

Badger: Employee Tracking System for COVID-19 Guidelines

For use within the UNH-InterOperability Lab, sponsored by Daniel Moss

Ryan Bergman (CS), Anthony Pilotte (CS), Cameron Vahe (IT), Christopher Trilling (CE)
Department of Computer Science, University of New Hampshire



Abstract

COVID-19 has caused many companies to introduce new guidelines that employees and visitors must adhere to, such as capacity limits and contact tracing. One method of following and adhering to these requirements would be to create a system to track necessary statistics of employees.

Utilizing the existing InterOperability Lab's employee database, the Badger system allows employees to indicate when they enter or leave the IOL's building, adding information to a backend SQL database. Administrators can use the information to perform contact tracing functions that generate reports of who may have come into contact with COVID-positive marked employees. A notification system is responsible for informing employees if they have forgotten to mark their status, or if the building is nearing maximum capacity.

System in Action

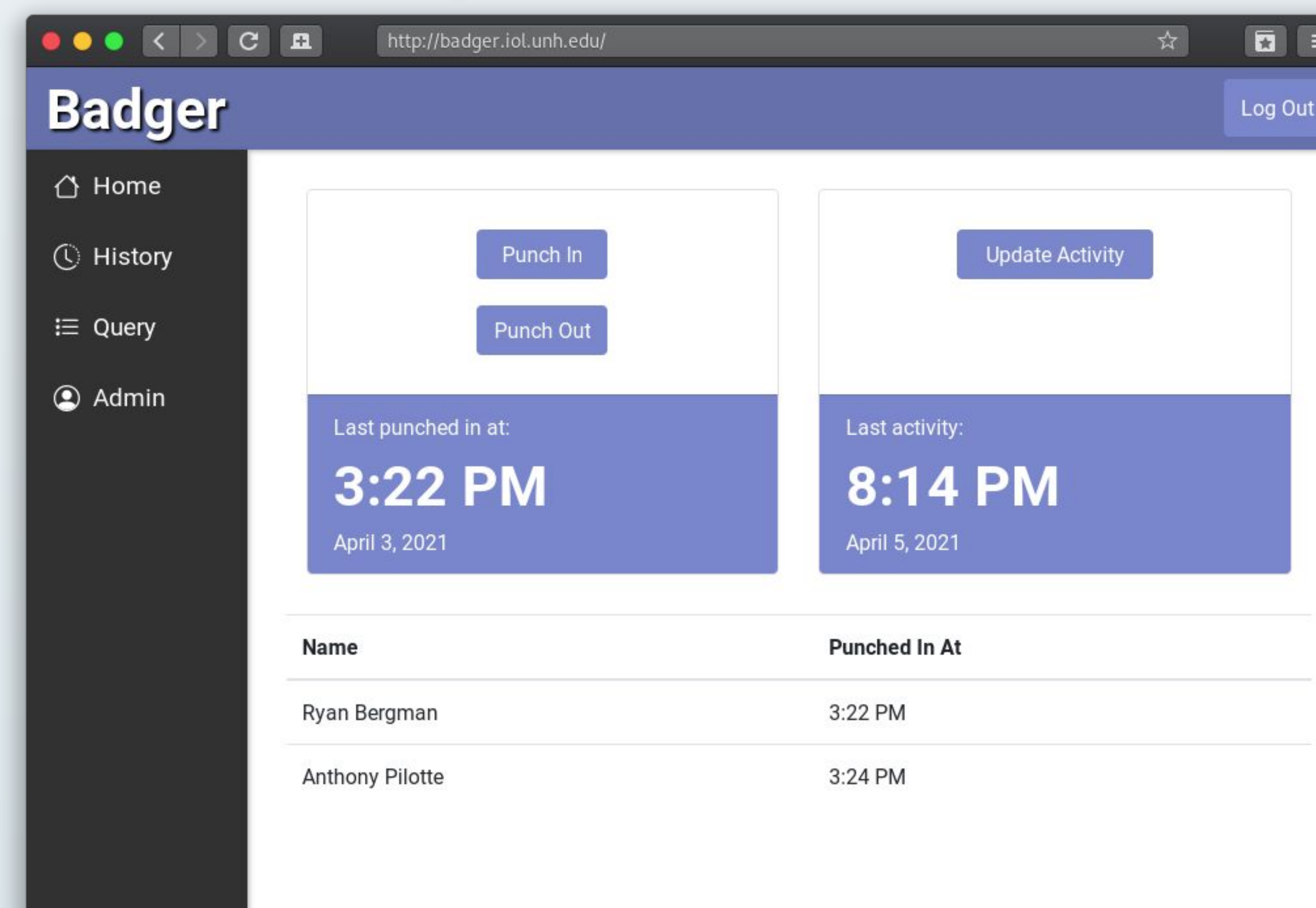
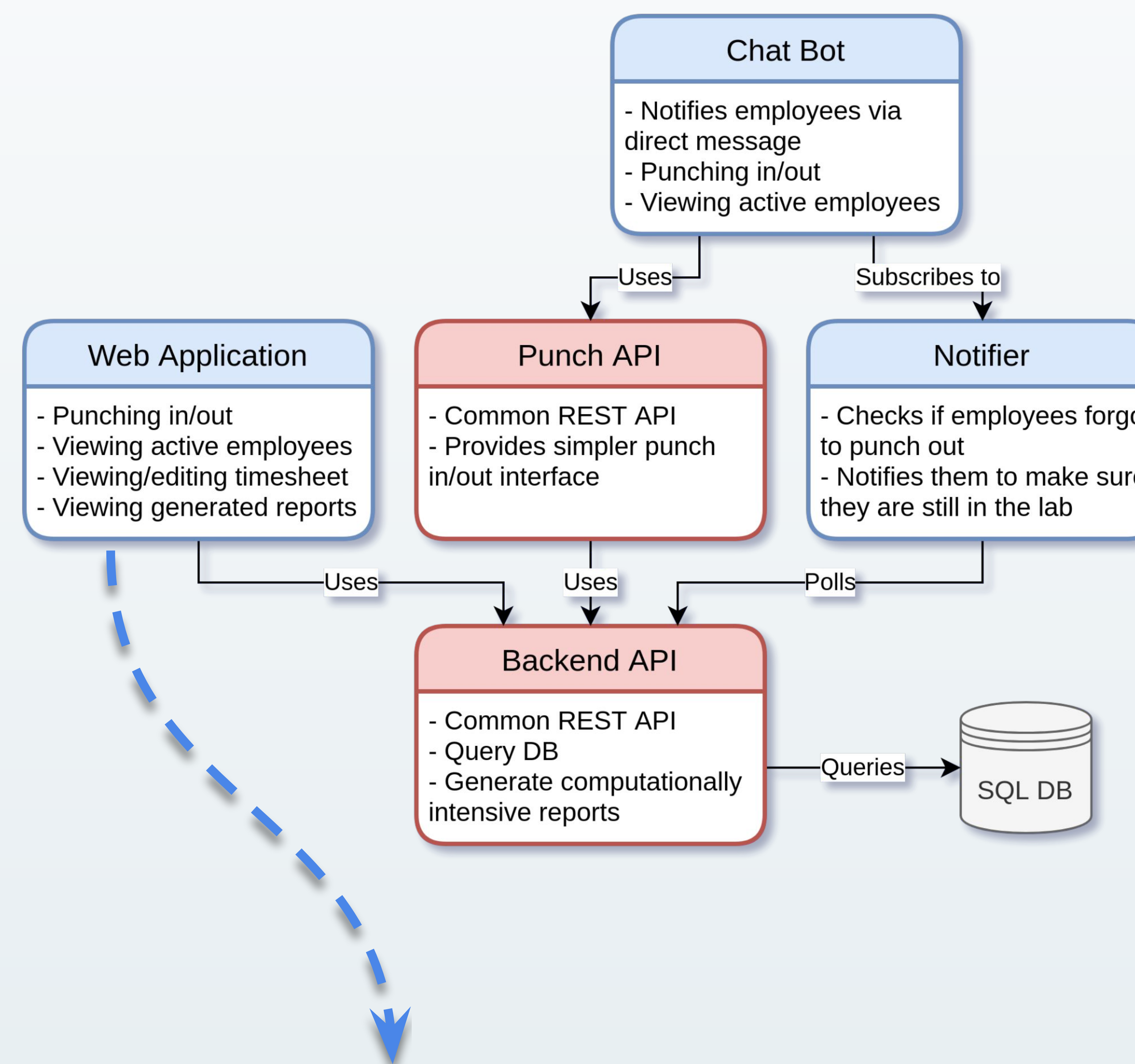
Use Case 1: Contact Tracing

An employee tests positive for COVID-19. An admin is notified and navigates to the "Query" portion of the *Web Application*. They then select the employee's name and the date range of the last two weeks. The Web Application requests a query from the *Backend API*, which instantly generates a list of all possible contacts within the last two weeks.

