FINAL PROJECT REPORT

Spring2018, CS5551: Advanced Software Engineering, Department of Computer Science Electrical Engineering, University of Missouri-Kansas City.

PROJECT TITLE: SOCIAL ADVERTISEMENT

PROJECT MEMBERS:

1. MD Usman Gani Syed (3-1)
2. Vuradi Madhukar Reddy (3-1)
3. Chaitanya Sailesh Tondepu(3-2)
4. Kunisetty Sai Krishna Teja(3-2)

VIDEO URL: https://www.youtube.com/watch?v=mdm-RyJXQ1U&feature=youtu.be

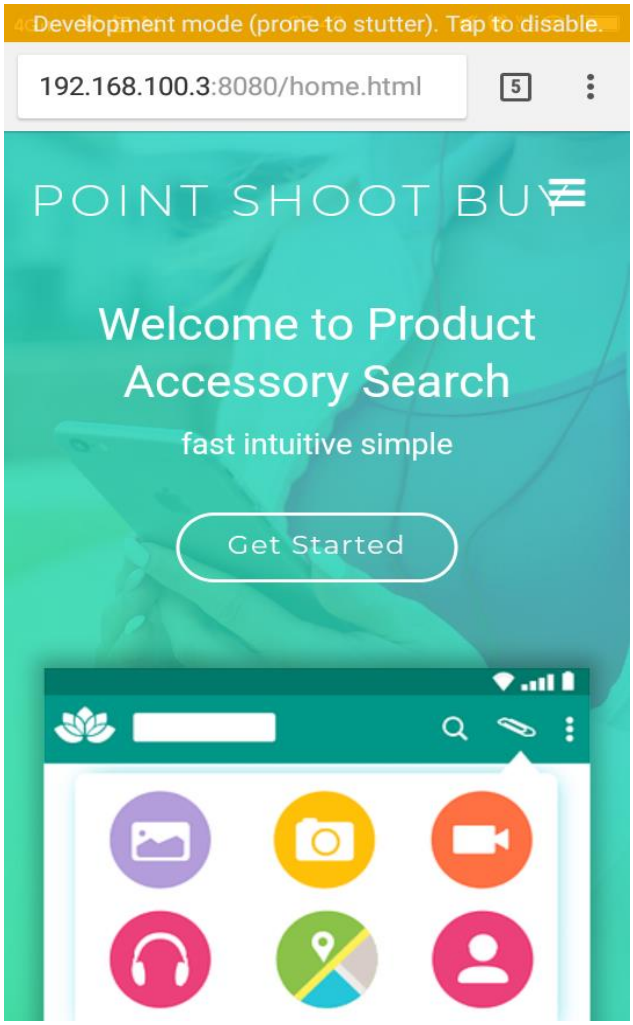
GITHUB URL: https://github.com/gani938/ASE-PROJECT

ZENHUB URL: https://app.zenhub.com/workspace/o/gani938/ase-project/boards?repos=119203730

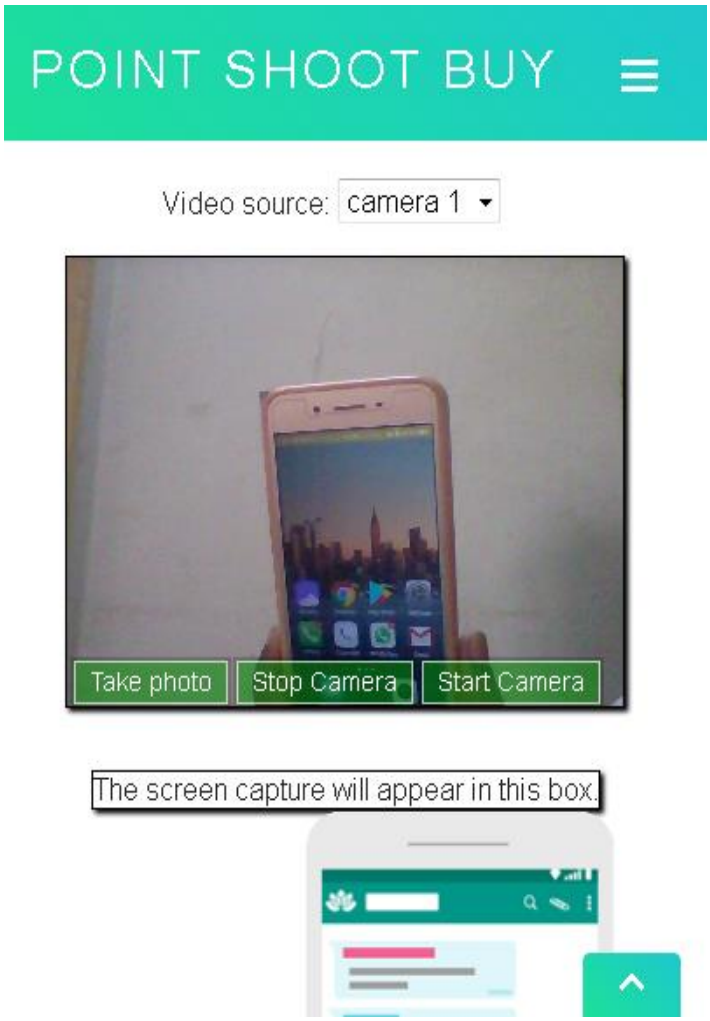
PROJECT DEPLOYMENT:

1. Download our project from the github
2. Go to the IBM AI vision website (https://ny1.ptopenlab.com/AIVision/index.html#!/datasets) and activate the object detection api.
3. Install nodeJs and Open cmd line and execute following commands in the project directory

