SafeTix, The Best-Worst QR-Code Scanner

[1] Alexander Mattingley-Scott [1]

[1]Heidelberg University

Motivation and Challenges

- For our project, we decided to recreate a QR code scanner that mimics the behavior of SafeTix. SafeTix, a digital ticketing system used by TicketMaster, claims to enhance security through dynamically rotating QR codes. However, we found an article that takes a closer look at its implementation and reveals significant vulnerabilities that undermine its effectiveness. The Safetix system generates time-based one-time passwords (TOTPs) using an event-specific key and a customer-specific key, with a 15-second time step. While this is meant to prevent duplication, the raw token containing this data is easily extractable from the web application's source code. In fact, TicketMaster logs the token directly to the browser console, making it trivial for attackers to capture and reuse it. This flaw enables unauthorized duplication, resale, or offline storage of tickets—effectively bypassing TicketMaster's restrictions. Additionally, there is uncertainty about the lifetime of raw tokens, raising concerns about the extent to which SafeTix can prevent ticket fraud.

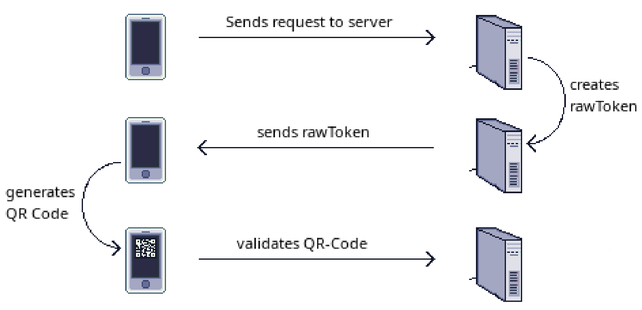

Figure 1. The Program for dummies I guess ?.

By recreating SafeTix, we aimed to make it a notch safer (not logging the ticket to the console) but keep a vulnerability that can be reverse engineered.

Methodology and Concept

How did you solve the problem.

1. First do this.
2. Then this.
3. Then that.

This solves the problem nicely! Citation[1]

Details about X

Give some details about a specific part of your project you think is important or interesting.

Details about Y

Same for another part.

Results

Show some of your results. For reversing tasks: show what you found about the target. For exploitation tasks: show to what results your topic can be used.

Future Work

How would you improve on your work in the future?

- Make everything cleaner.
- Make everything faster.
- Make everything cheaper.

References

[1] N. Goli and T. M. Aamodt, "Resprop: Reuse sparsified backpropagation," in *IEEE/CVF Conference on Computer Vision and Pattern Recognition*, CVPR, 2020.

tt249@stud.uni-heidelberg.de