Water Management Service

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CISC 3810 | Project 2 | Proposal

Software Description

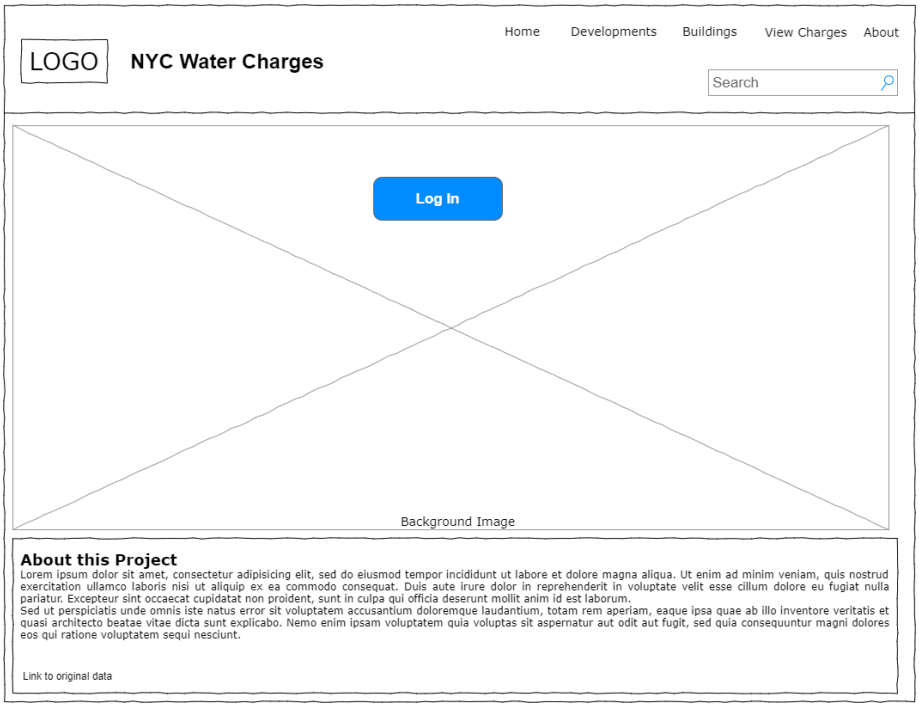
The software I'm working on allows users to view water charges from 2013 until present. The data, provided by the New York City Housing Authority, is organized by borough and by development, then by building and it includes utility vendor and meter information, as well as all water and sewer charges from 2013. It offers user authentication and supports two different types of users; users from the NYCHA can log in and view data for all develoments, while owners of developments can log in and view only their own data. Theoretically, the second set of users will be able to use this software to either pay their bills or keep track of all their charges and payment status.

This type of software is interesting to me because the data can be broken up and organized in multiple different ways. NYCHA users will have the option of viewing a list of developments in a borough, or of viewing buildings in a development and the associated charges. Development users will be restricted to viewing only their buildings. Implementing this will allow me to experiment with SQL commands such as joins and views, and to incorporate Python's SQLAlchemy as an Obejct Relational Model. Furthermore, since the information available to a user will be context dependent and varying depending on user type, this software will also make use of Python's Flask-Login library to implement user authentication.

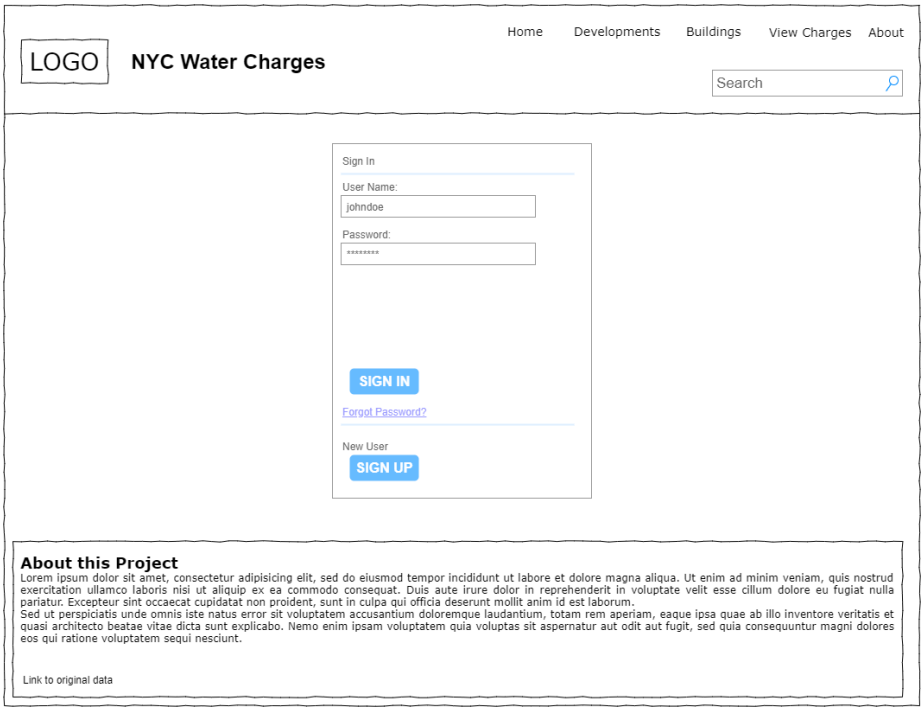
My project is similar to services offered by utility companies that are intended to allow clients to pay their bills or manage records. For example, see Home | R.E.M. Residential | Property Management Company NYC (remny.com) and ACI Payments, Inc However, one thing that is unique about my software is that that the data is of a larger scale than the previously listed examples, with data going back to 2013. It seems likely to me that something similar for the whole state does exist but is perhaps not publicly available. Still, the implementation is similar and it's an interesting exercise to imagine how one manipulates such a large dataset and designs an application with which to access the relevant data, while restricting access to other data.

