



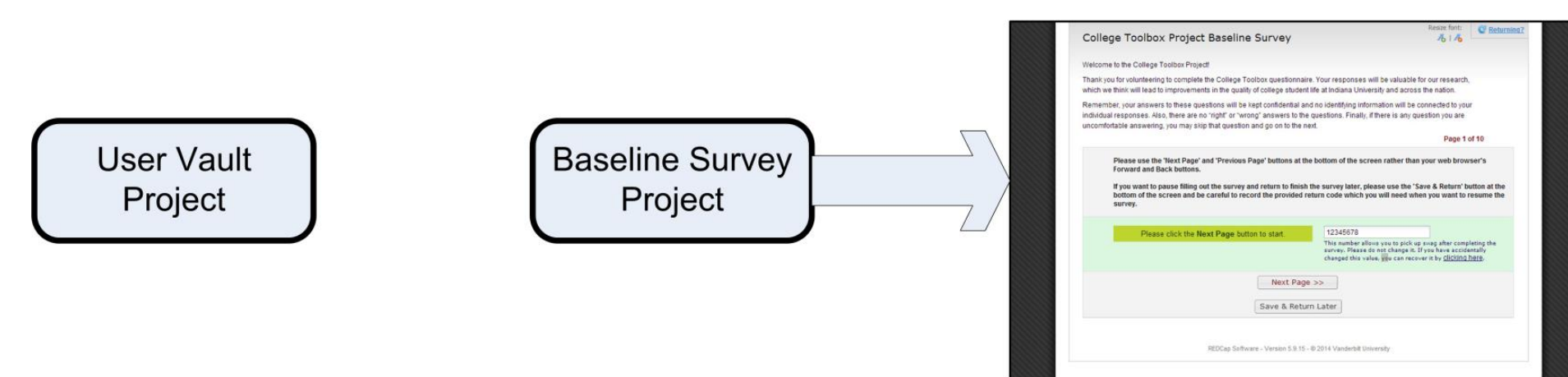
Abstract

Indiana University has been selected by Glenn Close and her non-profit organization, Bring Change 2 Mind, to be the national site to create a 'toolbox' of activities and events, designed by students for students to end the stigma that people with mental illness often face, and to make college campuses safer and more welcoming places.

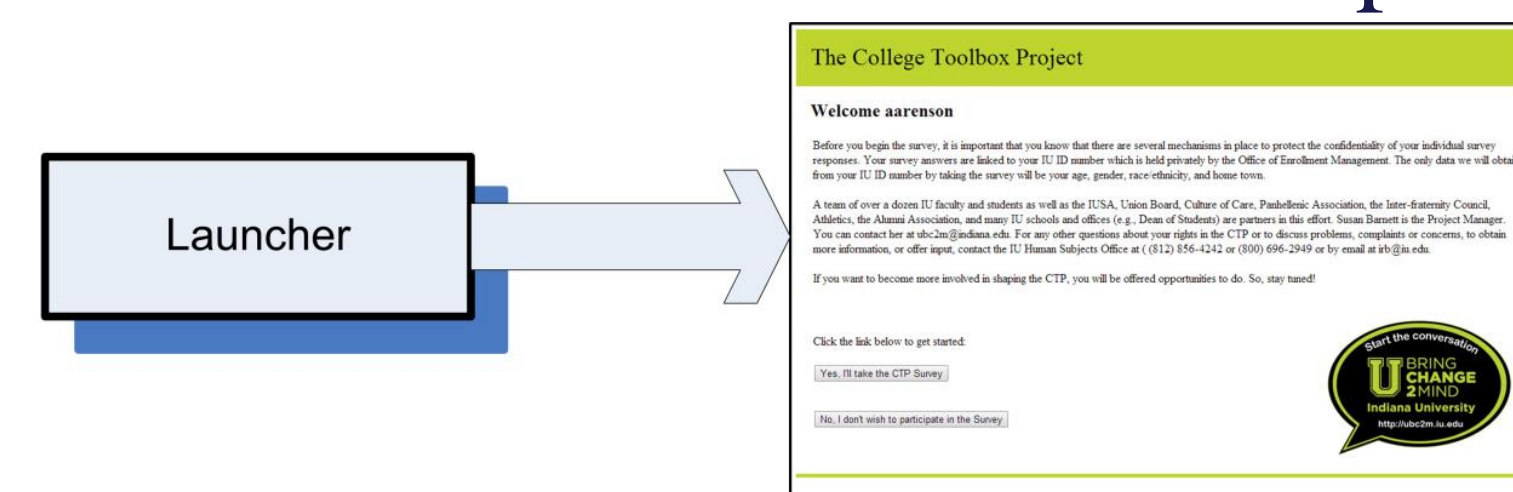
When building a software system that already uses REDCap for data entry or surveys, one can also store any additional data in REDCap, too, instead of having to maintain a separate database. We built the College Toolbox Project (CTP) software system using REDCap as a software framework, leveraging both REDCap's survey capability and REDCap's Application Programming Interface (API).