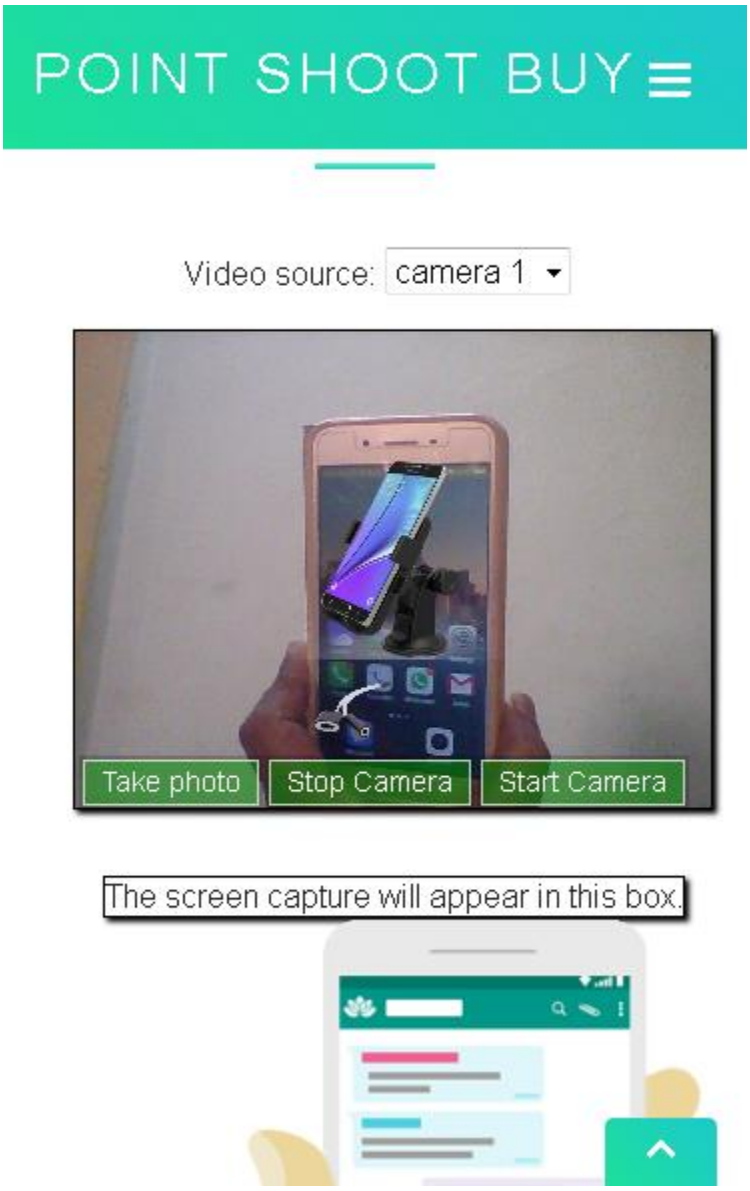
   Npm install
   npm install -g local-web-server
   ws --http2
4. On console, it will show the host and port of the application it was hosted. Now use that link and open the http link on the browser of your mobile/laptop.
5. Now in home page, the camera button will be active and will detecting objects in its vicinity.
6. If it detects any of the objects like laptop or phone, it will show its related accessories.
7. On clicking the accessories, it will navigate to amazon page for purchase.
8. Following screenshots will help in understanding the step by step process.


Development mode (prone to stutter). Tap to disable.
192.168.100.3:8080/home.html
5
POINT SHOOT BUY
Welcome to Product Accessory Search
fast intuitive simple
Get Started

