

MICHIGAN STATE

U N I V E R S I T Y

Project Plan

Browser Sharing for Customer Support

The Capstone Experience

Team Amazon

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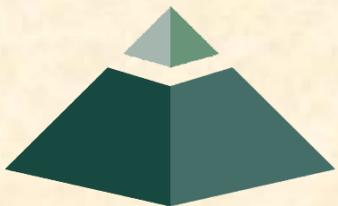
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Spring 2019



*From Students...
...to Professionals*

Functional Specifications

- Co-Browsing between customer and support representative with no installation required.
- The customer joins a queue for help with the press of a button.
- The representative can see exactly what the customer sees, and can chat to work through the problem.



Design Specifications

- Recorder
 - Capture DOM events that are happening.
 - Remove private customer credentials.
- Mediator
 - Send and receive customer interactions with the webpage.
 - Keep messages recorded from representative and customer.
- Replay
 - Display events onto representative's side.



Screen Mockup: Customer Assistance Button

The screenshot shows the Amazon product page for the Amazon 9W Official OEM USB Charger and Power Adapter. The page layout includes a navigation bar at the top with the Amazon logo, search bar, and account links. The main content area features a large product image of the black USB charger with the Amazon logo. To the right of the image, the product title and price are displayed, along with a 'Need Assistance?' button. Below the product image, there is a 'Frequently bought together' section with a total price of \$174.97 and a list of related items.

Amazon.com: Amazon 9W Official OEM USB Charger and Power Adapter for Fire Tablets, Kindle eReaders, and Echo Dot

Amazon

17 answered questions

Amazon's Choice for "fire tablet charger"

List Price: \$49.99
With Deal: **\$14.99 & FREE Shipping** Details
You Save: \$5.00 (25%)

In Stock.

Want it Saturday, Jan. 26? Order within 1 hr 14 mins and choose **Two-Day Shipping** at checkout. Details

Ships from and sold by Amazon.com. Gift-wrap available.

- Official Amazon 9W, 1.8A power adapter compatible with most devices with a micro-USB port, although charging times may vary (requires micro-USB cable, not included with charger)
- Charges your Kindle, Kindle Fire tablets, Fire tablets, Fire phone and Fire Keyboard in less than 5 hours
- Designed for use with the micro-USB cable included with Amazon devices and replacements sold in the Kindle Store
- Official Amazon 9W, 1.8A adapter charges Kindle Fire HD 8.9" in under 5 hours, Kindle Fire HD 7" in under 4 hours, and Kindle Fire in under 3 hours
- Official Amazon 9W power adapter for Echo Dot (1st and 2nd Generation), cable not included.
- Also the approved charger for Kindle Paperwhite and Kindle; charges Kindle Paperwhite in 4 hours or less and Kindle in 3 hours or less
- For use with the black micro USB cable included with Kindle Fire and Kindle Fire HD and with the white USB cable included with Kindle Paperwhite and Kindle

Roll over image to zoom in

Frequently bought together

Total price: **\$174.97**

Add all three to Cart

Add all three to List

- ✓ **This item:** Amazon 9W Official OEM USB Charger and Power Adapter for Fire Tablets, Kindle eReaders, and Echo Dot \$14.99
- ✓ Amazon 5ft USB to Micro-USB Cable (Designed for use with Fire tablets and Kindle E-readers) \$9.99
- ✓ Fire HD 10 Tablet with Alexa Hands-Free, 10.1" 1080p Full HD Display, 32 GB, Black - with Special... \$149.99

Customers who bought this item also bought

Screen Mockup: Co-Browsing Notification

Warning!

By clicking confirm you agree to co-browse with a qualified representative at Amazon.

They will be able see your screen and chat, but will you will stay in control of your computer.

[Click for terms and conditions](#)

Amazon 9W Official OEM USB Charger and Power Adapter for Fire Tablets, Kindle eReaders, and Echo Dot

Requires micro-USB cable, not included with charger)