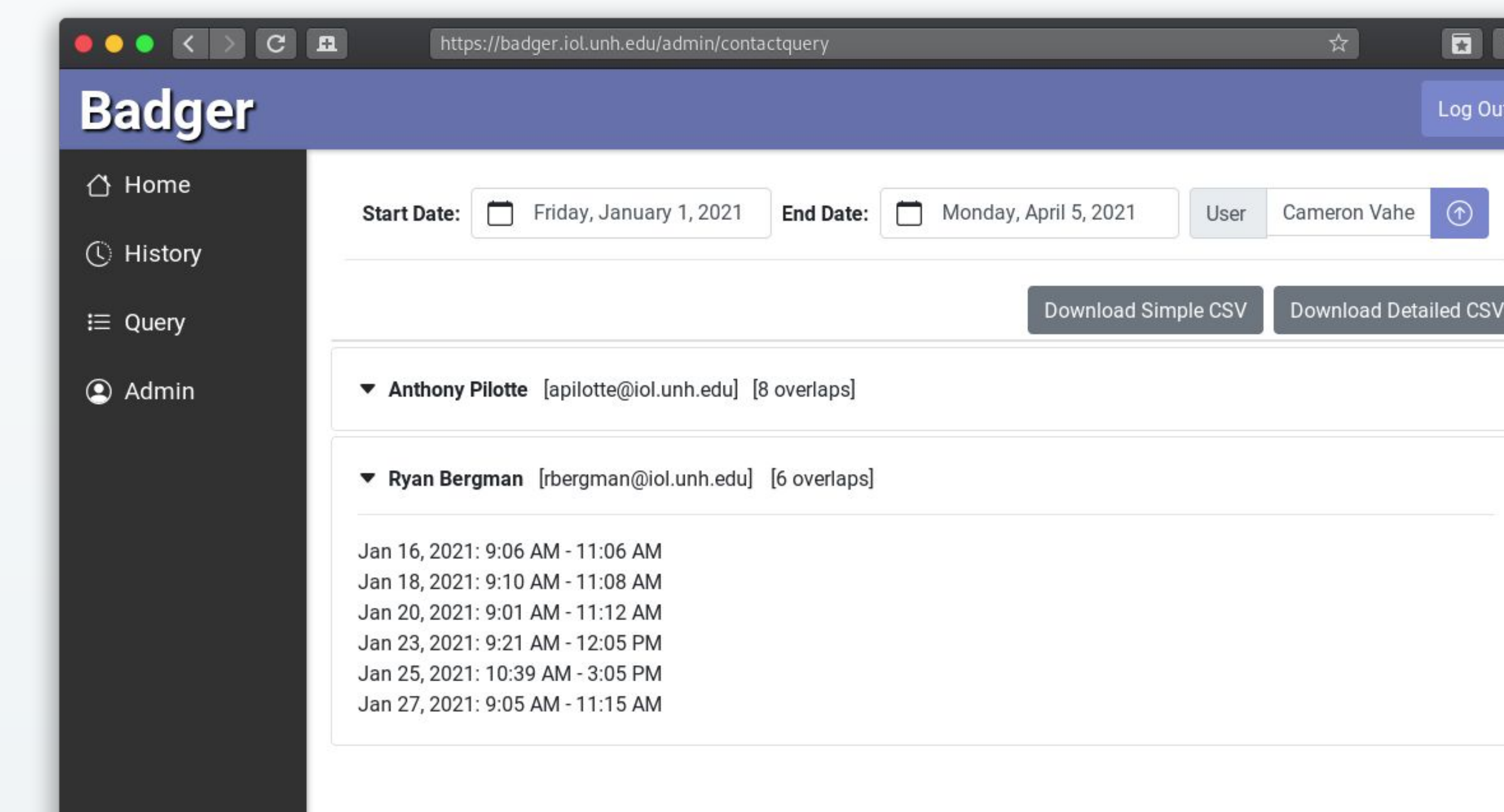
Use Case 2: No Punch-Out

An employee punches in at the beginning of their shift. At the end of their shift, they forget to punch out, resulting in inaccurate information. After a period of time, the *Notifier* will realize this, and notify the employee that they forgot to punch out.

Design



Badger Reports



	A	B	C	D	E	F	G
1	First Name	Last Name	Person ID	Person Type	Email	Start Overlap	End Overlap
2	Ryan	Bergman	1	0	rbergman@iol.unh.edu	1/1/2021 9:06 AM	1/1/2021 10:21 AM
3	Cameron	Vahe	8	0	cvah@iol.unh.edu	1/1/2021 9:06 AM	1/1/2021 10:21 AM
4	Anthony	Pilotte	2	0	apilotte@iol.unh.edu	1/3/2021 10:33 AM	1/3/2021 2:13 PM

Results and Success

	Without Badger	With Badger
Queries Performed By	IT Admins Only	Any Admin User
Query Method	4 Manual SQL Queries on 2 Separate Databases	Easy-to-Use Web Interface
Efficiency	Results Manually Combined	Results Generated within Seconds

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