

University of Windsor Open Data Proposal

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Abstract

We, the University of Windsor Computer Science Society, propose to implement an Open Data Initiative that consists of publicly hosted datasets about the university as well as an application programming interface (**API**) open to every student. Both parts would allow students to gain access to quantitative data about the university, such as course data, professor data, and campus information. Additionally, the API would permit students to create applications and tools that help other students, serving to strengthen the community and student life at the University of Windsor. Evidence from multiple student testimonies taken from students at the University of Windsor demonstrate how useful these services would be if executed. Moreover, we collected further testimony from both the University of Waterloo's IT department and Concordia University's Instructional and Information Technology Services department as to how the Open Data Initiative has vastly improved student life on their campuses. For these very reasons, we propose that the University of Windsor should implement an Open Data Initiative.

Project Goals

We propose the use of a token accessible API, similar to the University of Waterloo's Open Data API as well as other public facing APIs. Additionally, we plan for all the Open Data sets to be publicly hosted and updated on public websites such as GitHub. Public hosting on GitHub is advantageous, as it allows students to see changes in the history of the data sets and to easily access them.

We intend to make a wide variety of data available to students in the Open Data sets, as it is listed in long form below.

- Courses
 - Course code
 - Course title
 - Course description
 - Course times
 - Course sections
 - Course availability (if the class is full or not offered during that semester)
 - Current professors and their TAs
- Professors
 - Name
 - Courses they teach
 - Office hour times
 - Contact information (phone, email)
 - Location of their office
- Teaching Assistants (TA)
 - Courses they TA for
 - Contact information

- Location of their office hours
 - Office hour times
- Building Information
 - Addresses
 - Building codes
 - Building names
 - Hours of operation
 - Longitude and latitude
- Restaurants
 - General information (type of food served)
 - Hours of operation
 - Time of menu switch (i.e. from lunch to dinner)
 - Building location
- Parking Information
 - Address of parking lots
 - Latitude and longitude of parking lots
 - Number of parking spaces
- Exams
 - Final and midterm schedules per course
 - Time and date they are being held
 - Location of the exams

Considering the proposed data sets, the information that is regarded as the most essential is that of the course and professor sections, respectively. This is due to the fact that the information pertaining to those sections is highly requested, easily actionable and compiled. These two data sets would need to be updated at least once per semester.

Supporting the importance of data on courses and professors, the current maintainer of Open Data at the University of Waterloo, Sergey Bobkin shares that **“in our case the data people care the most about is around classes, schedules, and enrollment. This is easily the dataset that is most used, and for which additions are most requested. I would target that, and several other smaller datasets that you believe would be a) useful, and b) actionable for the community that would be interested in open data as a starting point.”**

Action Plan

The University of Windsor Computer Science Society (CSS) is committed to work with Information Technology Services (ITS) to create the service and the API. CSS and its development team has prior experience creating similar open and public services and APIs. Furthermore, CSS is willing to give resources and time to compile and host the data sets publicly on GitHub (<https://github.com/UWindsorCSS>), as well as help write and create the API.

If approved, CSS is prepared to work with ITS on a roadmap to plan out what must be done, in which order, and how it will be executed.

Benefits to the Student Experience

When asked about the potential benefits of Open Data, Concordia University's Director of Digital Transformation, Paul Fournier stated that "one of the ways we try to convince certain data stewards to work with us is by asking them if they regularly get requests for data from the students. In many cases students request data for their projects and one of the benefits we can bring, by making the data available through open data, is that the data stewards can simply direct them towards our service for their future needs. This ends up being a win-win-win for everyone involved. Students can easily get access to the data for their projects, data stewards no longer need to address individual requests, and we gain a data set that we know is valuable to the students." As acknowledged above, Open Data has significantly improved Concordia University in many ways. Examples of benefits include helping students fulfil their data needs easily, faculties focusing resources through increased efficiency, and encouraging the IT department by way of better helping students.

Waterloo's Sergey Bobkin states of their Open Data that "the primary users are many students, classes, and groups that used it to create projects and initiatives that mostly fell into 3 groups a) projects as part of a class, b) projects to enhance your resume for co-op applications, c) system integration projects that liked the API interface as opposed to other methods. This translates to personal development, better work opportunities, and community driven development that also helps the broader student users." As you can see here, this project assisted both students and professors. It supports professors via having an easy data set/API for class projects. It helps students through allowing them to make projects that are of high quality for classes, look good for jobs, and that help their communities.

The University of Waterloo has many examples of programs and applications built upon their Open Data. Here are some examples of apps that have greatly improved student life.