Application Diagrams and how it works

HOME PAGE

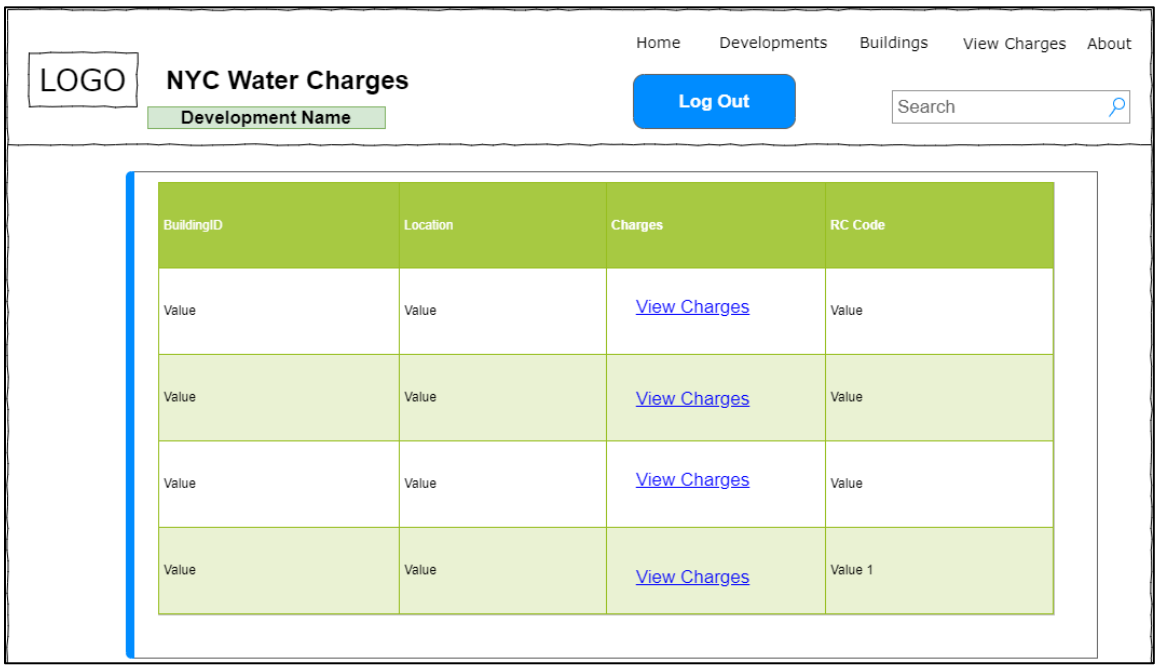


LOG IN

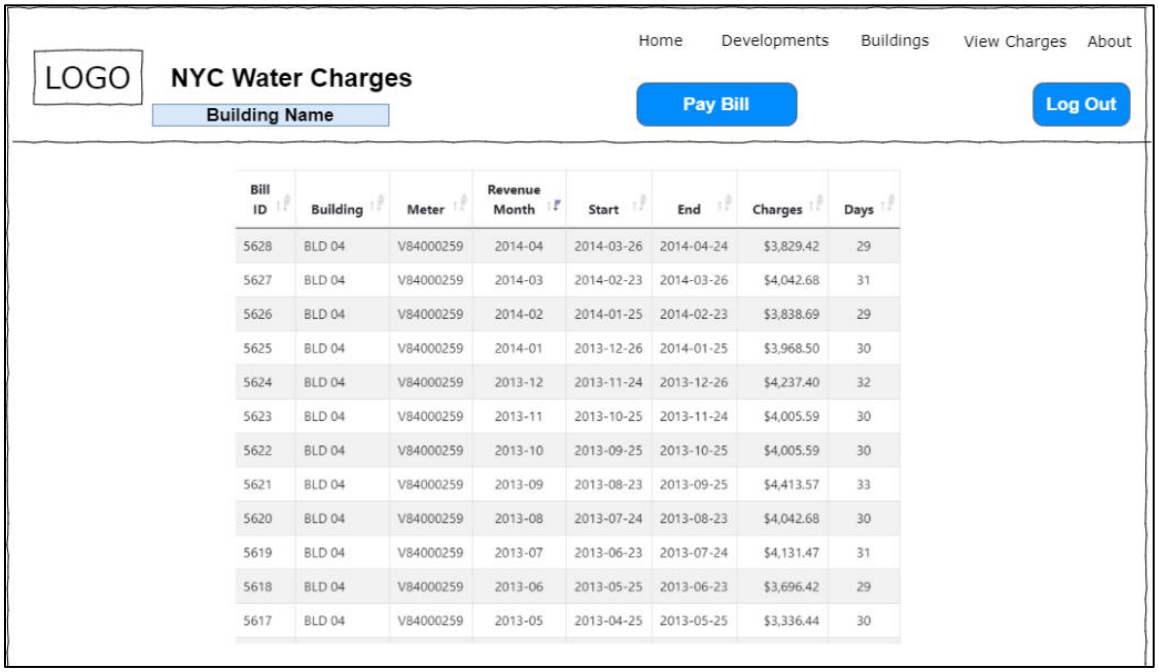


DEVELOPMENT USER PAGE after logging in

