NDSU | COMPUTER SCIENCE

Capstone 2023

Pacemaker Testing Harness

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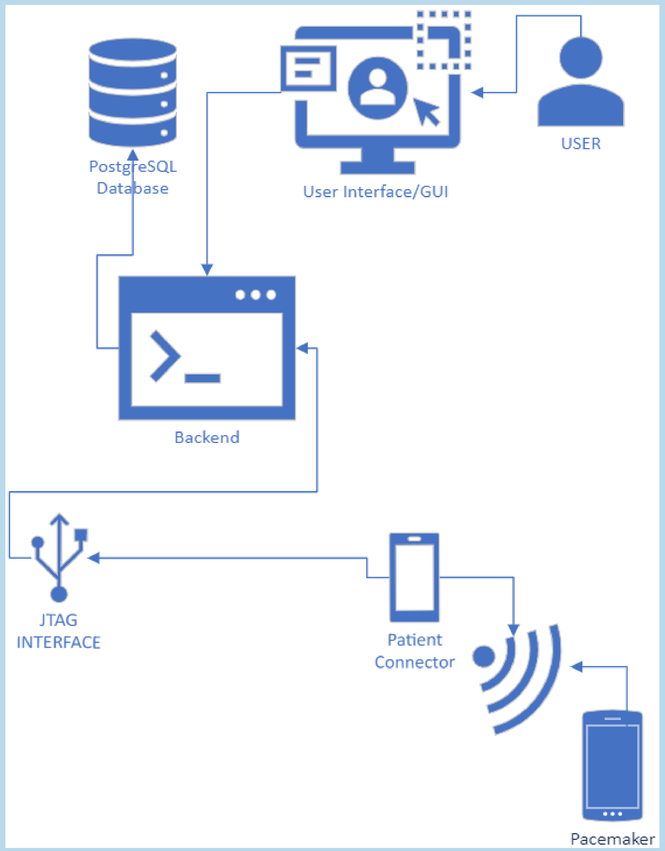
Sponsor: Medtronic

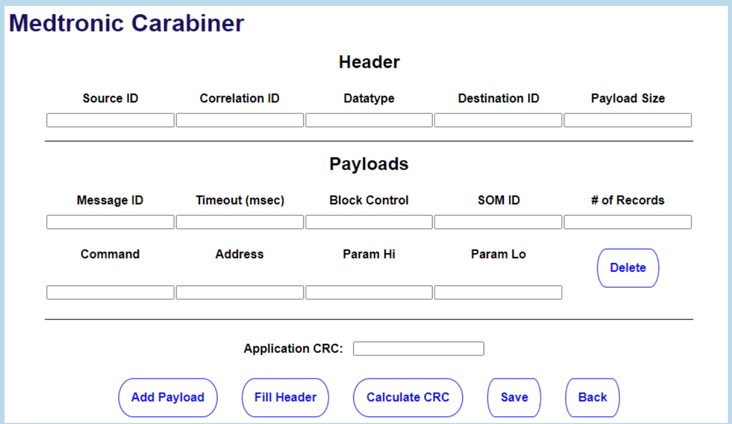
What did we do?

- Developed a testing harness with a GUI that can send custom messages to a pacemaker and record the responses
- Constructed our harness to be scalable so that Medtronic can continue to develop and add features in the future
- Provided a much faster testing experience than Medtronic's current system



What does it look like?

Our GUI's theme is derived from Medtronic's website



How did we do it?

Why is it important?

- Medtronic is the world's largest medical device developer, serving 72 million patients
- Due to the critical nature of pacemakers, their software must be able to function indefinitely
- Medtronic thoroughly tests their products to ensure robustness; our project helps them to expand their testing capabilities

What was challenging?

- Timeline: We had an expediated timeframe with roughly three weeks to develop
- Complexity: Navigation of serial protocols and ensuring integrity of messages
- Hardware Access: Shortages delayed our reception of the hardware