College Toolbox Project Requirements

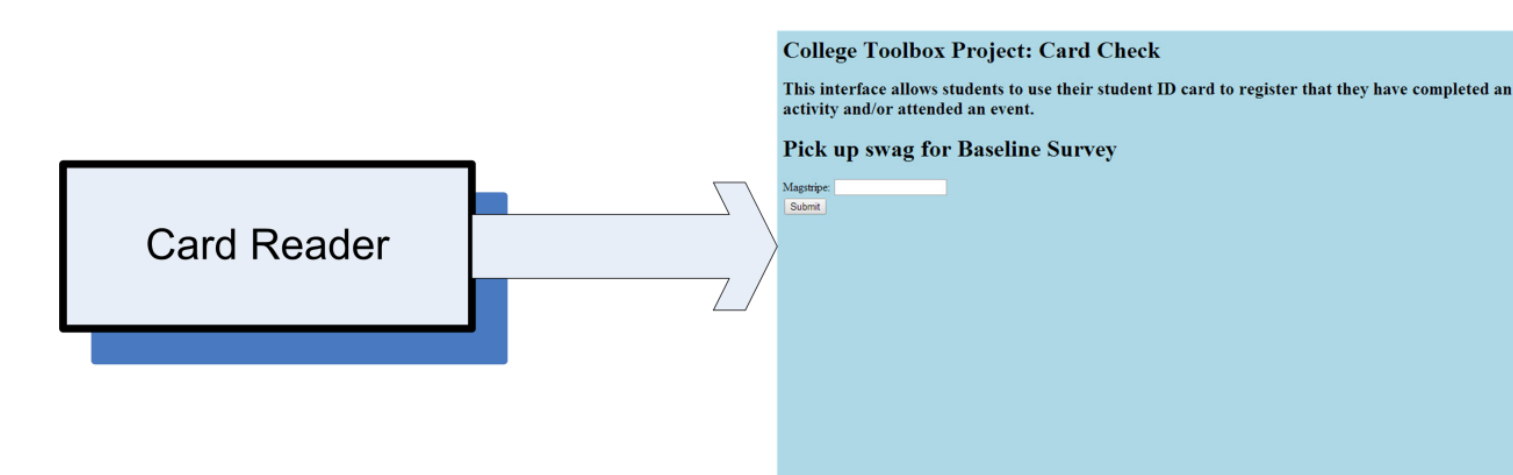
1) Can't store identifiers in same database as survey results. SOLUTION: Use separate project to store identifiers.



2) Only freshman students at Bloomington may take survey. SOLUTION: Use Launcher to authenticate respondents.



3) Only students who have completed survey may get swag. SOLUTION: Use Card Reader to read student IDs.



4) Students should see one of four variations of the questions. SOLUTION: Use branching logic based on record_id.

((rounddown([ctp_id]/4)*4) + 1) = [ctp_id]

DESIRED: Logic in labels or text in calculated fields.