Developer is presented with list of managed buildings and can then click on View Charges to view charges associated with each building.

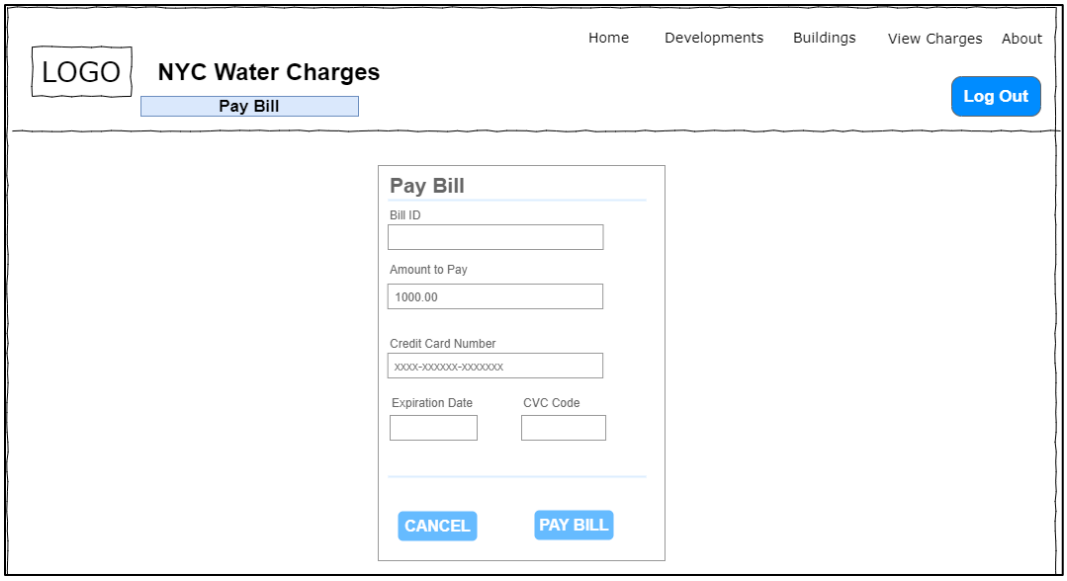


VIEW CHARGES (after clicking on one of the View Charges above)