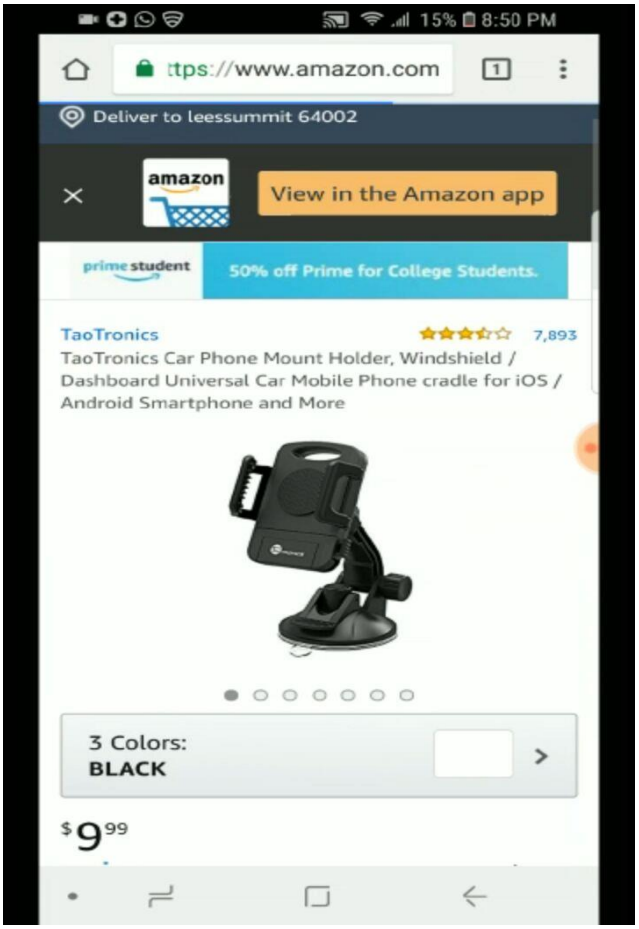
1. Scanning phone



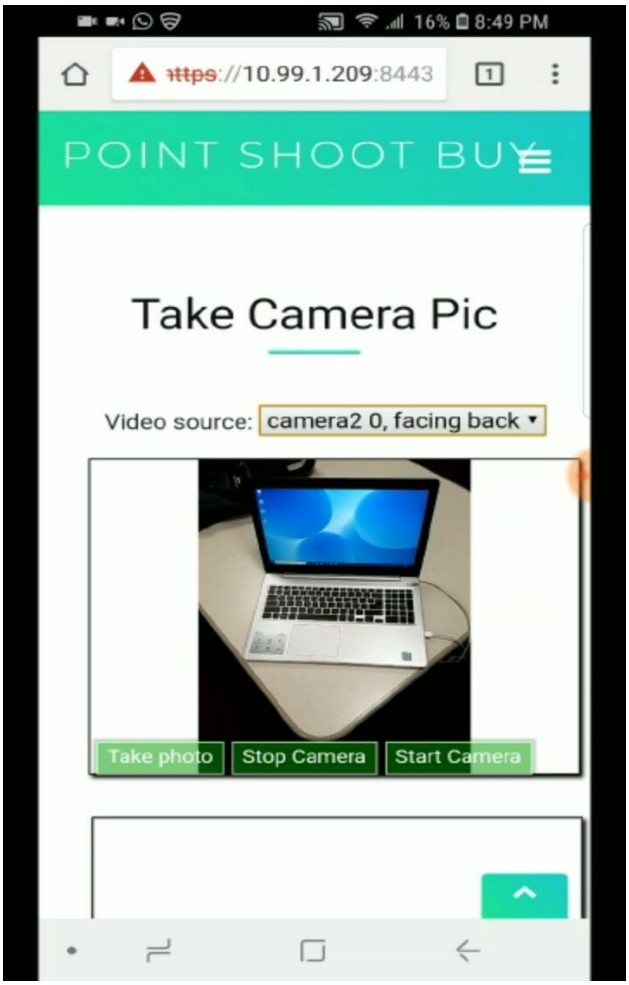
2. Detected that its phone and displayed its related accessories like usb and phone handler.

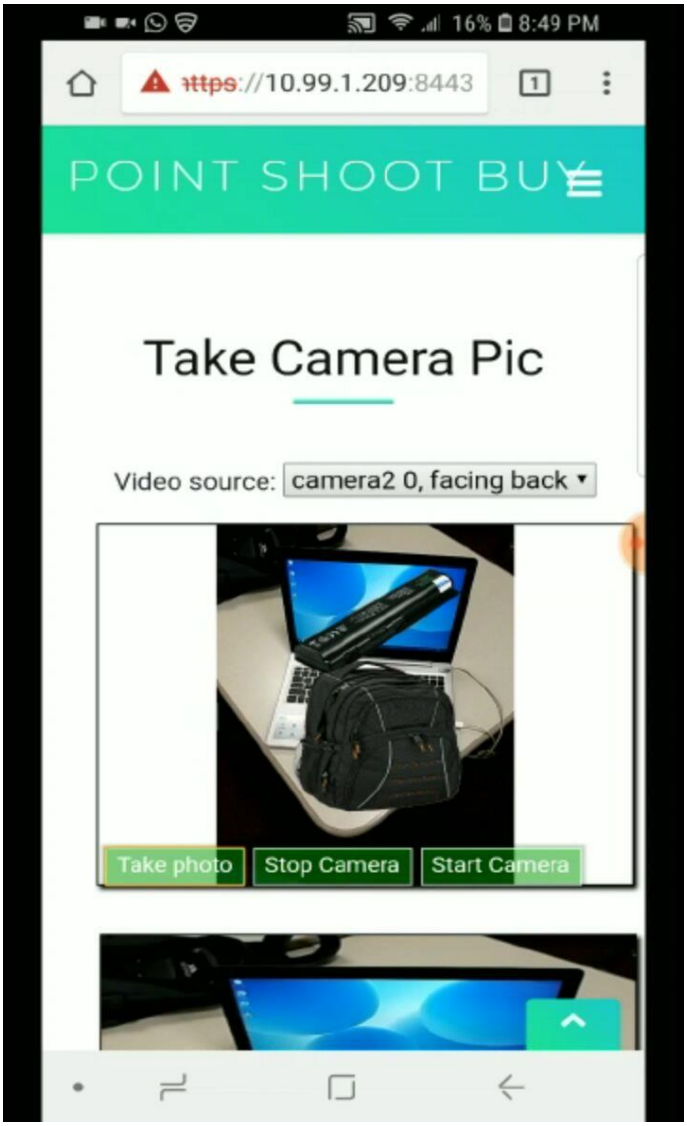


3. If customer like any of the accessories, the he/she can click on the particular accessory and it will redirect to amazon page to buy. Lets say user clicked on those accessories. The images after redirected to amazon page are



Similarly if we scan the laptop, the the flow is as follows….


