Assignment 8: FPPS and FPDS (investigation)

Fixed-priority scheduling with deferred pre-emption (FPDS) has been proposed as an alternative to fixed-priority pre-emptive scheduling (FPPS) for at least two reasons, being:
1. cost of arbitrary pre-emption of FPPS;
2. complexity of resource access protocols for FPPS.

For this assignment, you have to study the literature, to investigate the reported experiences and consequences of applying FPDS rather than FPPS. In particular, the following issues should be investigated:

- **development considerations:**
  - how to insert pre-emption points in the code, e.g. by a compiler or manually;

- **architectural considerations:**
  - pipelined processors versus general purpose processors;
  - cache memory, local memory, and global memory;
  - interrupts;
  - multi-processor system, with FPDS on a dedicated co-processor (e.g. a DSP) and both scheduling and interrupt handling (and optionally other kinds of control as well) on a general purpose processor.

- **application domains,** e.g. control processing and high-quality video processing;
- **real-time operating systems** (RTOS): which RTOS provides support for FPDS.

You are expected to give a 45 minutes presentation (*including* time for questions).

**Further information**

In case you have any questions concerning this assignment, please contact:

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