requirement for the program itself and the variables have to be mentioned if you modify your program in homework 1.
   - **Refinement for target system**: describe the differences between the original program and the optimized one for target system in detail, and the reasons you do the changes.
   - **A convincing application**: describe how to integrate your IP in a convincing application and how to use your IP when you do some operation.
2. Source code of your software.
3. All setting and information required for regenerating the result shown in your report.
State your approaches, key ideas and results clearly and formally, and avoid redundant description. Your report can be written in Chinese or English. However, make sure your report is readable. A manual report won’t degrade your score, unless it is scrabbled.

**Important Date**
Due : 5:00 p.m. Wednesday, Dec. 4, 2002

**For more information**
- The contents of this document: Kun-Bin Lee or Yu-Ming Chang
- ARM development tools: contact the TA with the number = your team number %4

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