

# DRS Access for Mobile Devices

## Final Report

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**Project summary:** The goal of this project was twofold: first, to create an Application Programming Interface (API) to facilitate access to the resources stored in the DRS; and second, to build an interface for the use of these resources on mobile devices such as smartphones and tablets.

**Accomplishments:** Both the API and the interface for mobile device display have been created. The interface allows users to see and navigate through the contents of a document, displays bibliographic data and OCR text (if available) upon request, and links back to the HOLLIS record for the object.

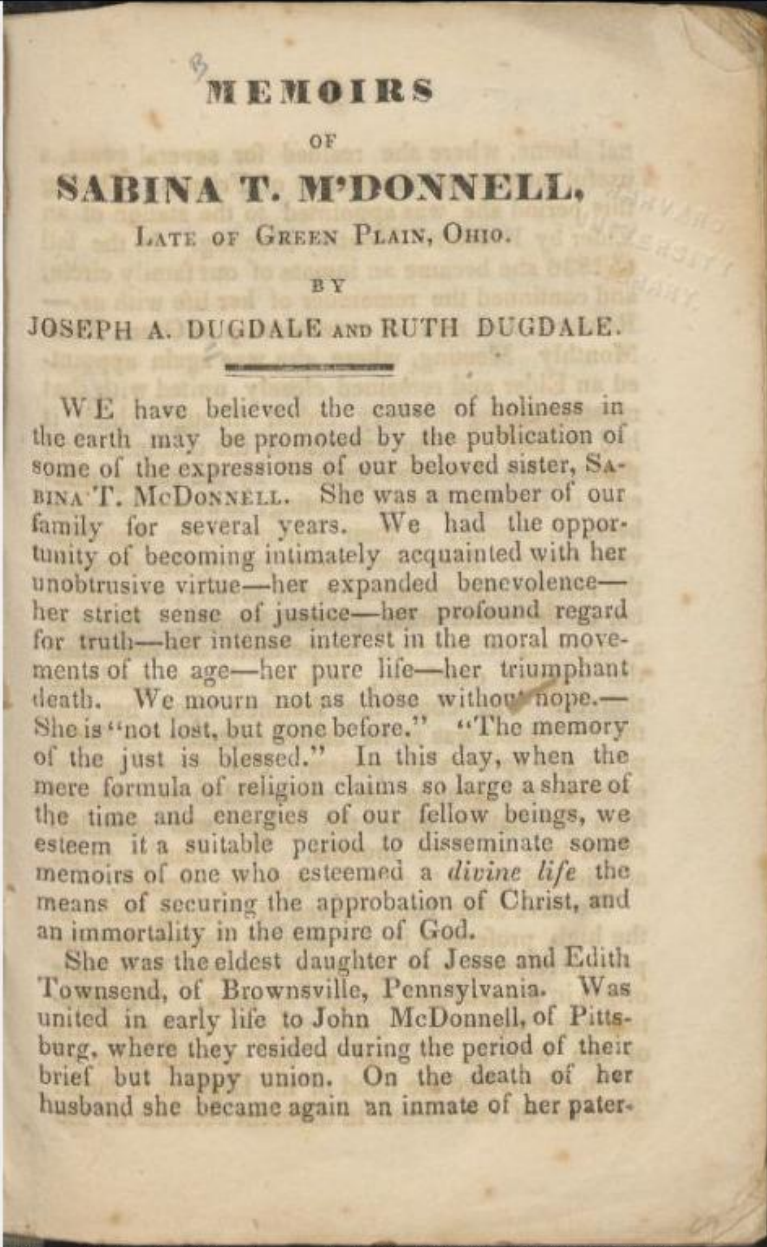
The API consists of a web service created within the Page Delivery Service software. It consists of five methods to support traversing a page-turned object and retrieving page and object-level metadata in xml. It also permits searching within a page-turned object or against the entire index of page-turned objects using OIS's Full Text Service.

The mobile client is a web app written entirely using the Sencha Touch javascript framework. It can be used by any mobile device or desktop/notebook computer with a modern (webkit-based) browser. We took design cues from the [Read Online Interface](#) at the Internet archive, as it has a slim navigational interface that leaves most of the screen space for the content itself. The client can be used in portrait or landscape viewing modes and although it is optimized for tablet-sized browsers such as an iPad or Xoom, it can also display pages on smartphone screens. We also enabled browser detection in an unreleased version of PDS to properly recognize and reroute requests from HOLLIS mobile users to our new interface as a proof of concept.

