

**EXHIBIT B – SAMPLE PROJECT  
REWRITE OF FLVS PROPRIETARY LEARNING MANAGEMENT SYSTEM**

**Sample Project 2 - Rewrite of FLVS Proprietary Learning Management System**

FLVS is seeking service provider for the purpose of redeveloping Perl-based pages of the FLVS proprietary Learning Management System (LMS) using Angular and Node.js API. FLVS shall provide awarded contractor with access to an FLVS development and test environment. Developer shall also be responsible for performing a full quality assurance (QA) review prior to content delivery to FLVS. Following developer QA, content shall be routed to FLVS for internal FLVS QA review and approval process. Contractor shall be responsible for revisions if needed following FLVS review at no additional cost. Awarded contractor shall correct defects within ten (10) business days. If more than two rounds are revisions are required, FLVS at its sole discretion retains the right to cancel the SOW without payment for any unaccepted deliverables.

- Current testing frameworks are behavior driven.
- Automated testing is not currently offered in DevOps.
- All work shall be completed within FLVS system.
- Pages shall be responsive down to standard phone screen sizes.
- User types accessing the usage logs include (but may not be limited to) FLVS students and instructors.
- Some stored data code may need to be added to the API to call the data as part of this effort.
- Required edits may be made to usage page, login history, heatmap, daily usage heatmap, and profile.
- Both thisusagelog.cgi and profile.cgi are part of the user stories and shall be rewritten in Angular with PrimeNG components.
- Development includes implementing WCAG Level A and AA standards in the newly developed code only. The number of accessibility backlog items are simple edits – such as color contrast or alt tags and can be addressed as part of the rewrite.
- The new layout will be added only to the newly developer pages that are being rewritten in Angular.
- The scope is limited to the new, Angular based page. SEO is not required. Node.js work will be required to augment our existing API to support the user stories.

**Sample Project 2 Deliverables - Rewrite of FLVS Proprietary Learning Management System**

Sample User Stories: “Perl Rewrite: Usage Logs Page” provided as Exhibit B, contains the actual content of the LMS page for rewrite. FLVS has provided six (6) User Stories for this initial rewrite project. The provided User Stories represent one page of content for rewrite within the LMS.

Deliverable	Quantity
User Story 1 - 508 WCAG 2.1 Accessibility Compliance	1
User Story 2 - Stylization using Prime NG Components	1
User Story 3 - Mobile Responsive	1
User Story 4 - Usage Logs	1
User Story 5 - This Usage Log	1
User Story 6 - Sizing of Modals	1
Total User Stories	6

Item Number	Resource/Developer Responsibilities	Included YES or NO
1	Developer attends daily scrums and weekly team meeting with FLVS team as directed.	
2	Developer reviews User Stories with the FLVS Business Analysts team (See User Stories in Attachment 1).	
3	Developer creates an FLVS design document with associated tasks and level of effort.	
4	Developer follows FLVS LMS Development Guidelines (to be provided to awarded Contractor).	
5	Developer uses graphic and user interface components from the provided PrimeNG showcase.	
6	Developer reviews the on-going development with FLVS developers and /or architect.	
7	Developer provides quality assurance (QA) on all work prior to submitting to FLVS.	
8	Developer performs revisions identified during FLVS' QA process. The review process shall repeat until final acceptance and approval by FLVS at no additional cost.	

Note: Knowledge of Perl helpful but not required

### Resource Requirements

Respondent shall provide staff with a minimum technical skill level per the intermediate and advanced technical skills outlined below. Response shall include resume(s) of proposed resources demonstrating ability to meet or exceed the skills listed below.

Minimum Technical Skills – Developer(s)	3-5 years Intermediate	7+ years Advanced
Angular + TypeScript	✓	
Node.js (3-5 years)	✓	
Git	✓	
HTML 5 Development	✓	
Microsoft Office Applications		✓
Browsers (Chrome, Internet Explorer, Safari, and Firefox)		✓
Cascading style sheets		✓
Javascript		✓
XML		✓
Graphic Design experience	✓	

### Staffing Plan and Resumes

Respondent shall provide staffing plan that identifies the **individual or team** needed to complete the effort **within a six-week period**. This plan shall incorporate FLVS review periods as described including time for revisions based upon FLVS feedback. In addition to providing resource resume, respondent shall include their risk mitigation plan describing their ability to staff additional and or replacement resources and how they mitigate risk to project schedule and options.