under 5 hours

SS
Kindle Paperwhite and Kindle

Roll over image to zoom in

Frequently bought together

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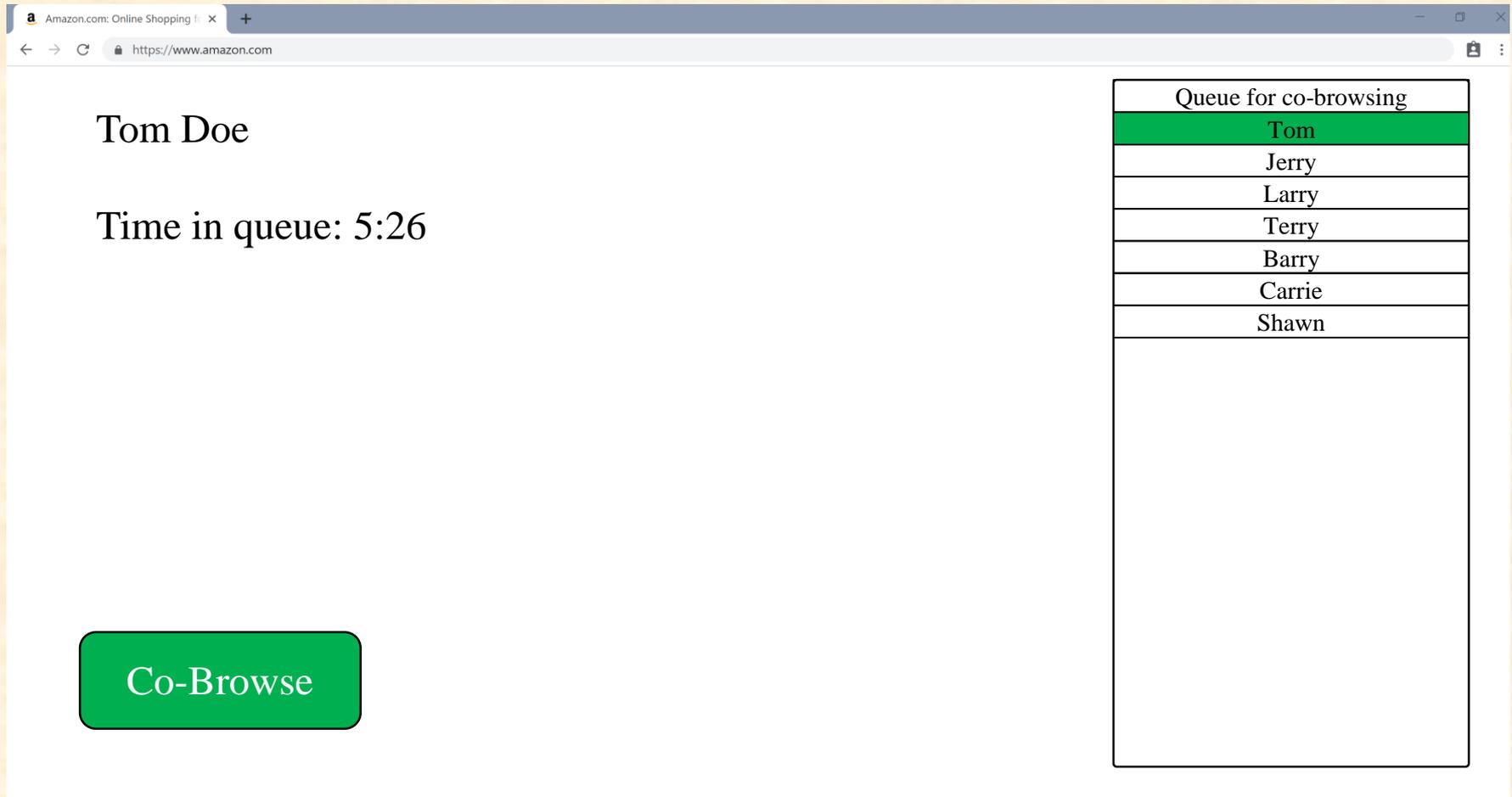
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Customers who bought this item also bought

Page 1 of 5



Screen Mockup: Support Queue



Screen Mockup: Chat (Customer)

The screenshot shows an Amazon product page for the "Amazon 9W Official OEM USB Charger and Power Adapter for Fire Tablets, Kindle eReaders, and Echo Dot". The product is a black, cylindrical power adapter with the Amazon logo on the side. The page displays a price of \$14.99 with a 25% discount from the original price of \$19.99. A chat window is overlaid on the bottom right of the page, showing a conversation with a customer named Colin Zhong. The chat window has a header with the customer's name and a close button. The main area of the chat window is empty, and there is a text input field at the bottom with the placeholder text "Type a message...".

Amazon 9W Official OEM USB Charger and Power Adapter for Fire Tablets, Kindle eReaders, and Echo Dot

By Amazon

17 answered questions

Amazon's Choice for "fire tablet charger"

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Roll over image to zoom in

Frequently bought together

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Customers who bought this item also bought

Page 1 of 5

Screen Mockup: Chat (Support)

The screenshot displays an Amazon product page for an Amazon 9W Official OEM USB Charger and Power Adapter. The product is shown in a black, cylindrical design with the Amazon logo. The page includes a price of \$14.99 (reduced from \$49.99) and a 'Need Assistance?' button. A chat window is overlaid on the bottom right, featuring a user profile for 'Rahul Yalamanchili' and a message input field with the text 'Type a message...'. The chat window also contains a pre-written message: 'Hi I am Colin with Amazon Support how can I assist you?'.

Amazon.com: Amazon 9W Official OEM USB Charger and Power Adapter for Fire Tablets, Kindle eReaders, and Echo Dot

by Amazon

Amazon's Choice for "fire tablet charger"

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In Stock.

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Type a message...

