

Modbus gateway





Team Presentation



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Introduction 1/2

- Modbus gateway
 - Master mode
 - Slave mode
- Backend on ESP32
 - Web Server



Introduction 2/2

- Wi-Fi setup
 - Captive portal
- Web interface
 - Configuration page
 - Analytics page

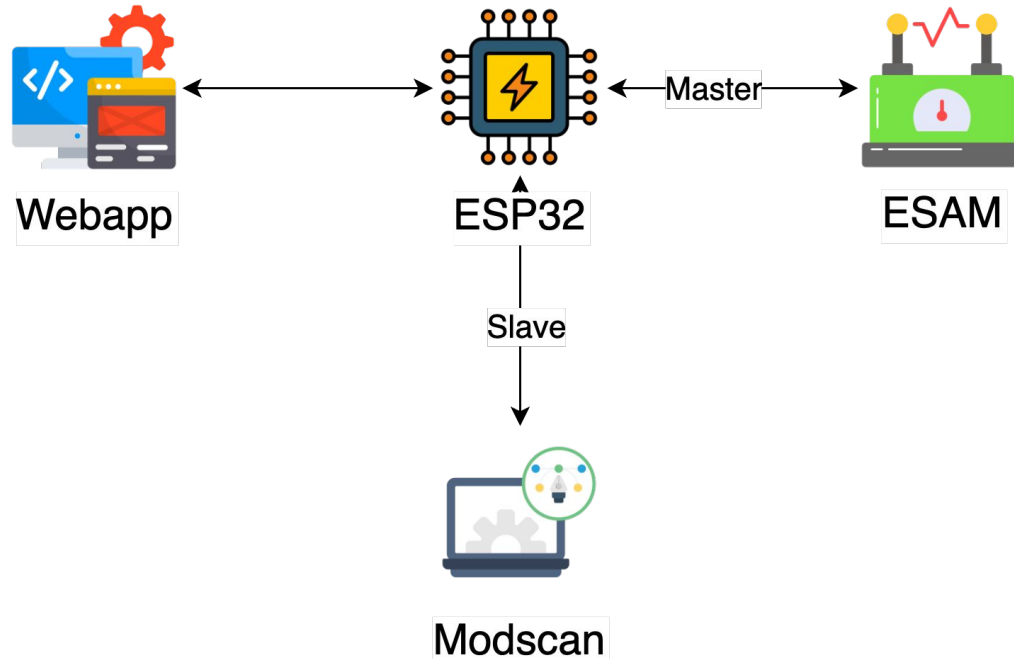


Modbus protocol

- Industrial communication standard
- RTU/TCP mode
- Master/Slave paradigm



Development environment





Implementation - ESP32

- Modbus gateway
 - Master/Slave
 - Libraries
 - Manage registries
- Backend



Implementation - ESP32

- Web Server
- Endpoints
 - CRUD operations
 - Modbus settings
 - Hosted pages



Implementation

- Wi-Fi
 - DNS Server
 - Captive-portal
 - AJAX technique
 - Connection status control



Implementation

- Web app
 - Hosted on ESP32
 - Lighter client
 - HTML, CSS, JS
 - External library

ESP32 Data Table

Slave Address	Register Address	Type	Read/Write	Label	Description	Unit	Value	Actions
1	100	FLOAT	RO	Vtot	Total voltage	V	394.53 →	Edit Delete
1	102	FLOAT	RO	Ibatt	Total intensity	A	394.81 →	Edit Delete
1	104	FLOAT	RO	P1	Power 1	W	394.68 →	Edit Delete
1	500	INTEGER	RW	NUMT	Station address		1 →	Edit Delete

Slave mode ☐

Swap mode ☐

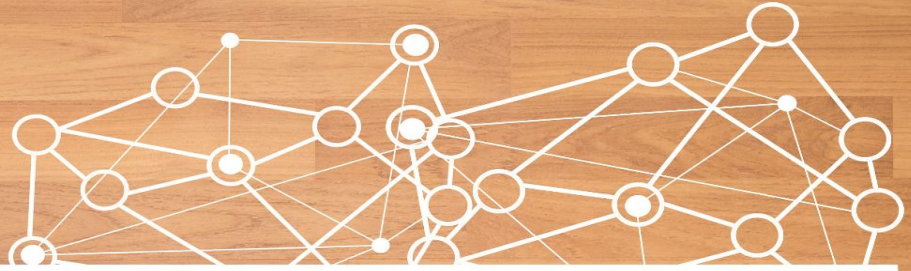
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Results

- Modbus gateway
- Wi-Fi setup flow
- User-friendly interface





DEMO





Future developments

- External storage data
- Web application hosting
- Improved scalability





Thanks!

Any questions ?

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Credits

Special thanks to all the people who made and released these awesome resources for free:

- Presentation template by SlidesCarnival
- Photographs by Unsplash