16% 8:49 PM
https://10.99.1.209:8443
POINT SHOOT BUY
Take Camera Pic
Video source: camera2 0, facing back
Take photo
Stop Camera
Start Camera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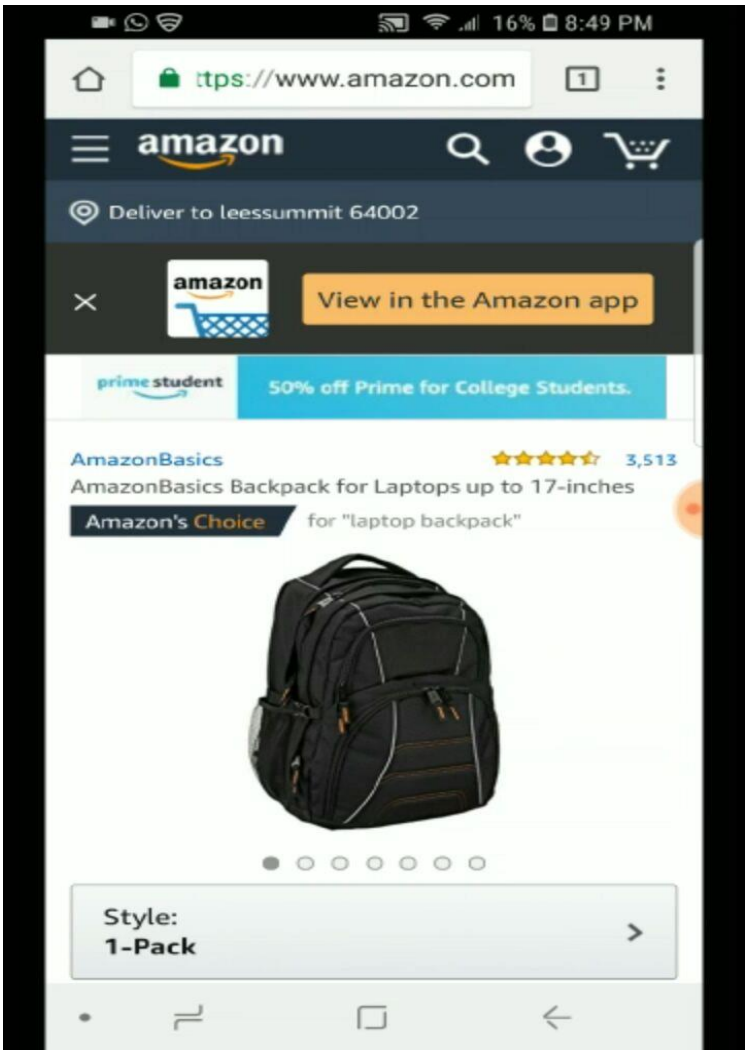
POINT SHOOT BUY
Take Camera Pic
Video source: camera2 0, facing back
Take photo
Stop Camera
Start Camera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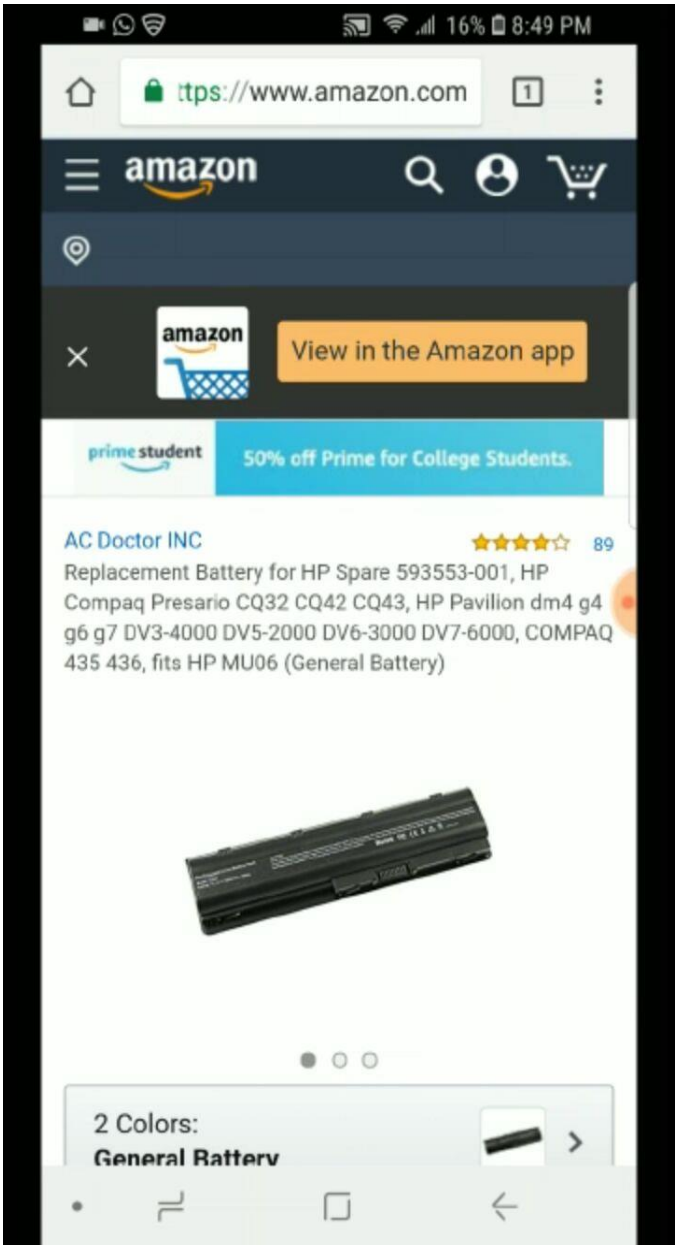
50% off Prime for College Students.
AmazonBasics
3,513
AmazonBasics Backpack for Laptops up to 17-inches
Amazon's Choice
for "laptop backpack"
Style:
1-Pack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ttps://www.amazon.com
amazon
amazon
View in the Amazon app
prime student
50% off Prime for College Students.
AC Doctor INC
89
Replacement Battery for HP Spare 593553-001, HP Compaq Presario CQ32 CQ42 CQ43, HP Pavilion dm4 g4 g6 g7 DV3-4000 DV5-2000 DV6-3000 DV7-6000, COMPAQ 435 436, fits HP MU06 (General Battery)
2 Colors:
General Battery

Error Detection and Handling:

We have set node debugger tool. Using this we can debug.

Use this link for various option to use while debugging

https://nodejs.org/api/debugger.html

Known Bugs and Deficiencies:

For now we have fixed all bugs and no known bugs. But limitations are we have implemented the object detection to detect only two paradigms laptop and phone. The more you train to the api, the more objects can be detected.

PROJECT MANAGEMENT:

Individual members contribution

1.MD Usman Gani Syed -25 points

2.Vuradi Madhukar Reddy -25 points

3.Chaitanya sailesh Tondepu – 25 points

4.Sai Krishna Teja kunisetty – 25 points

1.MD USMAN GANI SYED (LabId: 3-1) - 25% of work with 25 hours

He did the following tasks of iteration-3

a. Explore and Find best suitable Technologies.
b. Created a sample AR object with 3D cube.
c. Activated Links on 3D objects for phone.
d. Integrate and test functionalities related to both phone and laptop.
e. Explore Webservices for recomended objects.
f. Register API upload images and label
g. Gathered Marker images to represent laptop and phone.