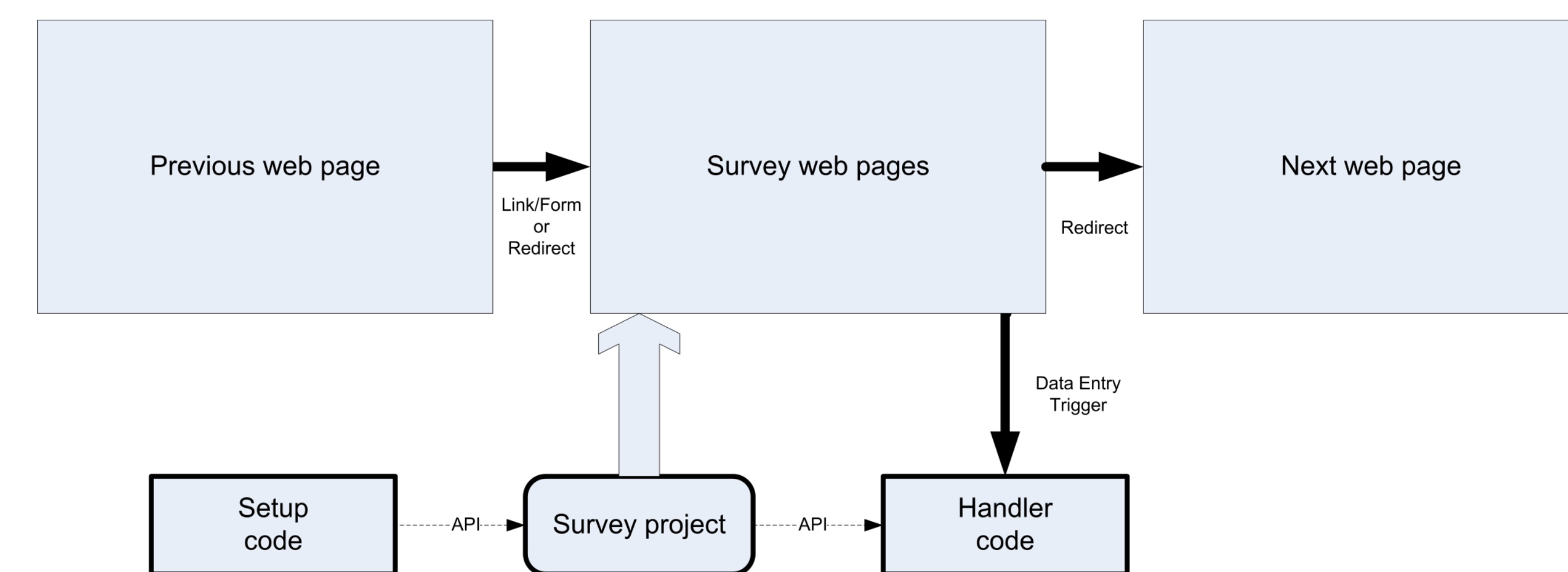
REDCap project as data store component

By using the REDCap Application Programmer Interface (API), an external program can store data in and retrieve data from a REDCap project.