Note: While the main point of contact shall need to be accessible during normal FLVS hours of operation FLVS is open to use of off-shore developer resources. The Proposer shall specify their plan within the response.

**Project Plan (Milestones, Workflow and Due Dates)**

Work will commence upon execution of statement of work and issuance of FLVS purchase order with completion and acceptance of all deliverables due no later than six weeks from the kick off date. Respondent shall provide:

- a. Project Methodology detailing the managed approach including, but not limited to meeting schedule, assigned resource(s), assumptions pertaining to FLVS roles and responsibilities, communication plan, risk mitigation and problem escalation process.
- b. Milestones that specify the project schedule, milestone due dates, project completion date, key tasks and task durations, task ownership and list of completed deliverables. The plan shall factor in FLVS QA review period of 5-7 business days for each deliverable and FLVS holiday schedule provided below.
- c. Respondent shall include within the proposal response any assumptions that support their proposal including but not limited to pricing. FLVS reserves the right to clarify assumptions prior to award.

**The following will be provided to the awarded Contractor:**

- Access to the necessary FLVS Test environment(s)/pages and FLVS resources
- Developer Virtual Machine
- Training
- System documentation
- Time to complete technical documentation (FLVS provided template) before commencing with development
- Designs that need to be applied to the Usage Logs

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## User Stories (SRS Requirements)

### User Story # 1 – 508 WCAG 2.1 Accessibility Compliance

<b>Objective/Goal</b>
When rewriting a current page from Perl, both existing and new development should meet all WCAG Level A and AA standards at the domain level.
<b>User Story # 1a – Accessibility Compliance</b>
<p><b>As an</b> Educator user,</p> <p><b>I need</b> all Educator Web content to meet WCAG accessibility guidelines Level A and AA according to the guidelines below,</p> <p><b>So that</b> usability is improved for all individuals with visual, auditory, physical, speech, cognitive, language, learning, and neurological disabilities within the LMS.</p> <p><b>I will know this is done</b> when new development is compliant with WCAG guidelines after being tested with appropriate accessibility checkers (Ex. AXE and screen reader NVDA)</p> <p><u>Note:</u> Web Content Accessibility Guidelines (WCAG) 2.1 link below: <a href="https://www.w3.org/TR/WCAG21/">https://www.w3.org/TR/WCAG21/</a></p>
<b>User Story # 1b – Backlog Accessibility Defects</b>
<p><b>As an</b> Educator user,</p> <p><b>I need</b> all Educator Web content to meet WCAG accessibility guidelines Level A and AA according to the guidelines below,</p> <p><b>So that</b> usability is improved for all individuals with visual, auditory, physical, speech, cognitive, language, learning, and neurological disabilities within the LMS.</p> <p><b>I will know this is done</b> when previously found accessibility defects have been fixed and closed in the feature rewrite.</p> <p>Note: Be sure to check the Educator Accessibility Backlog items and fix with this feature.</p>



## User Story # 2 – Stylization using Prime NG Components

### Objective/Goal

All redesigned pages should go through a design process using the Prime NG components showcase.

### User Story # 2 – Stylization

**As an** Educator user,

**I need** the *Usage Logs* page in Educator to be styled using the Prime NG Components for the following elements:

- Navigation Bar
- Header Component
- Redesign layout
- Copy Button
- Excel/CSV Button
- Print Button

**So that** a consistent theme is used throughout all pages within the LMS.

**I will know this is done** when I navigate to the *Usage Logs* page, and I see the following elements styled with Educator Prime NG Components:

\*\* Stuart will work on mockup options for design.

#### Note:

URL to Usage Logs Page- <https://learn.flvs.net/educator/teacher/usagelog.cgi>

URL to Prime NG Showcase – Educator Repo UX

Note 2:

URL and Tab heading should match Header on page. Ex. Course Usage Log

### User Story # 3 – Mobile Responsive

**Objective/Goal**

Provide users a mobile responsive experience within the Usage Logs page.