2. MADHUKAR REDDY VURADI (LabId: 3-1) - 25% of work with 25

a. Developed a 3D object for phone and laptop
b. Prepared documentation for release.
c. Activated links on 3D objects for Laptop
d. Create account to use webservices.
e. Document the project setup instructions.
f. Gathered images and preprocessed.
g. Trained model and tested it.

3.CHAITANYA SAILESH TONDEPU (LabId: 3-2) - 25% of work with 25

a. task Integrate 3d objects phone and laptop by replacing with cube.

b. Display recomended items for the accessories of phone.

c. Host project on sever and test from android phone.

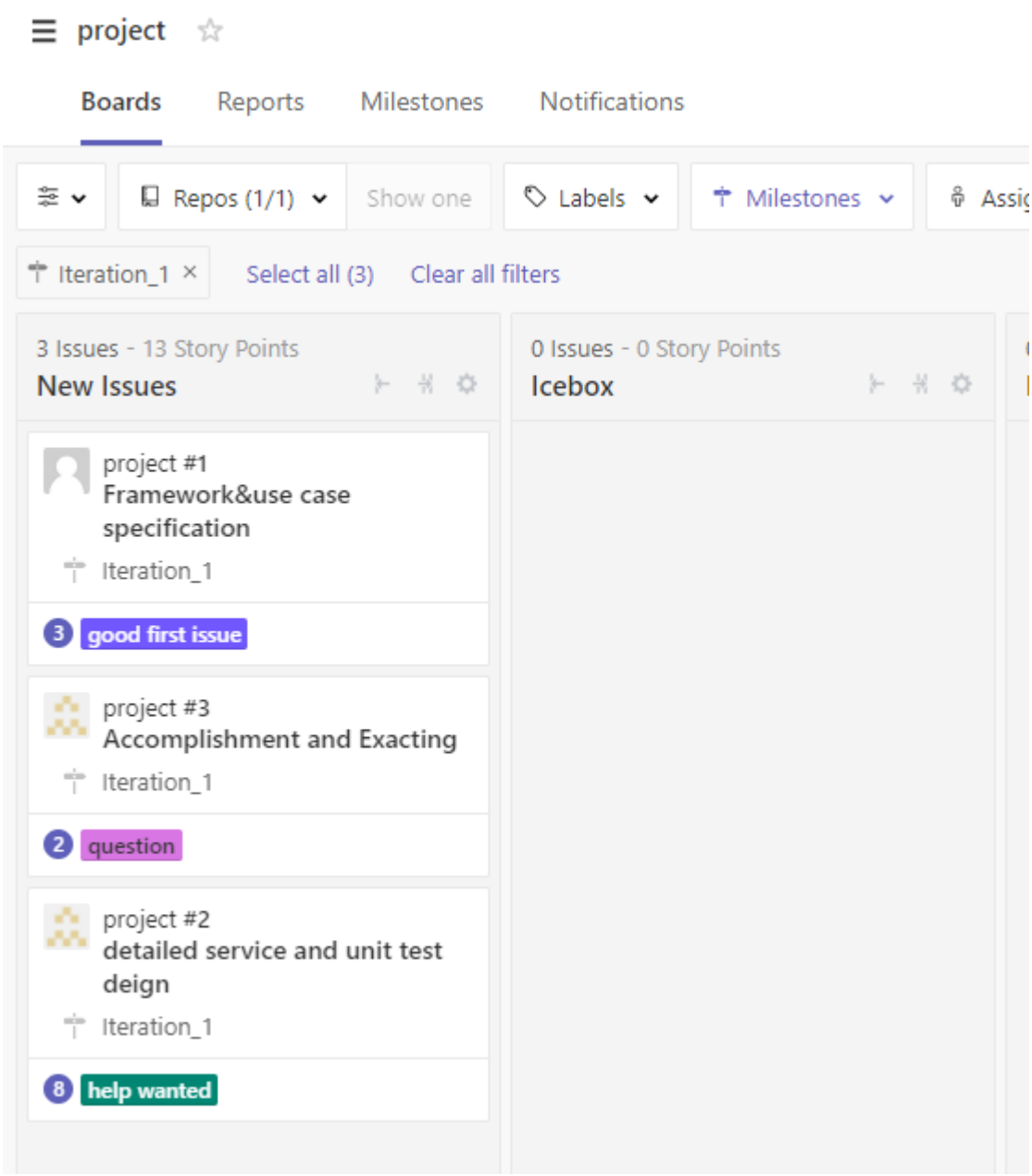
d. Read accessories cost and display.