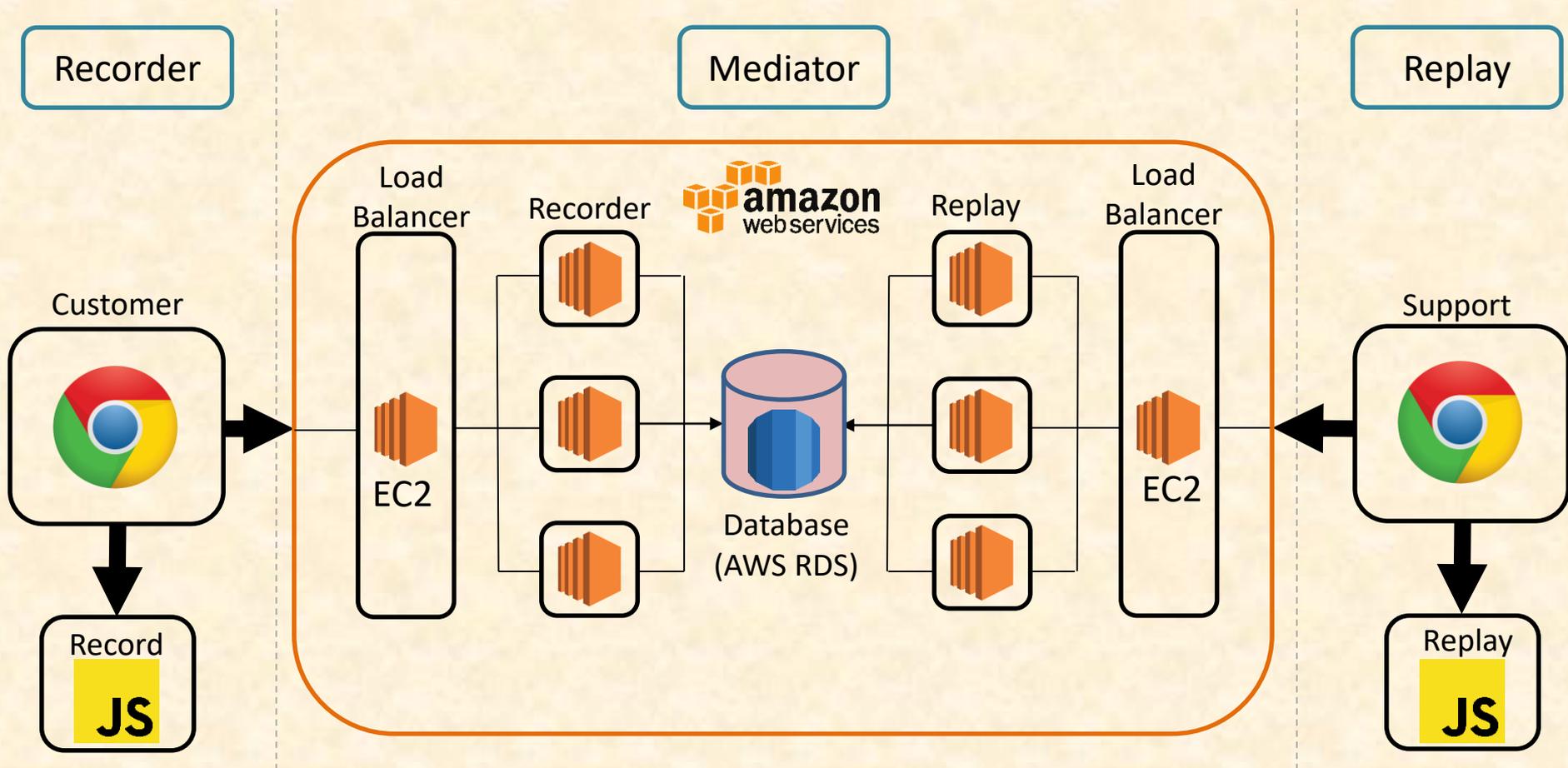


Technical Specifications

- Amazon Web Services (AWS) EC2 Server
 - Used to store session data into the AWS database.
- AWS RDS: SQL Database
 - Contains the co-browsing sessions' data.
- Fiddler - Web Debugging Tool
 - Used to inject our recording script into websites.
- Swagger - API Tool
 - Used to create the REST API for receiving and sending DOM event data.
- JavaScript
 - Record and replay of DOM events within browsers.



System Architecture



System Components

- Software Platforms / Technologies
 - AWS Elastic Compute Server
 - AWS Elastic Load Balancer
 - AWS API Gateway
 - AWS RDS: SQL Database
 - JavaScript
 - Browser APIs (e.g. W3C DOM API)



Risks

- Fidelity of capturing DOM events
 - All events need to be captured for playback accurately.
 - Research and find out what, if any, events need special cases.
- Cross browser support
 - DOM events could be different for different browsers.
 - Translate DOM events into an object that is universal.
- Amount of data to replay
 - We have to capture and send the web page for display.
 - Sending a snapshot of the web page at first and only the changes that occur after.
- Fidelity of DOM replay
 - We must replay events exactly as they happened for the user.
 - Research the accuracy of replay and make positions relative.



Questions?

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