MICHIGAN STATE UNIVERSITY

Project Plan Presentation
Amazon Shop Smart: Web Extension for Shopping

The Capstone Experience

Team Amazon

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From Students…
…to Professionals

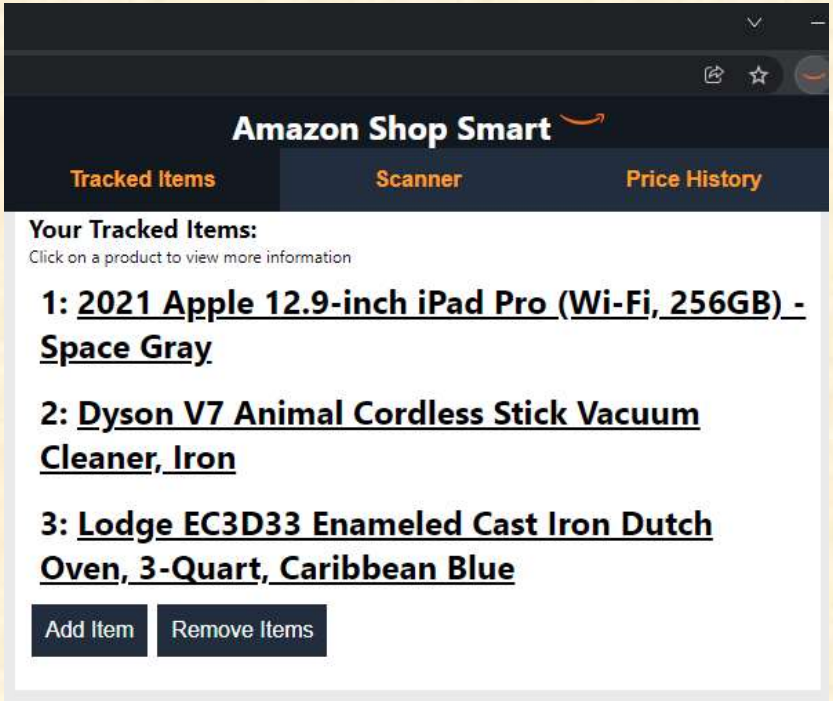
Functional Specifications

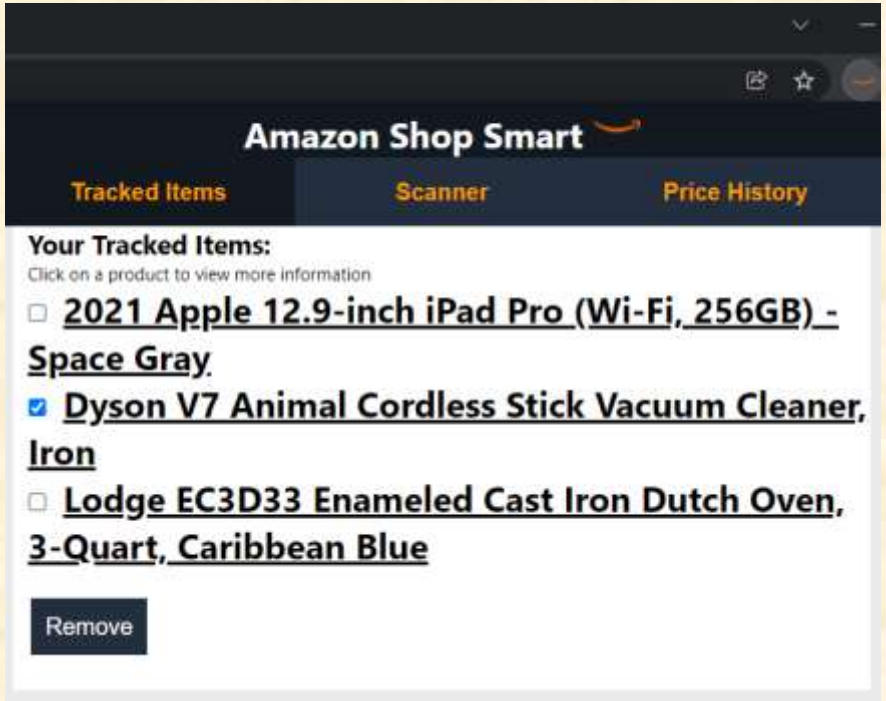
- Find related items on Amazon.com when shopping on other sites and compare price and shipping costs.
- Allows viewing of product price information.
- Sends user notification via email when a product price has changed.
- Inform member about the suggested purchasing time (e.g. the best savings occur during Christmas).
- Empower members to make best-informed purchasing decision.

