Project Title: Real Smart
Students: Christopher Diaz, Saul Lopez, Julie Teplik
Mentor: Dr. Srividya Bansal
Institution: Arizona State University, Polytechnic Campus

**Goals and purpose of the project:** In recent years, the global economy has begun to operate in real time. Because of this, any information that is presented on the web must be able to be immediately related to other relevant data through links, but still somehow show which concepts are distinct with semantic metadata. Doing this would allow machines to search and query the Big Data as well as make a way for analytic tools. This is a vital piece of the puzzle to create smart and sustainable environments. This movement to organize Big Data is already underway. The need to integrate Big Data into meaningful links, or ontologies, has been heightened in recent years due to a growing demand and interest in mobile applications for improving quality of life in urban cities.

The purpose of this undergraduate research project was create a real estate advisor app by investigating and using semantic technologies to integrate datasets within various domains in order to create linked data by:
(i) creating a semantic data model via ontologies to provide a basis for integration and understanding knowledge from multiple sources;
(ii) generating integrated semantic instance data as linked data using RDF as the graph data model [1];
(iii) extracting useful knowledge and information from the combined web of data using SPARQL as the semantic query language [2]
(iv) creating data-driven applications (web/mobile) for smarter living.

**The process used in completing the research:**
- Research info on linked data, xml, rdf, owl, lots of research papers
- Web Scraping (static vs dynamic info, downloading, headless vs head 'browser')
- Create diagram
- Converting JSON to JSON-LD
- Wireframes
- Mockups
- Set up with ruby
- Create website

**Conclusion**:

At this point, we have all of the data we need and the web application is close to being done. All we have to do is to write the queries to populate our site with our found data. We learned a lot from this process and hope that our website can be useful.


**Results:**

So far we scraped data from multiple sources, created a protege owl diagram, webized our data using json-ld, and developed and deployed a web application.

**Content developed in the research project (Websites and Papers or Projects):**

Saul's Blog Site: https://sites.google.com/a/asu.edu/creu-saulslopez/

Julie's Blog Site:https://jtepliksblogforresearchproject.wordpress.com/

Chris Blog Site: http://crdiaz3.weebly.com/

Website: http://dry-fortress-86389.herokuapp.com/ (WIP)

Tapia Submission Paper

**References:**

[1]P. Hayes and B. McBride, "Resource description framework (RDF)", W3.org, 2004. [Online]. Available: http://www.w3.org/TR/rdf-mt/. [Accessed: 28- Feb- 2014].

[2] W3.org, "SPARQL Query Language for RDF", 2013. [Online]. Available: http://www.w3.org/TR/rdf-sparql-query/. [Accessed: 28- Feb- 2014].