Lab 4 Kernel Modules

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ОТКРЫТАЯ МОБИЛЬНАЯ ПЛАТФОРМА

TASK

- Create simple kernel module with **chardev** and implement following functions:
- Basic functions (open, read, write, release);
- Configurations function (ioctl).

- Create STACK data structure on implemented chardev. Use **dynamic memory allocation** and prepare data structure for **simultaneous access** (from multiple threads/processes). Stack must handle int32_t numbers only.
- **read** op must act as `pop` from the stack. **Write** op must as act as `push` to the stack.
- **ioctl** op must act as configuration operation – ability of changing **stack size** must be provided.
- Add error codes according to man and cover common corner cases (stack is empty, stack is full and etc.)

- Graded output: source code with report including screenshots. (in PDF)

Acceptance criteria

- **A (20 points) –** kernel module properly implemented, dynamic memory is used, data structure is protected for simultaneous access (mutexes, spinlocks, etc.), error processing implemented, corner cases processed, compilation warning, some minor and style issues are acceptable
- **B (15-19 points)** – minor issues not related to overall usability (for ex. loctl() call does not return correct error code).
- **C (10-14 points)** – major issues (for ex. not enough locks, wrong locks usage and etc.)
- **D (<10 points)** – module more or less works but no locking implemented or no dymanic memory allocations are used.

Thanks for your attention!

About US

Open Mobile Platform, LLC

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- Founded in 2016
- Offices in Moscow, Innopolis and St.Petersburg
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