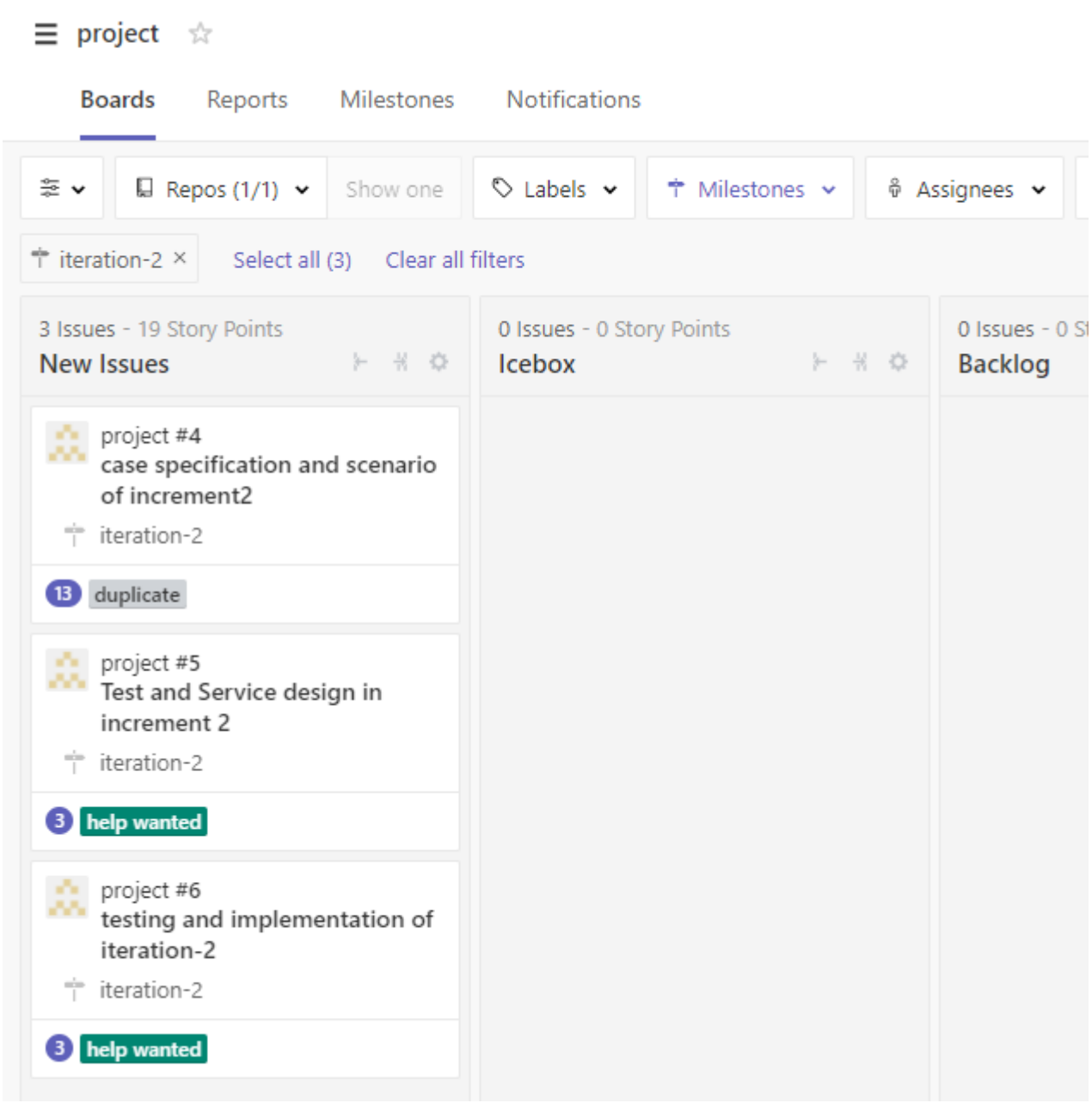
e. Proof of concept AR.JS

f. Node Js website Structure

4. SAI KRISHNA TEJA KUNISETTY (LabId: 3-2) - 25% of work

a. Explore IBM Object detection machine learning API's
b. Wiki documentation
c. Display recomended items for the accessories of Laptop.
d. Host project on sever and test from android phone.
e. Document the entire flow and missing gaps
f. Integrate vision API
g. Integrate AR. JS


project
Boards
Reports
Milestones
Notifications
Repos (1/1)
Show one
Labels
Milestones
Iteration_1
Select all (3)
Clear all filters
3 Issues - 13 Story Points
New Issues
0 Issues - 0 Story Points
Icebox
project #1
Framework&use case specification
Iteration_1
3 good first issue
project #3
Accomplishment and Exacting
Iteration_1
2 question
project #2
detailed service and unit test deign
Iteration_1
8 help wanted


