# CardControl



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### Access Control

- Ever wonder what buildings you have access to?
- Well, it's impossible to check
- Prou could walk to TUPD and ask?









## Mission Statement

- Open access to information
- Transparent process for gaining access
- Users should have the right to state their case

Democratizing access to the University's resources

We are CardControl









#### Use Case

- Access control for all aspects of a university
- Central portal for requesting access to resources

#### **ID** Issuance

#### Tufts ID cards are use for:

- Accessing buildings
- Check-out books at the library
- Use at the dining halls for meal plans
- JumboCash to pay for meals, books, laundry and vending machines, and parking permits

Source: <a href="http://publicsafety.tufts.edu/adminsvc/id-issuance/">http://publicsafety.tufts.edu/adminsvc/id-issuance/</a>









#### Use Case

- Access control for all aspects of a university
- Central portal for requesting access to resources

- **But...**
- The current system sucks









## The Current System

#### **Student IDs**

- Will receive Tufts ID card during First-Year Orientation and matriculation
- Transfer students and graduate students must go to the University Police station on their respective campus to be issued a University ID card

#### **Staff/Faculty IDs**

- Must complete Human Resources paperwork (24 hrs to process), an employee ID# will be assigned
- Afterwards, go to the University Police station at your respective campus to receive University ID

Source: <a href="http://publicsafety.tufts.edu/adminsvc/id-issuance/">http://publicsafety.tufts.edu/adminsvc/id-issuance/</a>

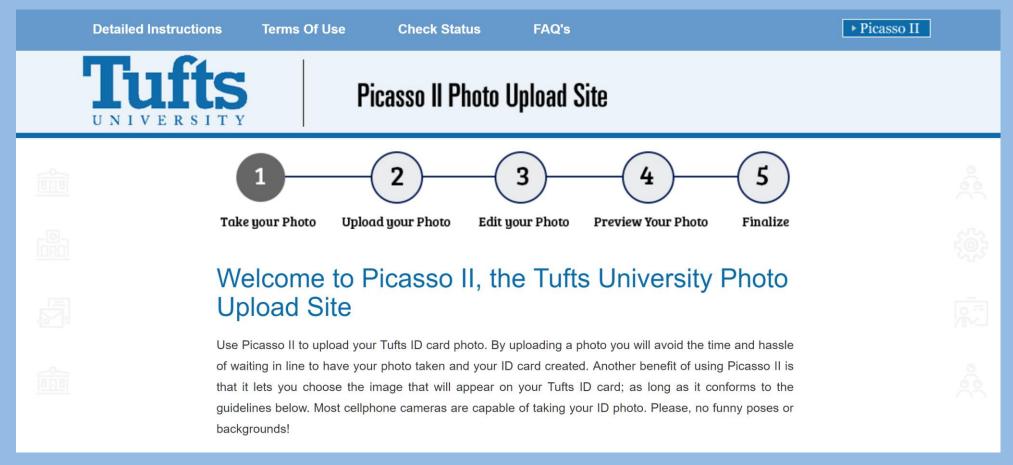








## The Current System



Source: https://picasso.publicsafety.tufts.edu/









## The Current System

#### **Boston SMFA Campus:**

- Location: Student Services window (to pay), then the student must submit work order here: http://operations.tufts.edu/facilities/service-requests/
  - Select "Submit a Request for Key, Lock, or Card Access"
  - Select Location "SMFA 230 Fenway"
  - Select under Access Request "Access Card Access Request"
  - Attached photo of receipt from Student Affairs
  - New ID will be mailed to you and sent to front desk at 230 Fenway
- Damaged or defective ID cards will be replaced at no charge
- Replacement ID will operate normally, with all dining meal plans, JumboCash, and card access intact

Alternatively you can deactivate a lost or stolen ID card at http://www.jumbocash.net/

Source: http://publicsafety.tufts.edu/adminsvc/id-issuance/replacing-lost-ids/









Application created to address very specific needs

Some characteristics that we wanted:







Application created to address very specific needs

Some characteristics that we wanted:

fast









Application created to address very specific needs

Some characteristics that we wanted:

scalable









Application created to address very specific needs

Some characteristics that we wanted:

intuitive









Application created to address very specific needs

Some characteristics that we wanted:

ROBUST









- Application created to address very specific needs
- Some characteristics that we wanted:
- Future-proof with generalized classes of resources: doors, buildings, web applications...
- As easy to use for managers as for users







### Our Evolution

- Buildings and doors
- Regions, multiple campuses, departments
- Web applications and beyond







## Demo Time!









### Now What?

- Concerned with making our application easy to use, open, & accessible
- Considered other final projects:
  - Didn't have to do authentication without SSO
  - Considered rate limiting
- So we decided to build a second web application
  - Proof of concept









## Our Final Project: azzaip

- Pronounced as anything except "Pi-az-za"
- System of submitting messages and posting notes to a board
- Web application that uses CardControl
- Manages a user's access to resources (e.g. classes)







### An Audit of Sorts

- Essentially: a usability audit of our own system
- Challenge of building a web application:

  How will other services use it?

Transition to using our API from an outside point of view







## Demo Time!

Part II: The Reckoning









## Full Functionality

- Real SSO authentication to link with the university
- Update backened to filter out sensitive information
- File upload for users' photos
- More granular management levels
- Temporary and timed access to resources









### Links & Goodies



https://github.com/tuftsdev/comp120-s2017-team6

azzaip repository:

https://github.com/CaerusKaru/azzaip

These slides:

https://github.com/tuftsdev/comp120-s2017-team6/raw/dev/doc/COMP-120-S17-Team-06.pdf