Design Specifications

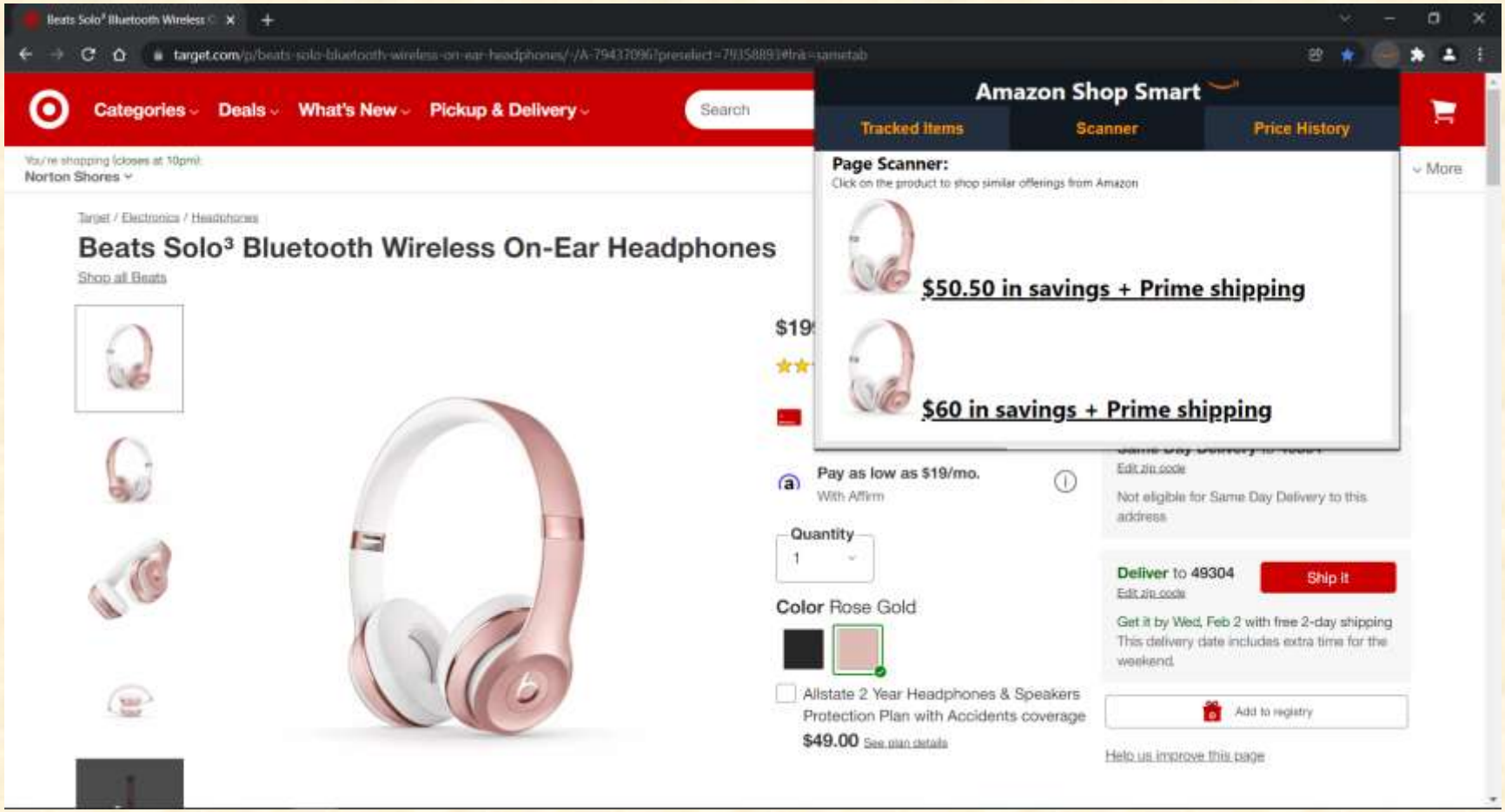
- Pop-up extension
- List of tracked Amazon products
- List of products on Amazon while browsing other retailers
- Graph of product price history
- Automated email notification for price updates