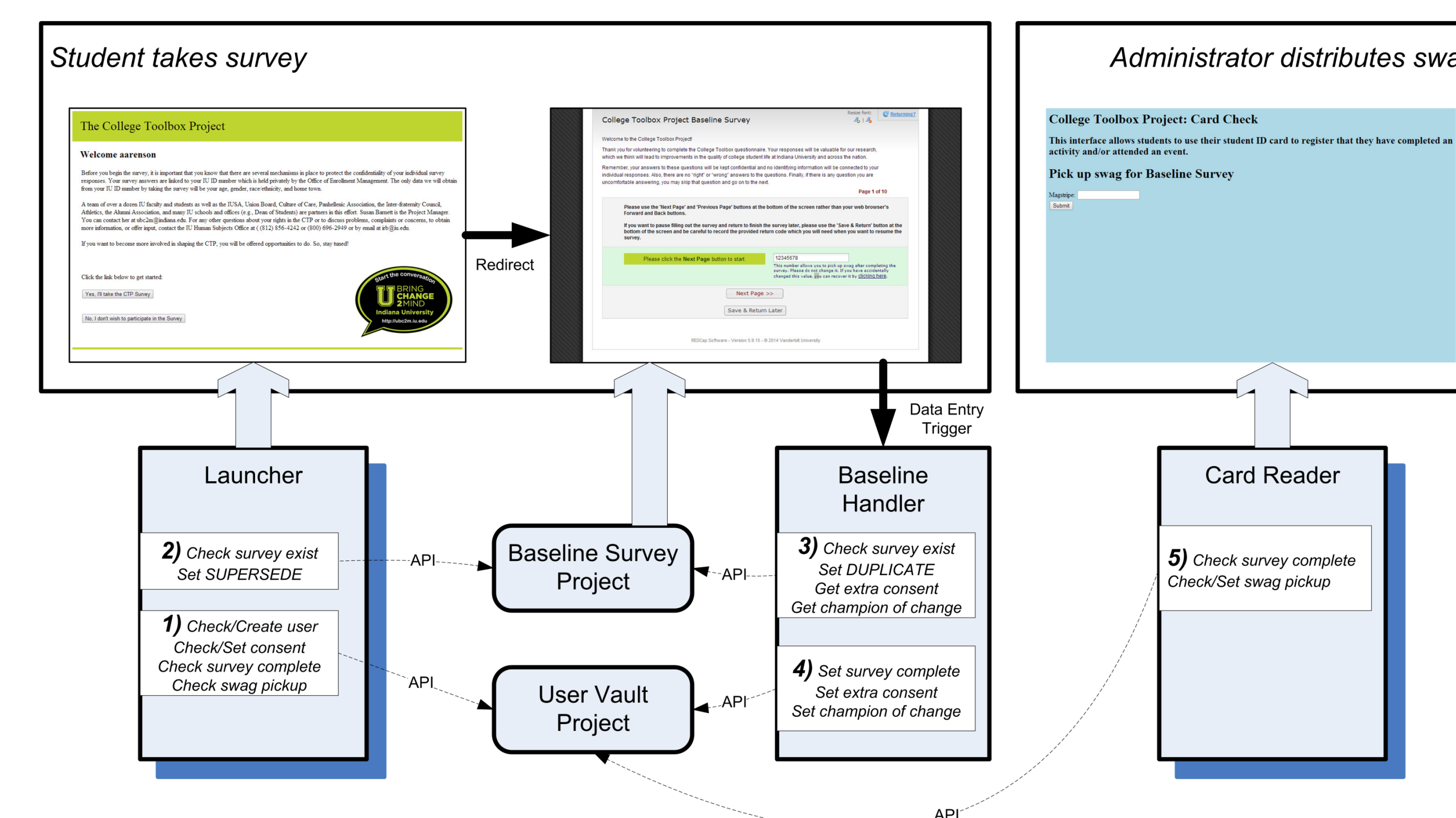


REDCap project as survey component

- 1) To send a user to the survey: Provide an HTML link/form or use a HTTP redirect.
2) To pass data to the survey: Use pre-fill values for an HTML link/form or use the API. DESIRED: Hide pre-filled variables. DESIRED: Create and retrieve survey hash codes via API.
3) To get data from the survey: Configure the Data Entry Trigger (DET) to call a program that uses the API to get values.
4) To send a user from the survey to elsewhere: Set the redirect URL in REDCap for the survey.