**User Story # 3 – Mobile Responsive**

**As an** Educator user,

**I need** the ability to accurately view and work from my Usage Logs page in Educator on a mobile device,

**So that** when I am unable to use a computer, I can search Usage Logs.

**I will know this is done** when I can view and work from my correctly sized Usage Logs page on my mobile device.

Note:

URL - <https://learn.flvs.net/educator/teacher/usagelog.cgi>

### User Story # 4 – Usage Logs

**Objective/Goal**

To rewrite and update the Usage Logs page from Perl into Angular/Node JS.

**User Story # 4a – Usage Logs**

**As an** Instructor,

I need the ability to access the following data on the usage log for any/all users in the course

- Name
- Username
- Connections
- Days: Hours: Minutes
- Actions
- Average Session Length

So that I know how many times a user has logged into my course, how long they were logged into the course, and how many actions were taken while in my course.

I will know this is done when I can log into my course, select tools, click usage log and see the following information on the page for all students in my course:

- Name
- Username
- Connections
- Days: Hours: Minutes
- Actions
- Average Session Length

Note:

The example below is a screen shot of the existing page. The new page should be built with PrimeNG components.

FLVS Workload 11 Roster Email Tools M/J Grade 7 Mathematics V14 Marinellis Contreras (4027/TA) Scott

**flvs**

User: Scott Miller (Signed in as Teaching Assistant)  
 In Course: M/J Grade 7 Mathematics V14 ( 4027)  
 Instructor: Marinellis Contreras

Click on a users name to bring up their expanded usage information  
 Sort by clicking on the table headers.

Copy Excel / CSV Print

Filter:

Name	Username	Connections	Hours:Minutes	Actions
Master 2193 <i>Teaching Assistant</i>	jbrown1005	13	6694:47	0
Master 3092 <i>Teaching Assistant</i>	msmithwalker1	3	5:25	0
Master 3939 <i>Teaching Assistant</i>	sdecambre3	5	173:29	0
Master 4027 <i>Teaching Assistant</i>	gmcmanus1	1	0:51	0
Master 4027 <i>Teaching Assistant</i>	mburney2	1	0:10	0
Master 521 <i>Teaching Assistant</i>	pbutfiloski1	4	0:17	0

**User Story # 4b – Sort Data**

As an Instructor,  
 I need the ability to sort the data on the Usage Log page,  
 So that I can view data in ascending or descending order.  
 I will know this is done when I am able to sort by any/all sets of data for the course.

**User Story # 4c – Filter Data**

As an Instructor,  
 I need the ability to filter the data on the Usage Log page,  
 So that I can filter the information to find a specific data point.  
 I will know this is done when I have the option to filter all the information on the page.

**User Story # 4d – Copy the Data**

As an Instructor,



I need the ability to copy all the data to the clipboard,

So that I can paste it into another program.

I will know this is done when I can easily copy all the data on the page to the clipboard on my computer.

#### **User Story # 4e – Download the Data**

As an Instructor,

I need the ability to download all the data to an Excel/CSV file,

So that I can open it using a spreadsheet program.

I will know this is done when I can easily download all the data on the page to a spreadsheet file.

Note: Most FLVS teachers use Microsoft Excel or Google Sheets. Franchise may use different programs.

#### **User Story # 4f – Print the Data**

As an Instructor,

I need the ability to print all the data,

So that I can have a hard copy of the data.

I will know this is done when I can easily send all the data on the page to my printer.

#### **User Story # 4g – Individual Usage**

As an Instructor,

I need the ability to view any individual user's information,

So that I can gather more detailed data about this user's connectivity history.

I will know this is done when I can click on any name and view additional information about activity, connections, and time spent in the course.

Note: Currently information is on [thisusagelog.cgi](#)

#### **User Story # 4h – User Profile**

As an Instructor,

I need the ability to view the following information by clicking on the Username:

- Last Signed in Date/Time
- Name
- Enrollment Type
- Level (Roll)
- Student E-mail
- Parent(s)/Guardian(s) Email (all available emails)
- Year in School
- Course Records

So that I can access user's profile information as currently featured on other Educator pages (i.e., roster, email, workload, etc.).

