AMOS SS24 Project 7 Flash Bootloader
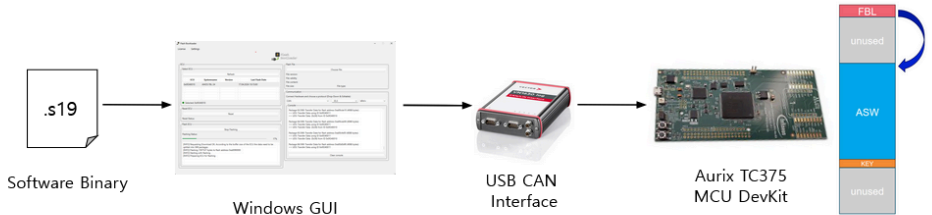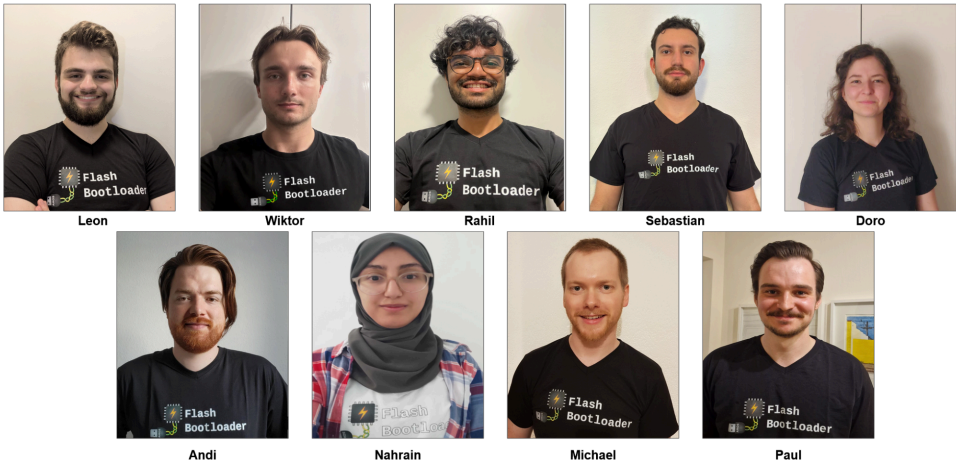
Please use the following template for creating your project report.

Project name	Flash Bootloader
Project mission	Our project mission consists mainly in developing a robust Flash Boot Loader with a user-friendly GUI that enables users, regardless of their technical expertise, to update the firmware on Aurix-based TC375 automotive embedded devices via the CAN Bus in an efficient and easy way. The project structure should allow Hella to adapt it to different platforms.
Industry partner	FORVIA HELLA
Team logo	
Project summary	The Flash Bootloader project consists of two parts that closely work together. On the one hand we developed a Windows GUI that enables the communication to embedded devices connected to the CAN bus. The main function of the GUI is the flash functionality based on a selected flash file and the corresponding microcontroller. Valid application software can easily be flashed by hitting the flash button. The flash process is fully automated and also includes validation of the selected flash file. As counterpart the flash bootloader firmware was developed to be running on the microcontroller that receives the application software update. This software handles the communication from the GUI and writes the application binary into the flash of the microcontroller. Bundled with a robust key mechanism it enables the start of the new application software once the flashing was successful. Furthermore the software architecture enables porting of the flash bootloader to other microcontrollers besides Aurix TC375.
Project illustration	

Team photo	
	Leon Wiktor Rahil Sebastian Doro
	Andi Nahrain Michael Paul
Project repository	https://github.com/amosproj/amos2024ss07-updating-flash-boot-loader
Additional information	