

Documentazione phase3

initProc.c

Contains test and phase3's global variables.

Initializes the swap table, the swap PCB and 8 support structures.

pcb_PTR newProc: calls the ssi service to create a new process.

void initSupportStruct: supporting function. Sets the support structure asid, the context for exception handling, the private page table entryHi and entryLO.

support_t *getSupportStruct: sends a message to the SSI. Returns the support structure of the process that called the function.

void suicide: sends a message to the SSI to kill the process. Used by the sst when the terminate service is called.

vmSupport.c

Contains the swap pool table.

void initSwapStructs: initializes every swap table asid entry to -1 to indicate the empty frames.

void cleanSwapTable: similar to initSwapStructs but clears a specific asid from the table.

void enableInterrupts, disableInterrupts.

void pageFaultExceptionHandler: The pager, or the TLB exception handler. Mutual exclusion for the swap table is implemented by usage of message passing. The process sends a message to the swap pcb and waits for its response.

void flashDev: function to read/write flash devices, requests doIO service from SSI.

void updateTLB: function to update the TLB.

unsigned int selectFrame: function for the page replacement algorithm. Searches an unoccupied frame in the swap table, if none returns the index of an occupied frame.

sysSupport.c

Contains the general exception handler of the support level.

void generalExceptionHandler: After checking the cause register of the support struct it sorts the exception into either the (support level's) syscall handler or the (support level's) program trap handler.

void usyscallHandler: Handles, on behalf of the Uproc, the support level's syscalls, SENDMSG and RECEIVMSG.

void programTrapsHandler: releases the mutex, terminates the process via a SYS2 request (sends a message to its SST to terminate).

sst.c

Contains the system service thread and its services.

void SSTrequest: sorts into the requested service.

unsigned int getTOD: returns the number of milliseconds since the system was booted/reset.

void terminate: terminates the sst and its child process. Sends a message to test to communicate the termination.

unsigned int writeString: function for both writeprinter and writeterminal. Sets the correct commandAddress and commandValue and requests the dolo

pcb_PTR initChild: initializes a child process' registers to then use the initProc.c's newProc function that requests the createprocess SSI service.