I will know this is done when I can click on any Username and pull up that user's profile.

Note:

The example below is a screen shot of the existing page. The new page should be built with PrimeNG components.

Student Profile: 4711 - Google Chrome

learn.flvs.net/educator/teacher/profile.cgi?wsmith232\*slt=5tUpN/w3l.0...

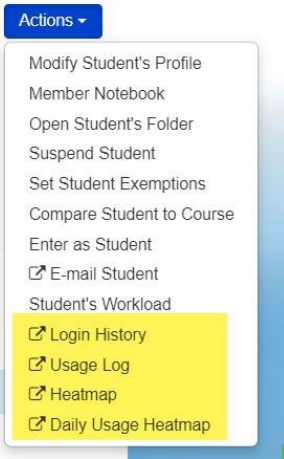
Last signed in:	Sep 14 10:31:31 2021
Name:	Patrick
Enrollment Type:	(FLVS FULL-TIME 9-12)
Honors Status	
Level:	Student
E-Mail:	
Parent(s)/Guardian(s) E-Mail:	
Year in School:	9
<a href="#">Course records</a>	

Note: Currently information is on profile.cgi

### User Story # 5 – This Usage Log

Objective/Goal

To rewrite and update the This Usage Logs page from Perl into Angular/Node JS.  
 All the following can be accessed in other areas of Educator (i.e., course roster, grade report, who's online, etc.)



Actions ▾

- Modify Student's Profile
- Member Notebook
- Open Student's Folder
- Suspend Student
- Set Student Exemptions
- Compare Student to Course
- Enter as Student
- E-mail Student
- Student's Workload
- Login History**
- Usage Log
- Heatmap
- Daily Usage Heatmap

### User Story # 5a – Login History

As an Instructor,

I need the ability to view the following for an individual's login history

- Signed In Date/Time
- Signed Out Date/Time
- IP Address

So that I can see the signed in date and time, signed out date and time, and IP address for each user's session.

I will know this is done when I am able to click on a student's name, select the Login History, and am able to view the following information:

- Signed In Date/Time
- Signed Out Date/Time
- IP Address

Note:

The example below is a screen shot of the existing page. The new page should be built with PrimeNG components.

Johnetta Brown		
Signed In	Signed Out	IP Address
12/03/18 3:12 PM	12/03/18 3:17 PM	67.30.143.33
12/03/18 3:12 PM	12/03/18 3:12 PM	67.30.143.33
01/05/21 4:12 PM	01/05/21 4:17 PM	72.216.0.9
04/16/21 11:02 AM	Session Expired	72.216.0.9

Note 2: Currently found on the [thisusagelog.cgi](#) page under Login History in Change view dropdown

### User Story # 5b – Usage Log

As an Instructor,

I need the ability to view the following for an individual's usage log

- Date/Time
- Action (View/Post/Feedback, etc. and hyperlinked assessment)

So that I can see the date and time and action taken for each user's action.

I will know this is done when I am able to click on a student's name, select the Usage Log, and am able to view the following information:

- Date/Time
- Action (View/Post/Feedback, etc. and hyperlinked assessment)

Note:

The example below is a screen shot of the existing page. The new page should be built with PrimeNG components.

FLVS Workload 11 Roster Email Tools M/J Grade 7 Mathematics V14 Marinelis Contreras (4027/TA) Scott

Change View: Usage Log

Perform even more advanced tracking at the [Notification center](#)

Filter:

Copy Excel / CSV Print

Claire Aaron	
Time	Action
08/16/21 10:56 AM	POST: Exam: 01.01 The Number Line - Object ID: 71 Time Spent: 0:2:37
08/16/21 10:56 AM	VIEW: Exam: 01.01 The Number Line - Object ID: 71
08/16/21 11:53 AM	POST: Exam: 01.03 Mid-Module Check - Object ID: 63 Time Spent: 0:55:59
08/17/21 1:49 PM	FEEDBACK: Exam: 01.03 Mid-Module Check - Object ID: 63

**Note:** Currently found on the [thisusagelog.cgi](#) page under Usage Log in Change view dropdown  
**Note2:** Advanced notification banner needed?