- *WatIsRain* is an app that was created to show how to get from one place to another on campus without ever having to go outside.
- *Goose-watch* is an application that shows where geese and their nests are so that students can avoid them.

Direct applications at the University of Windsor are numerous. For example, CSS will integrate it into multiple applications including our course offerings table, which can be made automatically by this initiative. In addition, CSS will also integrate the information in each section into its discord bot so that students can easily access course information, restaurant information, and other information in an easily readable format.

Benefits for the University of Windsor

The Open Data initiative will show students that the university is putting substantial effort into strengthening the student community by aiding in the creation of tools. Also, it could

function as a recruitment tool to show perspective students that the university invests in ways to support students.

Testimonials from University of Windsor Students

The following are testimonials from students about their personal experiences in developing tools for UWindsor students, the challenges they faced, and how open data would benefit them.

From Bailey Chittle, Computer Science undergraduate student:

“Using UWindsor’s data has been required for a team project I have been leading, titled UTable, located at <http://utable.net/>. It is a UWindsor course search engine and timetable generator. Users can search for the courses they would like to take, and the website automatically generates a timetable showcasing their weekly schedule. The data I have been parsing is located at this link: <https://www.uwindsor.ca/registrar/541/timetable-information>. It is already open to the public, although it is in PDF format, so parsing is rather difficult and tedious. There is also plenty of missing data that would be beneficial to showcase in course views, such as course descriptions and required textbooks. Being able to have access to this data would save my team a lot of time and effort. Having at least the data given by this URL would make logical sense as I have access to this data regardless, it would just make my work a lot easier, and as a by-product the university gets access to free projects that benefit the community.”

From Mahir Chowdhury, Electrical Engineering undergraduate student:

“The first thing I made that used UWindsor’s data, was the engineering discord bot Pluto. It is used by UWindsor engineering students to get access to this university’s information a lot faster in chat. Students can get information on faculty, their rating, and get course information. This bot was pretty challenging to develop without an API because I had to scrape through their website every time I wanted to request information. The website’s structure was also quite inconsistent and so gathering data from its html was a massive challenge to do. However, I was eventually able to find a pattern and was able to scrape it successfully and consistently. If there were an API, I wouldn’t have to spend that much time trying to scrape websites and gather data. I also wouldn’t have to worry about updating the code every time the website’s structure changes. There would be less of the backend for me to worry about as a developer and I like that.”

From Ryan Prairie, Computer Science undergraduate student:

“As Head of Technology for University of Windsor Computer Science Society (CSS), I make many things that help students in some way, whether it’s for fun or to offer services. I make many many tools that use information from the University of Windsor that I have to manually put together. The API would not only make it easier it would also enable me and by extension CSS to make tools that weren’t possible before. In my opinion this initiative would enable the university to expand and offer services that were difficult or impossible to setup before.”

From Miranda Ransom, Computer Science undergraduate student:

“Allowing easy access to information such as which semesters each class is offered and the professor teaching them will benefit students greatly. Not only will this improve basic degree planning ability online, but will allow students to create a class schedule that fits their personalized needs. Right now, there is no unified information system to show this information which can cause delayed graduations, messy schedules, and general stress on a student's day to day life. Knowing whether a class is available during the summer, or any other semester can aid students in being more organized and intentional with their class selections. A professor also plays a critical role in a students experience with a class as well as their level of understanding of the material covered. Allowing students the ease to choose classes with professors they excel with is beneficial to the health of the department and university as a whole. Along side all of these benefits I believe students have a right to easily access information about the university they are attending, allowing this kind of transparency will look good to the student body, and aid them in finding their best experience at UWindsor.”

From Peter Renaud, Computer Science undergraduate student:

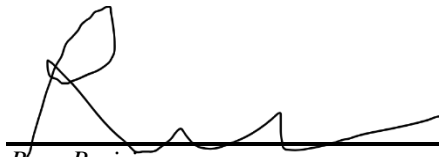
“I had the opportunity to use windsors open data portal for one of my projects and after using it first hand I have realized the benefits it provides when creating applications to handle a variety of different components related to the data sets available. I would love to see the university set up a data set or data api that would allow students and professors to access this data to be able to create various tools and applications that would improve the wellbeing of people attending and looking up information about the university of windsor”

Conclusion

The University of Windsor Computer Science Society would like to collaborate with ITS and the Data Shareholders to develop an Open Data initiative. Such would allow students to access University of Windsor data and develop applications to enhance the student experience. We firmly believe that such an initiative would be beneficial to both the students of the University of Windsor, as well as the University of Windsor administration.



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