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#include <pthread.h>
#include <set>
using namespace std;
///!\structure _restartableThread
///!\brief structure used to encapsulate a thread with information for it's reseting and
///!\for keeping track of read_data, necessary for RAW dependency checking.
///!\Limitations:
///!\!

struct _restartableThread {
    ///!\mutex related to thread
    pthread_mutex_t _mutex;

    pthread_t _thread;

    void*(*_instructions)(void*);
    void* _args;

    ///!\set for tracking the shared_data items that the thread has read.
    set<void*> _read_data;

    _restartableThread() {
        _instructions=NULL;
        _args=NULL;
        pthread_mutex_init (&_mutex, NULL);
    }
};

```