#### User Story # 5c – Sort Data

As an Instructor,

I need the ability to sort the data on the Login History and Usage Log page,

So that I can view data in ascending or descending order.

I will know this is done when I am able to sort by any/all sets of data for the course.

#### User Story # 5d – Filter Data

As an Instructor,

I need the ability to filter the data on the Login History and Usage Log page,

So that I can filter the information to find a specific data point.

I will know this is done when I have the option to filter all the information on the page.

#### User Story # 5e – Copy the Data

As an Instructor,

I need the ability to copy the data from the Login History or Usage Log to the clipboard,

So that I can paste it into another program.

I will know this is done when I can easily copy all the data on the page to the clipboard on my computer.

**User Story # 5f – Download the Data**

As an Instructor,

I need the ability to download the data from the Login History or Usage Log to an Excel/CSV file,

So that I can open it using Microsoft Excel.

I will know this is done when I can easily download all the data on the page to a Microsoft Excel file.

**User Story # 5g – Print the Data**

As an Instructor,

I need the ability to print the data from the Login History or Usage Log,

So that I can have a hard copy of the data.

I will know this is done when I can easily send all the data on the page to my printer.

**User Story # 5h – Day/Hour Heatmap**

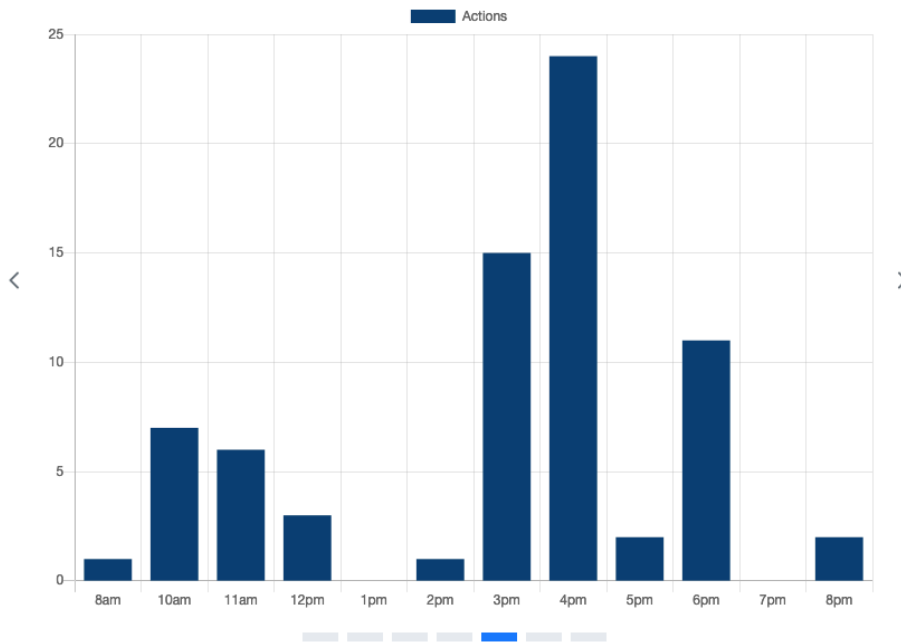
As an Instructor,

I need the ability to view an individual's daily heatmap,

So that I can see the number of logins for each hour block in a week.

I will know this is done when I am able to click on a student's name, select the Day/Hour Heatmap, and am able to view the Day/Hour Heatmap.