Workflow, including REDCap components

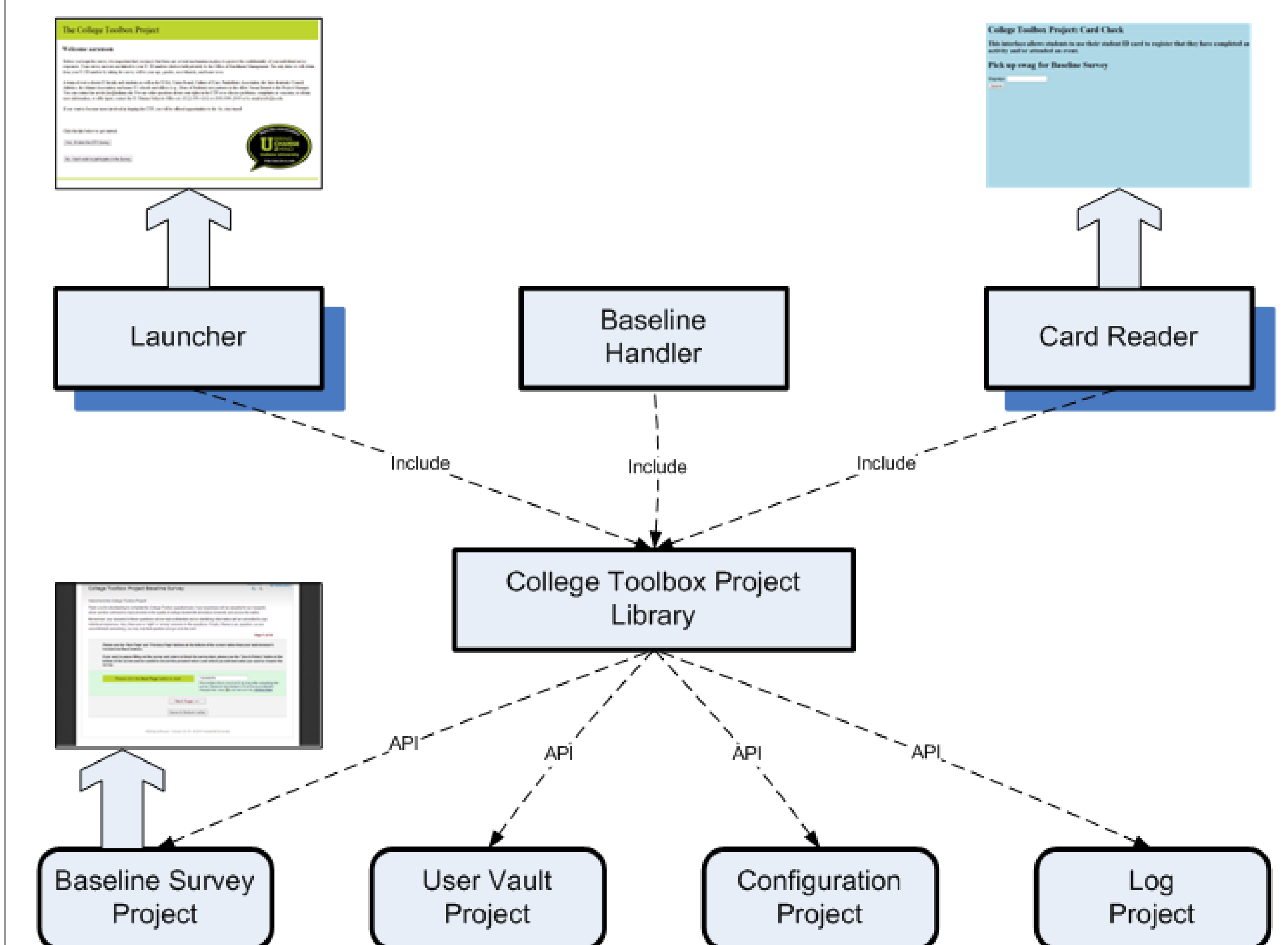


Helper projects

- 1) Configuration: Allows change without altering code. Further security for API tokens.
2) Log project: Single place to see activity across the project.

Shared library architecture

Shared functionality (accessing REDCap, sending email, checking security, etc.) is kept in a shared code library.



Gotchas / Lessons learned

- API use triggered a denial of service defense. DESIRED: Whitelist an IP address.
• The same DET handler is called for every form in a project.
• Multi-page surveys call the DET handler after every page.
• The page count for a survey can look deceptively high. DESIRED: Hide survey page count.