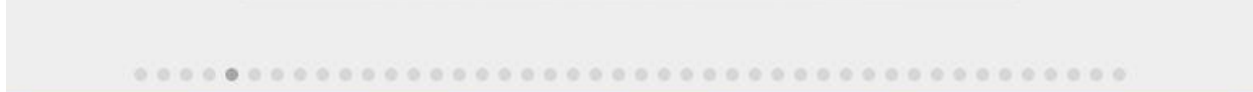
Below are some screenshots of the application when accessing this sample url:

<http://pdstest.lib.harvard.edu:9005/pds/mobile/index.html?id=760585>

**PDS: Shelley, Percy Bysshe.**



Harvard University, OIS\_test\_account\_for\_the\_QA\_DRS, xHOLLISBUGx0005



Initial view of PDS mobile. This is the view a mobile user sees when accessing an object.

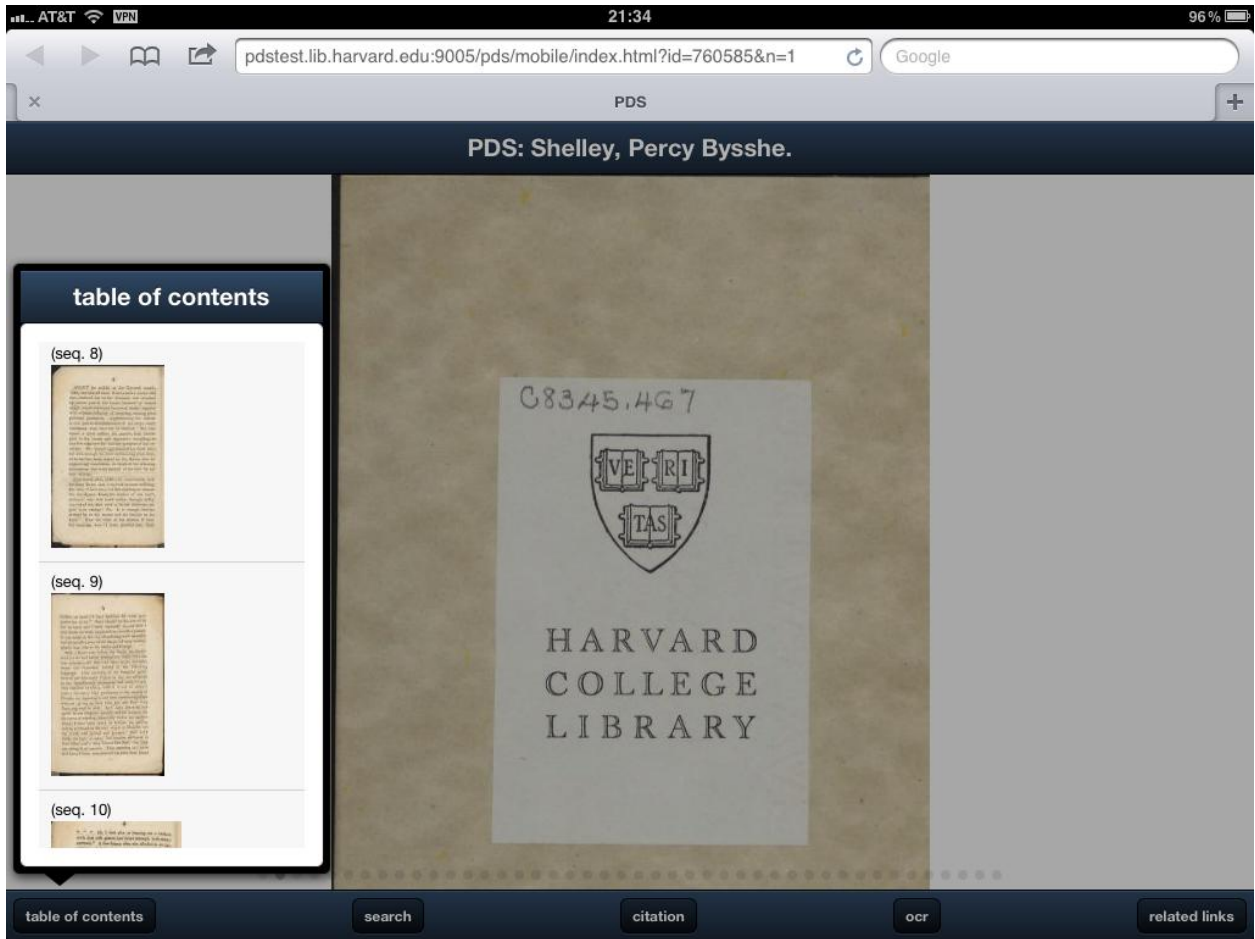


Table of contents popup window

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pdstest.lib.harvard.edu:9005/pds/mobile/index.html?id=760585&n=1 Google

