6-2: FFI (Practice)

Artem Pavlov, TII, Abu Dhabi, 21.04.2025

Create new folder

- Create new branch p62 in the repository

- Create new folder p62

- Create new library crates: libminiaes, miniaes-sys, and miniaes

- Add the crates to the workspace members list (e.g. miniaes will be added as p62/miniaes)

Implement libminiaes shared library

- Copy implementation of the AES functions from the previous day exercise and expose them as FFI functions

- Compile libminiaes.so (see the target/ folder after cargo build --release) and copy it to /usr/local/lib/

- Generate header file for the library using cbindgen and save it in p62/libminiaes/include/ folder

Implement miniaes-sys crate

- Implement unsafe bindings to the libminiaes shared library in the miniaes-sys crate

- The bindings can be created either manually, or using rust-bindgen

Implement safe wrappers

- Implement a safe wrapper for the libminiaes shared library on top of the miniaes-sys crate in the miniaes crate

- Write integration tests for the resulting crate