project
Boards
Reports
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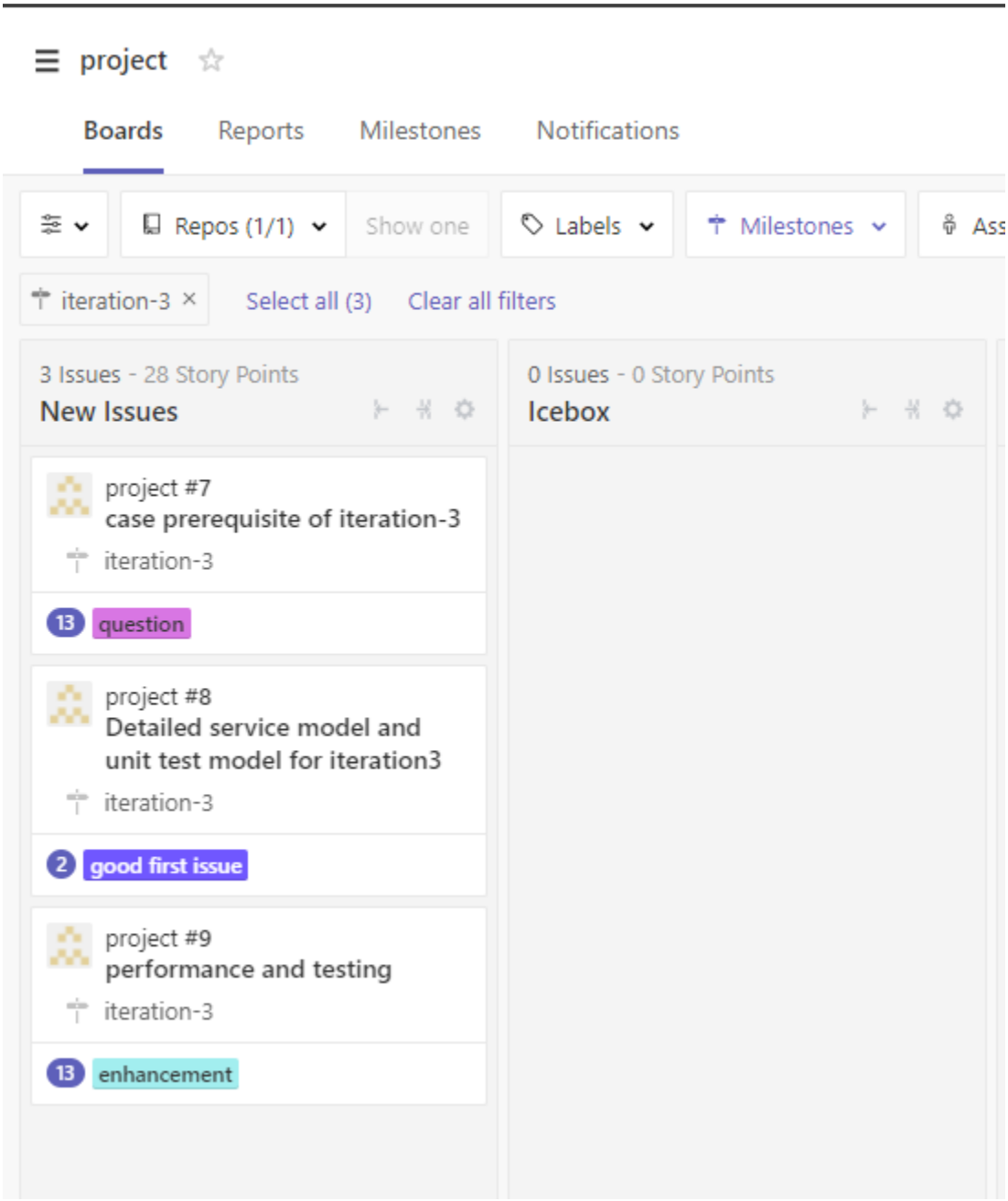
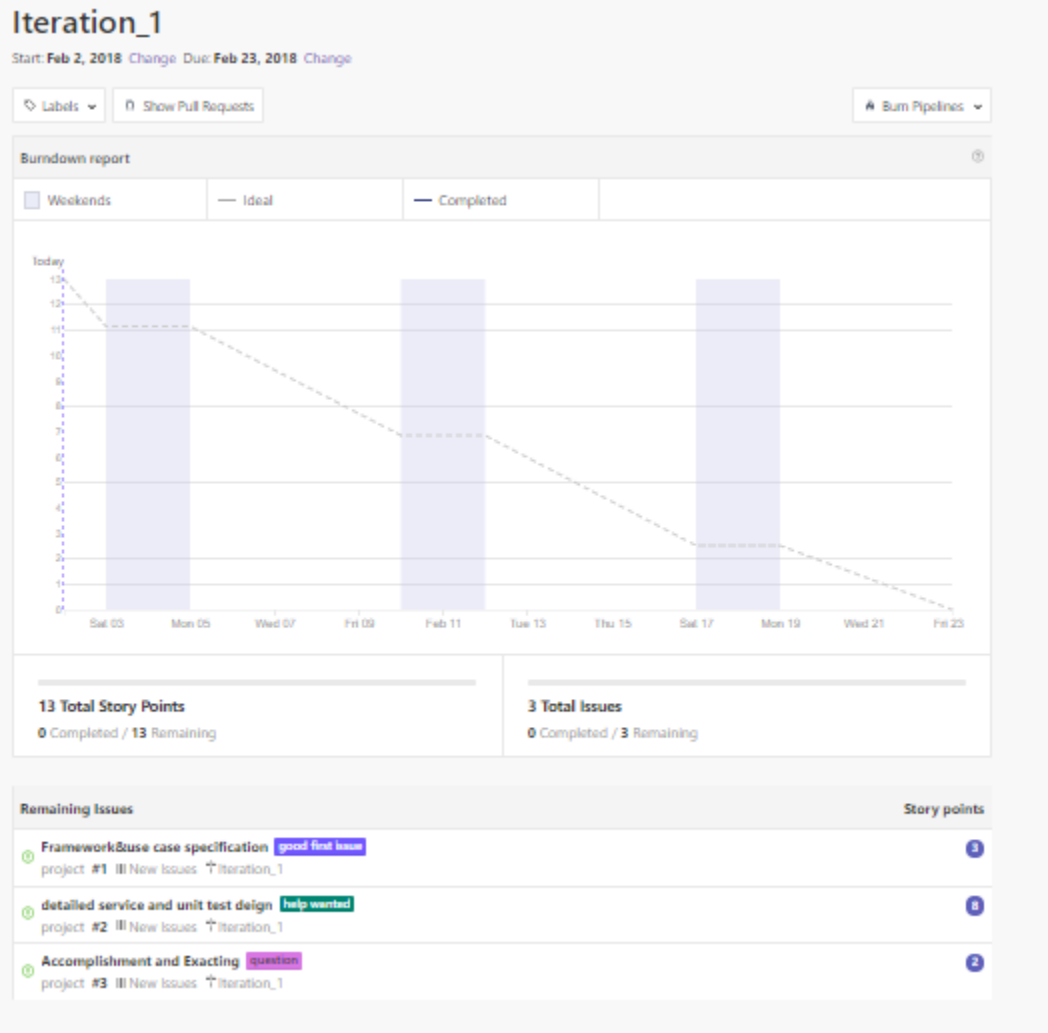
Repos (1/1)
Show one
Labels
Milestones
Assignees
iteration-2
Select all (3)
Clear all filters
3 Issues - 19 Story Points
New Issues
project #4
case specification and scenario of increment2
iteration-2
13 duplicate
project #5
Test and Service design in increment 2
iteration-2
3 help wanted
project #6
testing and implementation of iteration-2
iteration-2
3 help wanted
0 Issues - 0 Story Points
Icebox
0 Issues - 0 S
Backlog