Screen Mockup: Track Items

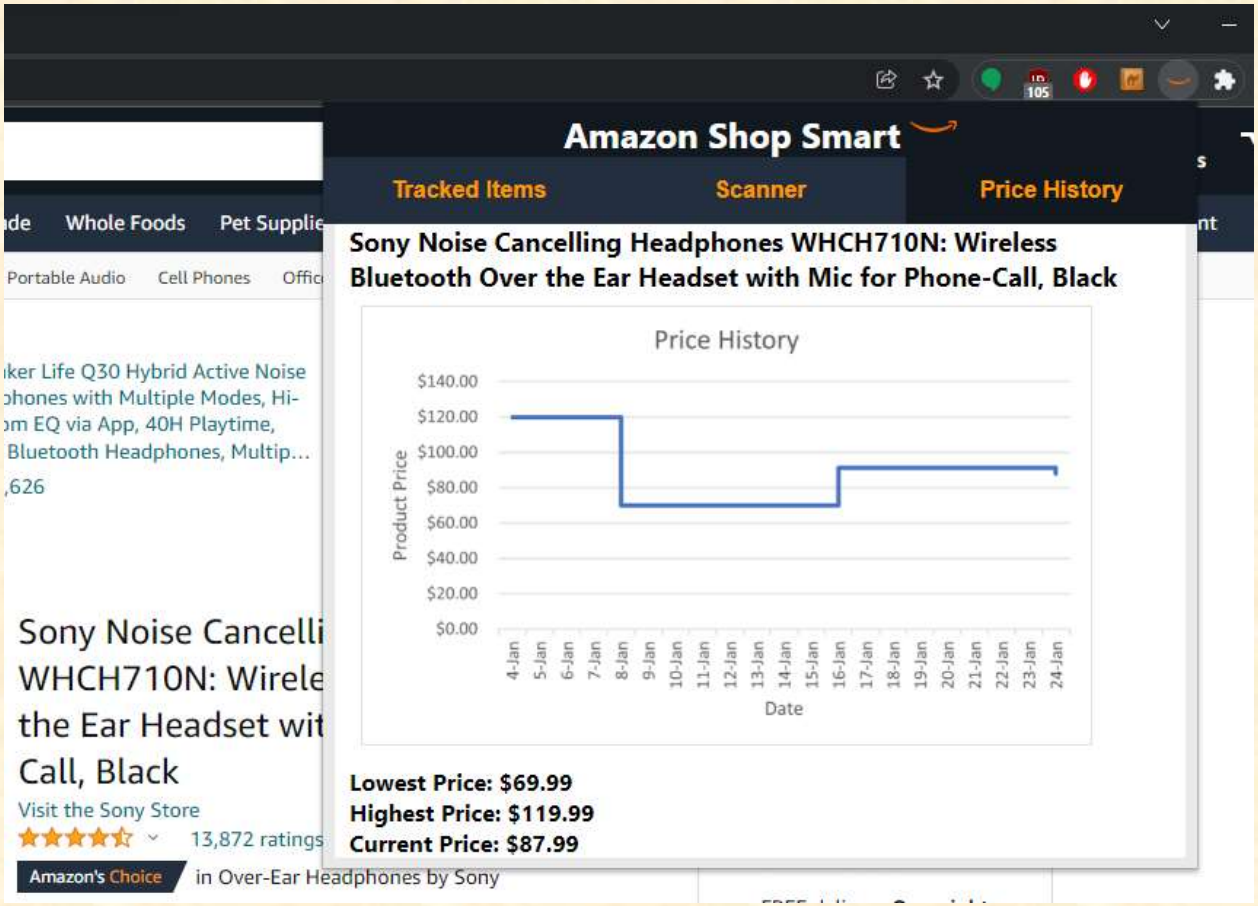




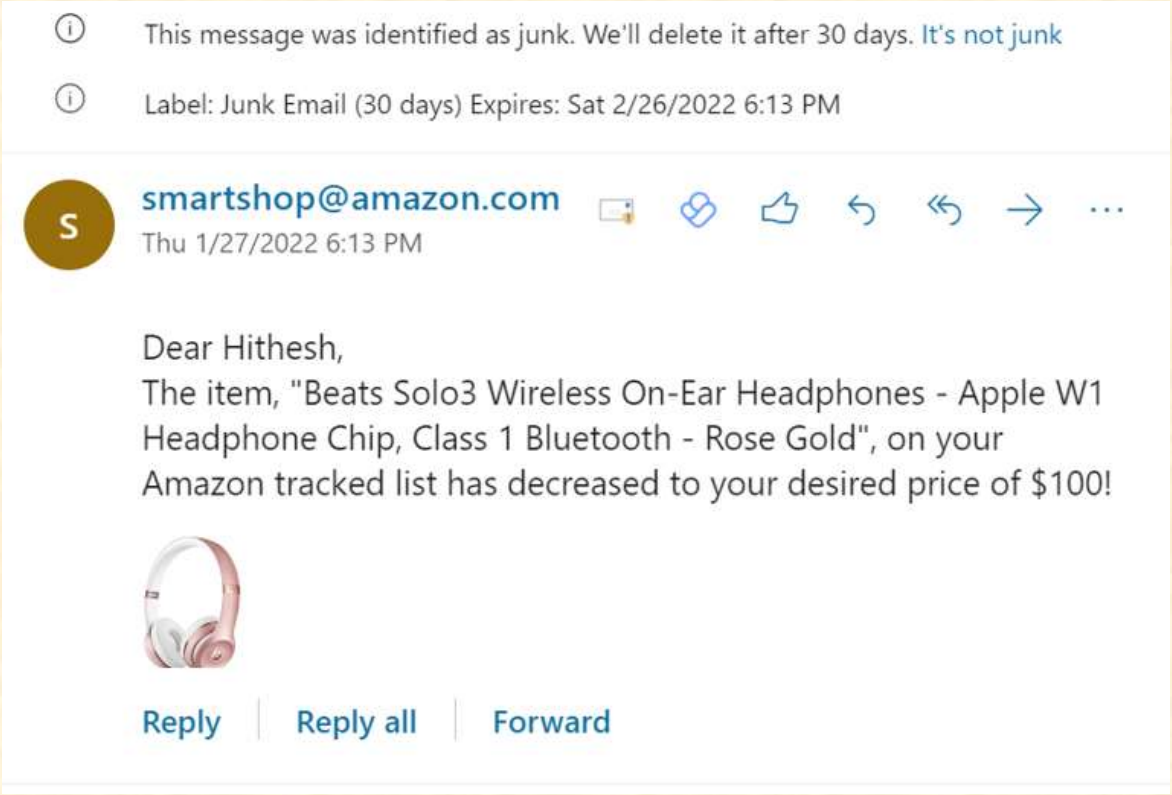
Screen Mockup: Scanner



Screen Mockup: Price History



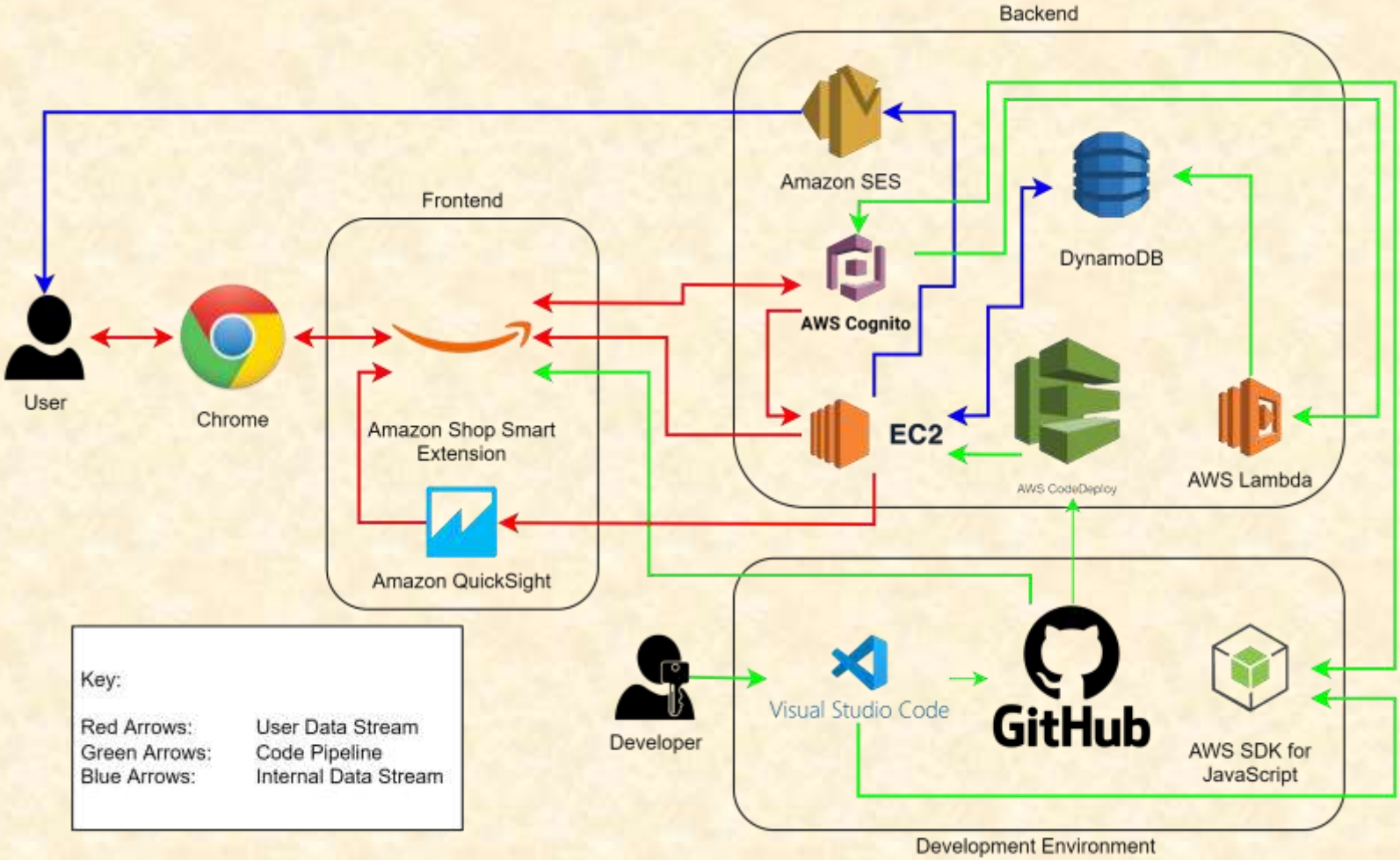
Screen Mockup: Email Notification



Technical Specifications

- Browser extension hosted on Chrome's extension store
- Backend:
  - Processing: Elastic Compute Cloud (EC2)
  - Storage: DynamoDB
  - AWS SDK for JavaScript and RESTful APIs allow frontend interactions with backend services.
- Frontend (UX):
  - Extension interface written with HTML & CSS
  - Data visualization: QuickSight
  - JavaScript listeners for interactivity (e.g. tabs)

System Architecture



System Components

- Software Platforms / Technologies
  - Visual Studio Code
  - Amazon Web Services
    - SDK for JavaScript – simplifies calls to AWS services using JS APIs
    - EC2(Elastic Compound Cloud) - manage storage, launch virtual servers
    - CodeDeploy – can automate code deployments to any instance
    - Cognito – user authentication
    - SES – email notification
    - Lambda – Serverless platform/Runs code in response to events
    - DynamoDB – NoSQL Database
    - QuickSight – Data Visualization platform
  - Chrome Developer

Risks

- Reception of Data
  - Web scrapping for information on different retailers is not cost effective.
  - Use AWS ML tools to limit the scope of each page to just the text. This will help to minimize the amount of data to go through.
- Existing Data
  - No existing database for price history on AWS. No APIs to access information about items. This means we will not have a full database of prices which may cause issues when trying to find trends within the data.
  - Create our own database to store and retrieve information correctly.
- Quantity of Retailers
  - Information may be stored differently across multiple websites. This can begin to cause issues if using the same scrapping approach for different retailers.
  - We will have a few retailer sites where the extension will work. Starting with Target and Best Buy. We will add more as we see fit.

Questions?