PDS

### PDS: Shelley, Percy Bysshe.

ocr

Father, on earth ; I have finished the work thoi gavest me to do." Such should be the aim of ai ins servants, and I have earnestly craved that . may finish the work appointed me, to suffer patient and drink of the cup of suffering, both mentally and physically, even to the dregs, if I may thereby 29th. — Some time before day break, we discov ered (as we had before through the night) that sh was wakeful — we rose and went to her bed-side when she expressed herself in the followin; language: After speaking of the bountiful good Res of our Heavenly Father to her, she advertet to the Anti-Slavery movement and said, "I was "erv cautious in taking hold of it. but oh when very cautious m taiung noiu 01 n, dui on when I reflect that many high professors in the society o Friends are opposing it, arttl even persecuting tliosf who are giving up their time, yes, arsd their vtr\ t lives, my soul is sick. As I have observed this spirit in our religious society and its tenacity foi the (onus of worship, (especially within the last twr years,) I have been ready to believe the society will be scattered to the four wauls of Heaven; bir the truth will spread and prosper. And yet 1 think the light in many has become darkness in their blind zeal ; they believe like Saul, that they are doing G .id service. This morning as I have laid here, J. have remembered our poor dear friend

years,) I have been ready to believe the society will be scattered to the four winds of Heaven; but

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Ocr text view

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PDS

### PDS: Shelley, Percy Bysshe.

Life

Shelley, Percy Bysshe. 5  
*for truth — her intense interest in the moral move of the age — her pure **life** — her triumphant... of one who esteemed a divine **life** the means of securing the approbation of Christ, and..., Pennsylvania. Was united in early **life** to John McDonnell, of Pitts where they resided during*

Shelley, Percy Bysshe. 11  
*-lar or walnut, I need no «ap in **life**, therefore none to sdoru the lifeless 'lay. «• f » Mcl)osi, kli... Father towards rjie in early **life**; when He was pleased to sundei the tenderest ties of **life**, to remove*

Shelley, Percy Bysshe. 38  
*spirit, entered on its higher **life** in the celestial woild. — After the vital spark was extinct, we... then unobserved, her clothing and the floor were stained by her **life**-blood, which had (lowed fast... off", shows that she lived so near the Author of her being, that the transition from this **life** to*

Shelley, Percy Bysshe. 6  
*of her **life** with us. — Jlemoved her right of membership to Green Plain Monthly Meeting\* whe're... \* We affeo tionately commend to these the following memoirs of one who in **life** and in the solemn hour*

Shelley, Percy Bysshe. 39  
*and enjoyment as I think was ever designed we should, in our pilgrimage through this **life**... writing after she had entered on "her higher **life**," a copy of which is appended: — "When our eyes*

Shelley, Percy Bysshe. 12

years, I have been ready to believe the society will be scattered to the four winds of Heaven; but

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Searching within a document

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pdstest.lib.harvard.edu:9005/pds/mobile/index.html?id=760585&n=1 Google

