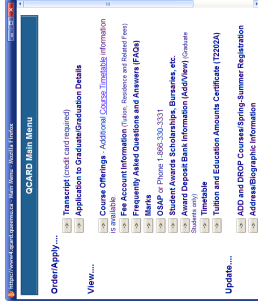


# QCARD Wrapper

## What is QCARD?

QCARD is the online database system currently used by all Queen's University students to register and view their courses, fee information, and more.



One of the problems with QCARD is its lack of a good navigation system. The user cannot access any other page without returning to the Main Menu (at right); even the "back" button doesn't work.

## Why Wrap QCARD?

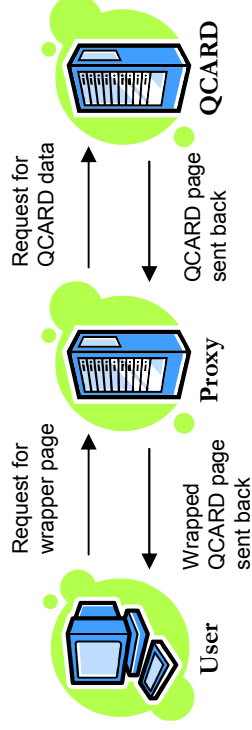
Many students feel that the current QCARD interface is inadequate. But to make major changes would require a huge amount of time and stability testing. By creating a wrapper, we can experiment with new designs and give it working functionality, without altering the current system at all.

## Goals of the Redesign

- A navigation system with web browsers in mind: a sidebar, "back" button compatibility, and fixing of the "dead-end" Fee Account pages.
- Continuous, unsegmented pages
- Better timetable and form boxes
- Multiple functions on one page

## Reverse Proxy Server

Without direct access to the database, we must use a reverse proxy server. This server accepts a user's requests from the wrapper, then navigates the existing QCARD website, imitating a regular user, in order to get the desired data. The data is then fitted to our design and sent back to the user's web browser.

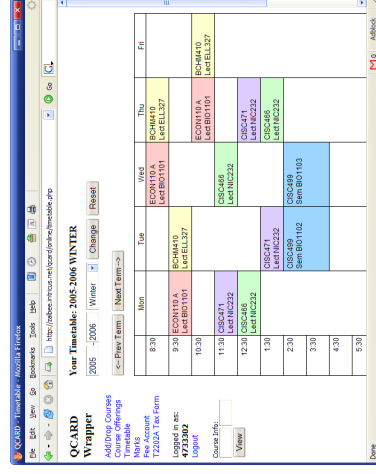


Right: The original QCARD timetable is text-heavy and makes the times unobvious. Notice that only half the information is shown; the user must click Page Down to see the rest.



Left: The redesigned timetable page is colour-coded and readable at a glance. The space-proportional layout is built with CSS and can be very easily extended.

Also seen here: Navigation bar and quick course info text box on the left are visible on all pages of the wrapper.



## Implementation

We use a single webserver, running Linux and PHP 4, to host the site and serve as the reverse proxy. Each page of the wrapper that gets loaded is also a PHP script that makes POST requests to the QCARD server. The HTML code is parsed to find important data regions (tables and forms). Our server sends back the output of the PHP script, which is also an HTML page.

## Results

Six of the most common pages of QCARD were redesigned (Add/Drop, Course Offerings, Timetable, Marks, Fee Account, and Tax Form). Of these, five pages (all except Add/Drop) were successfully and completely implemented in the online version. It was left out because changing courses could not be tested during the development time period.

The QCARD Wrapper is available to all Queen's students at:  
<http://zalbee.intricus.net/qcard/>  
<http://txl.cs.queensu.ca/~choi/>