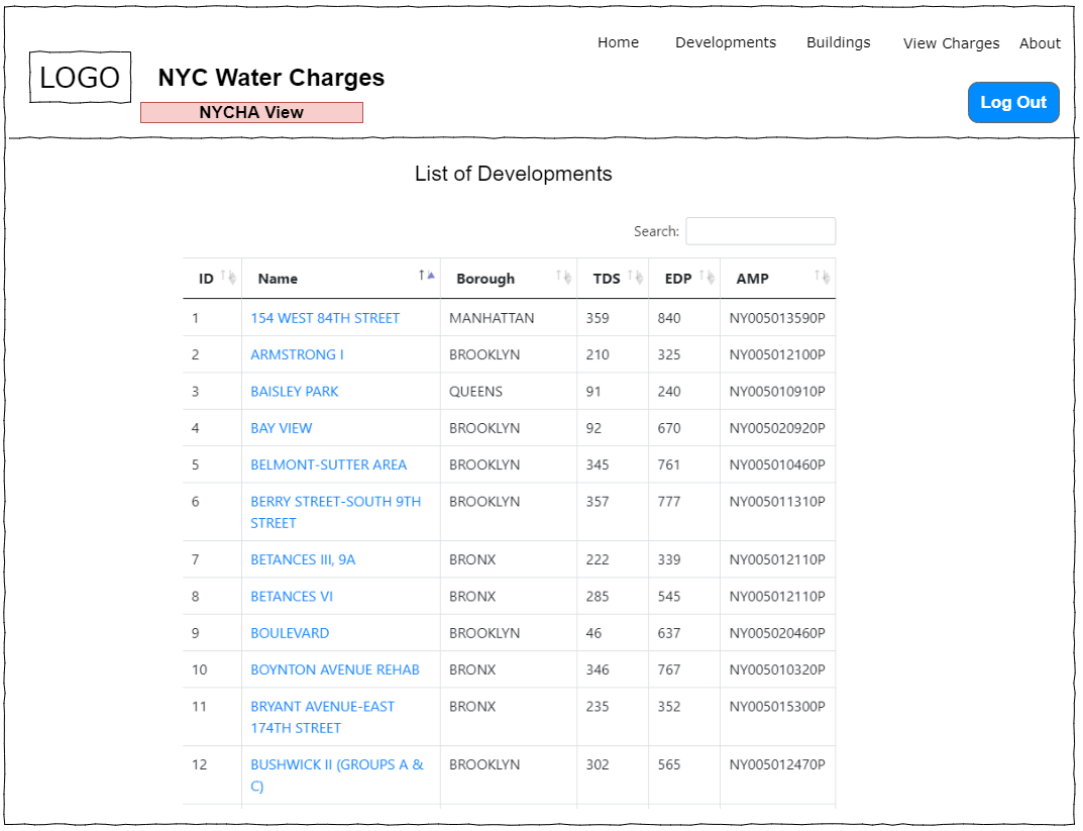
Bill ID	Building	Meter	Revenue Month	Start	End	Charges	Days
5628	BLD 04	V84000259	2014-04	2014-03-26	2014-04-24	$3,829.42	29
5627	BLD 04	V84000259	2014-03	2014-02-23	2014-03-26	$4,042.68	31
5626	BLD 04	V84000259	2014-02	2014-01-25	2014-02-23	$3,838.69	29
5625	BLD 04	V84000259	2014-01	2013-12-26	2014-01-25	$3,968.50	30
5624	BLD 04	V84000259	2013-12	2013-11-24	2013-12-26	$4,237.40	32
5623	BLD 04	V84000259	2013-11	2013-10-25	2013-11-24	$4,005.59	30
5622	BLD 04	V84000259	2013-10	2013-09-25	2013-10-25	$4,005.59	30
5621	BLD 04	V84000259	2013-09	2013-08-23	2013-09-25	$4,413.57	33
5620	BLD 04	V84000259	2013-08	2013-07-24	2013-08-23	$4,042.68	30
5619	BLD 04	V84000259	2013-07	2013-06-23	2013-07-24	$4,131.47	31
5618	BLD 04	V84000259	2013-06	2013-05-25	2013-06-23	$3,696.42	29
5617	BLD 04	V84000259	2013-05	2013-04-25	2013-05-25	$3,336.44	30

PAY BILL (After clicking on Pay Bill in previous screen)



VIEW ALL DEVELOPMENTS (NYCHA Admin View)

Admin users can click on a development to get a list of buildings, as in diagram #3.



ID	Name	Borough	TDS	EDP	AMP
1	154 WEST 84TH STREET	MANHATTAN	359	840	NY005013590P
2	ARMSTRONG I	BROOKLYN	210	325	NY005012100P
3	BAISLEY PARK	QUEENS	91	240	NY005010910P
4	BAY VIEW	BROOKLYN	92	670	NY005020920P
5	BELMONT-SUTTER AREA	BROOKLYN	345	761	NY005010460P
6	BERRY STREET-SOUTH 9TH STREET	BROOKLYN	357	777	NY005011310P
7	BETANCES III, 9A	BRONX	222	339	NY005012110P
8	BETANCES VI	BRONX	285	545	NY005012110P
9	BOULEVARD	BROOKLYN	46	637	NY005020460P
10	BOYNTON AVENUE REHAB	BRONX	346	767	NY005010320P
11	BRYANT AVENUE-EAST 174TH STREET	BRONX	235	352	NY005015300P
12	BUSHWICK II (GROUPS A & C)	BROOKLYN	302	565	NY005012470P

Database Schema