Project Description:
A Cultural Heritage Crowdsourcing Plaftorm

Spring 2017

Cultural Heritage concerns physical artefacts as well as intangible characteristics of groups that are inherited from one generation to another. Cultural Heritage may be tangible or not. They are often related to a group of people, who may or may not come from a certain region. They describe patterns and customs associated with groups of people. Due to the erosion of cultural information, its digital recording has gained much importance.

This project aims to capture cultural heritage information in a crowdsourced manner. Thus, not only are cultural heritage item will be represented, but also the experiences and responses of the users will also be recorded. Users will be able to create new heritage items, search for existing items, and annotate existing items. Heritage items need to have descriptions and support useful media representations. The media files may exist on other platforms so long as the user has permission to share them. In other words, the wisdom of the crowds will also be recorded. Annotations may support various purposes, such as elaboration, translation, meta information, question, and answer. Figure 1 shows online content that gives information about an archaeological site. Figures 2 and 3 show annotations for the Gutenberg bible and a song from the US civil war. Users will be able to annotate images with explanations, questions, answers, geographical references, and links. The links may be to semantic resources, which provide more detailed information related to the resource.

You application should use the crowdsourced information to provide recommendations, search, and advanced search.

The W3C Web Annotation Data Model proposed recommendation will be used to annotate heritage items. Its associated web annotation protocol (based on LDP) will be used to store annotations. The World Wide Consortium (W3C) [4] who works on all Web standards has introduced standards for representing annotations and their management. The Web Annotation Data Model [2] describes the vocabulary and its characteristics. The annotations should be stored and retrieved in accordance with the the protocol [3]. This protocol is based on Linked Data Platform [8], which addresses the

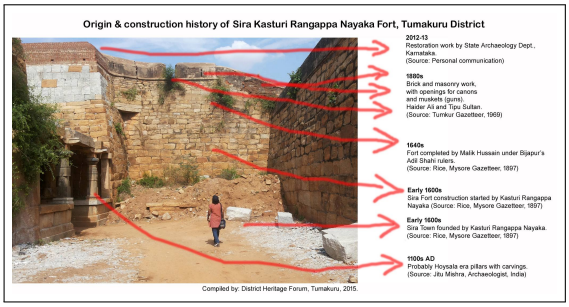

Figure 1: The manual annotation of an image for an archaeological site named Sira Kasturi Rangappa Nayaka Fort in Tumakuru by Digital Heritage Forum.

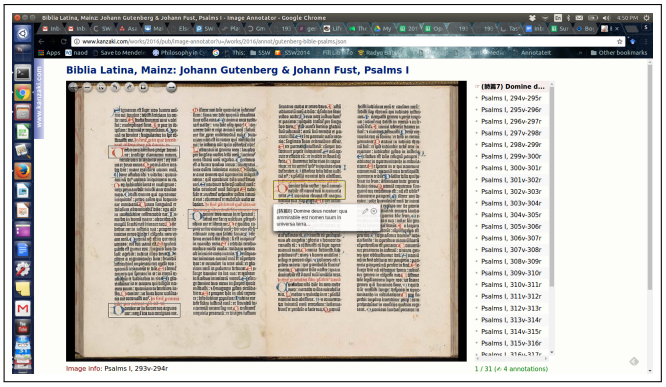

Figure 2: Annotation of a page in a Gutenberg bible.

needs for Linked Data[1] [5, 1, 7]. A web browser plugin (Firefox) that enables users to create and visualize annotations for cultural heritage must be provided. Annotations must be stored and retrieving with an API that is compliant with the standard. The annotations should be tested to assure validity. JSON-LD should be used for annotation representation as described in the W3C documentation. As expected, open source software with appropriate use permissions may be used, so long as it is properly attributed and documented.

Some examples are Adobe Reader[2] for editorial comments, Genius [6] for annotating web pages, label.me[3] to label images for research, and many more. Digital libraries utilize annotations[4]. One issue is that various applications have different and often proprietary representations yielding anno-

[1] See `http://linkeddata.org/toexaminesomeofthedatapresentononlinkeddata`.

[2] `https://docs.adobe.com/docs/en/cq/5-4/wcm/default_components/annotations.html`

[3] http://labelme.csail.mit.edu/Release3.0/

[4] See `http://labs.europeana.eu/api/annotations-scenarios` for good use cases examples

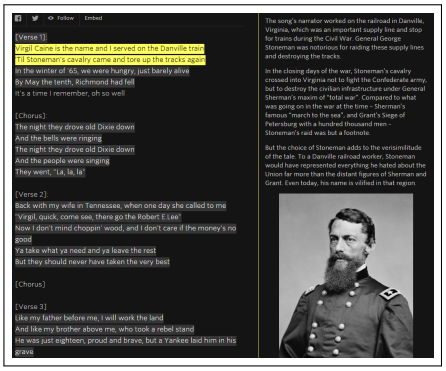

Figure 3: Annotation of a song during the US Civil War in Virginia.

tations as non interoperable, which is not desired in open data contexts.

References

[1] Linked data - connect distributed data across the web, 2016. http://linkeddata.org/.

[2] Web annotation data model. `https://www.w3.org/TR/annotation-model/`, 2016. Accessed: 2016-04-14.

[3] Web annotation data model, w3c candidate recommendation. `https://www.w3.org/TR/annotation-protocol/`, 2016. Accessed: 2016-04-14.

[4] *World Wide Web Consortium*, 2016. accessed at July 2016.

[5] C. Bizer, T. Heath, and T. Berners-Lee. Linked data-the story so far. *Semantic Services, Interoperability and Web Applications: Emerging Concepts*, pages 205–227, 2009.

[6] Genius. Genius web annotator. `http://genius.com/web-annotator`, 2011. Accessed: 2016-09-07.

[7] T. Heath and C. Bizer. Linked data: Evolving the web into a global data space. *Synthesis lectures on the semantic web: theory and technology*, 1(1):1–136, 2011.

[8] S. Speicher and J. Arwe. Linked data platform 1.0. `http://www.w3.org/TR/ldp/`, 2015. Accessed: 2016-09-07.