### Thursday



Note: Currently found on the [thisusagelog.cgi](#) page under Usage Log in Change view dropdown

#### User Story # 5i – Daily Usage Heatmap

As an Instructor,

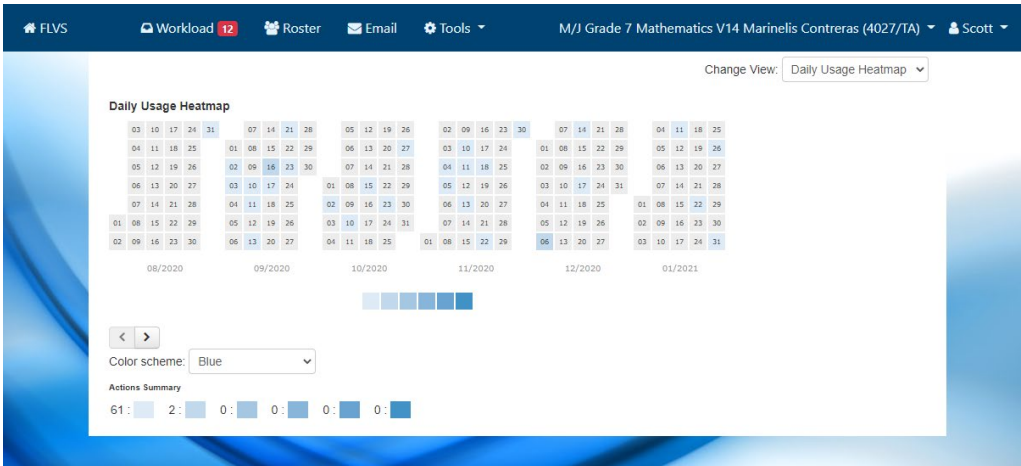
I need the ability to view an individual’s daily usage heatmap,

So that I can see the number of actions taken each day in the course.

I will know this is done when I am able to click on a student’s name, select the Daily Usage Heatmap, and am able to view the Daily Usage Heatmap

Note:

The example below is a screen shot of the existing page. The new page should be built with PrimeNG components.



Note 2: Currently found on the [thisusagelog.cgi](#) page under Usage Log in Change view dropdown

Note 3: Keep description of color coding and actions summary (another story?)

### User Story # 5j – Color Legend Daily Usage Heatmap

As an Instructor,

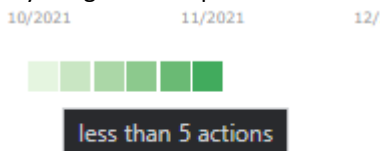
I need to have a legend showing what data set each color represents on the Daily Usage Heatmap,

So that I will clearly understand how to interpret the heatmap.

I will know this is done when I can view and understand the legend on the Daily Usage Heatmap.

NOTE: Examples of current functionality, usable but not clear and concise. Need a better way to display.

Daily Usage Heatmap:



### User Story # 5k – Daily Usage Heatmap Action Summary

As an Instructor,

I need the count of the number of days that have actions taken by the user in the following ranges:

- 1-5 actions
- 6-10 actions



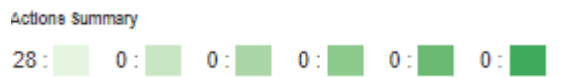
- 11-15 actions
- More than 15 actions

So that I will know the number of days that the user took the given number of actions based on the range above.

I will know this is done when I can view a summary showing the number of days that the user took the following number of actions:

- 1-5 actions
- 6-10 actions
- 11-15 actions
- More than 15 actions

Note: Improve clarity of the summary



Note2: Use the same legend from story 5k

### User Story # 5l – Daily Usage Heatmap Open

As an Instructor,

I need a visual representation of all user actions in the course from the date of first action to the last with the following criteria:

- Three-month calendar view
- Default to date of last action
- Ability to easily navigate through all actions

So that I can efficiently view when the selected user's actions in the course were completed.

I will know this is done when a three-month calendar, defaulting to the date of the most recent action, populates for the chosen user.

### User Story 6 – Sizing of Modals

#### User Story # 6a – Proper This Usage Log Modal Sizing

As an Instructor,

I need the thisusagelog.cgi modal to always open with all information on the page visible,

So that I do not have to resize or scroll the window to view the needed data.

I will know this is done when I click on a user's Name or Actions and the modal that opens to the thisusagelog.cgi is viewable without needing to resize or scroll the window.

**User Story # 6b – Proper Profile Modal Sizing**

As an Instructor,

I need the profile.cgi modal to always open with all information on the page visible,

So that I do not have to resize or scroll the window to view the needed data.

I will know this is done when I click on a user's Username and the modal that opens to the profile.cgi is viewable without needing to resize or scroll the window.