PDS

### PDS: Shelley, Percy Bysshe.

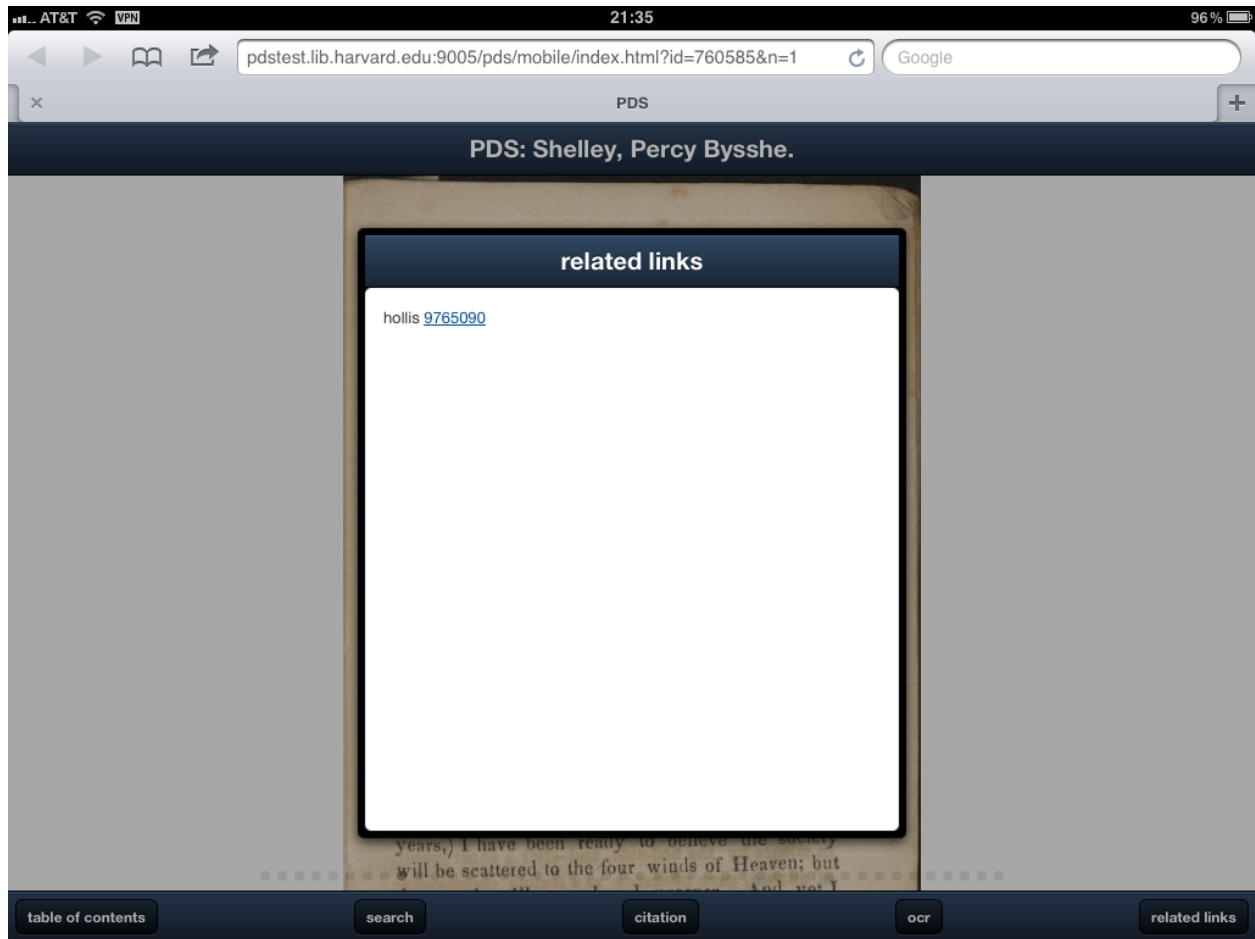
#### citation

**Description:** Shelley, Percy Bysshe.  
**Page:** (seq. 9)  
**URN:** [http://nrstest.harvard.edu:9031/urn-3:HUL\\_Guest:VZ172181](http://nrstest.harvard.edu:9031/urn-3:HUL_Guest:VZ172181)  
**Repository:** OIS\_test\_account\_for\_the\_QA\_DRS  
**Institution:** Harvard University  
**Accessed:** 15 November 2011

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Citation information



Related items

### Challenges:

Developing the UI in Sencha Touch was quick, however we discovered that its AJAX libraries had several bugs in handling xml which forced us to slightly refactor some of our web service method responses. We were able to achieve most of our desired functionality, such as swiping across the screen to flip through pages, using pop-up windows to navigate through a document and show citation/ocr/related item information. We were not however able to implement pinch-and-zoom functionality due to time constraints, but the underlying web service supports delivering pages in varying resolutions and we are confident that this feature could be added in a future round of development. We feel that this functionality can be implemented within the Sencha Touch framework and our API, so using a third-party jpeg2000 server such as djakota would not be necessary. Although it was not a priority feature, we were not able to implement a user feedback feature. We had investigated using an existing OIS web-based feedback utility in the PRESTO software package that would have provided this functionality, but unfortunately it was not a web-service based utility that we could have used for our application.

**Next steps:**

Our near-term next steps from a development standpoint would be to implement pinch and zoom functionality, add a user feedback mechanism on the interface and provide printing/emailing of images. In terms of directions for further development long-term, the interface at this point is able to display page-turned objects which would otherwise be displayed in the Page Delivery System (PDS). Ideally, the interface should be further developed (or a second similar interface created) to display single images which are currently displayed in the Visual Image Access system (VIA).

The most important next step would be for the interface to be formally adopted by OIS as the delivery mechanism when digitized materials are accessed from mobile devices. This would entail OIS assuming responsibility for the implementation and future development of the interface.

**Budget:**

Phase 1: 2-3 weeks = 21 hours of development/release time x \$58/hour = \$1,218

Phase 2: 5-6 weeks = 42 hours of development/release time x \$58/hour = \$2,436

Phase 3: 5-6 weeks = 42 hours of development/release time x \$58/hour = \$2,436

iPad for testing and demonstration = \$513

**Promotion:** We have demonstrated our application at the Library Lab Showcase, the screencast demo, to OIS's development group and to the ABCD-Mobile user group. Outside of those, it will be necessary to wait for formal adoption of the interface by OIS to do effective promotion to the audience of end users of digitized special collections.