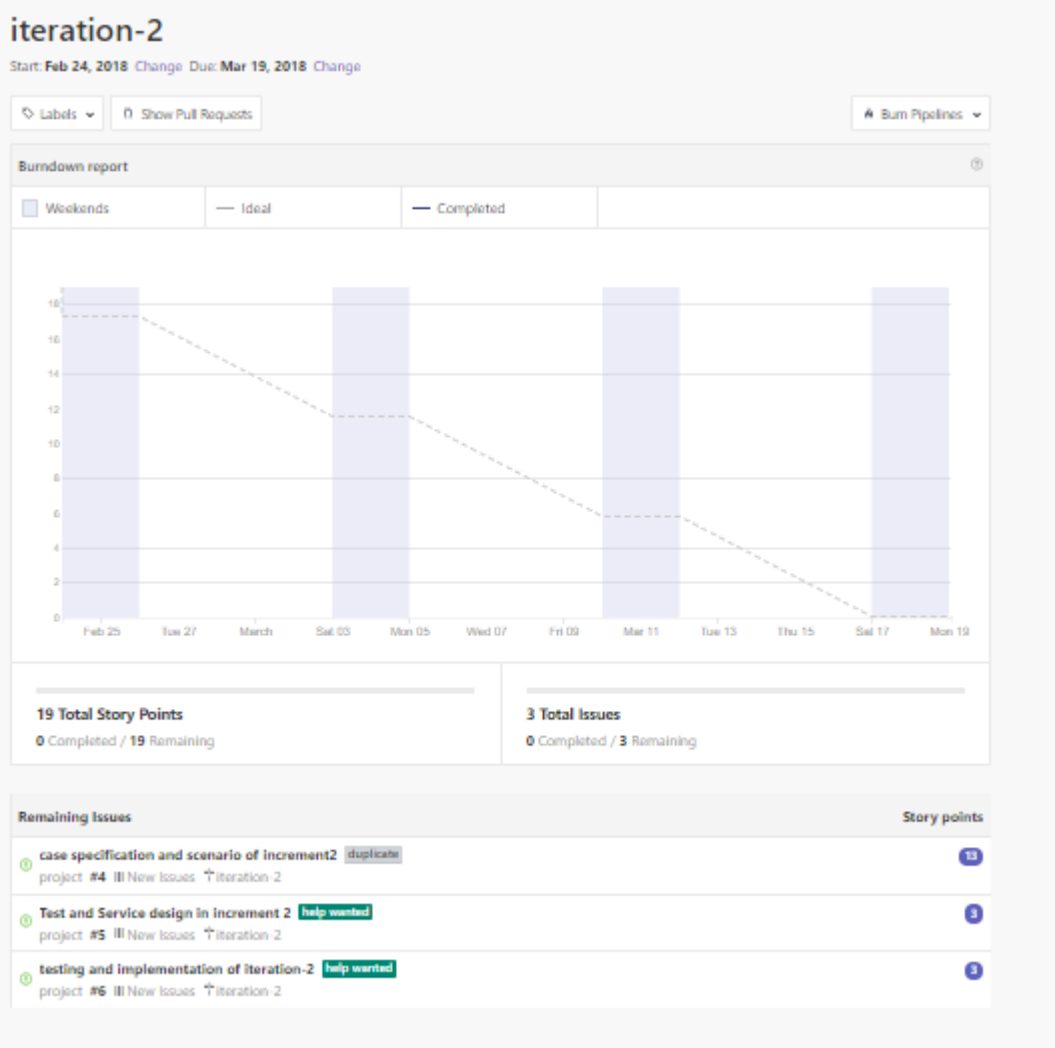
Iteration3


project
Boards
Reports
Milestones
Notifications
Repos (1/1)
Show one
Labels
Milestones
iteration-3
Select all (3)
Clear all filters
3 Issues - 28 Story Points
New Issues
project #7
case prerequisite of iteration-3
iteration-3
13 question
project #8
Detailed service model and unit test model for iteration3
iteration-3
2 good first issue
project #9
performance and testing
iteration-3
13 enhancement
0 Issues - 0 Story Points
Icebox

Burnout1


Iteration_1
Start: Feb 2, 2018 Change Due: Feb 23, 2018 Change
Labels
Show Pull Requests
Burn Pipelines
Burndown report
Weekends
Ideal
Completed
today
Sat 03
Mon 05
Wed 07
Fri 09
Feb 11
Tue 13
Thu 15
Sat 17
Mon 19
Wed 21
Fri 23
13 Total Story Points
0 Completed / 13 Remaining
3 Total Issues
0 Completed / 3 Remaining
Remaining Issues
Story points
Framework&use case specification good first issue
project #1 New Issues Iteration_1
3
detailed service and unit test deign help wanted
project #2 New Issues Iteration_1
8
Accomplishment and Exacting question
project #3 New Issues Iteration_1
2

Burnout2


iteration-2
Start: Feb 24, 2018 Change Due: Mar 19, 2018 Change
Labels
Show Pull Requests
Burn Pipelines
Burndown report
Weekends
Ideal
Completed
Feb 25
Tue 27
March
Sat 03
Mon 05
Wed 07
Fri 09
Mar 11
Tue 13
Thu 15
Sat 17
Mon 19
19 Total Story Points
0 Completed / 19 Remaining
3 Total Issues
0 Completed / 3 Remaining
Remaining Issues
Story points
case specification and scenario of increment2 duplicate
project #4 New Issues iteration 2
13
Test and Service design in increment 2 help wanted
project #5 New Issues iteration 2
3
testing and implementation of iteration-2 help wanted
project #6 New Issues iteration 2
3

Burnout3

iteration-3

Start: **Mar 20, 2018** Change Due: **Apr 23, 2018** Change

Labels | Show Pull Requests | Burn Pipelines

Burndown report

28 Total Story Points

0 Completed / **28** Remaining

3 Total Issues

0 Completed / **3** Remaining

Remaining Issues	Story points
case prerequisite of iteration-3 question project **#7** New Issues iteration-3	13
Detailed service model and unit test model for iteration3 good first issue project **#8** New Issues iteration-3	2
performance and testing enhancement project **#9** New Issues iteration-3	13

Our Project Demo Slides:

Acknowledgement

The work has been completed under the guidance of Dr. Yugi Lee and TAs (Rohith Nagulapati, Sidrah Junaid, Nageswara Nandigam) in CS5551 Advanced Software Engineering, University of Missouri - Kansas City), Spring 2018.

WWW of our Project

Who am I?

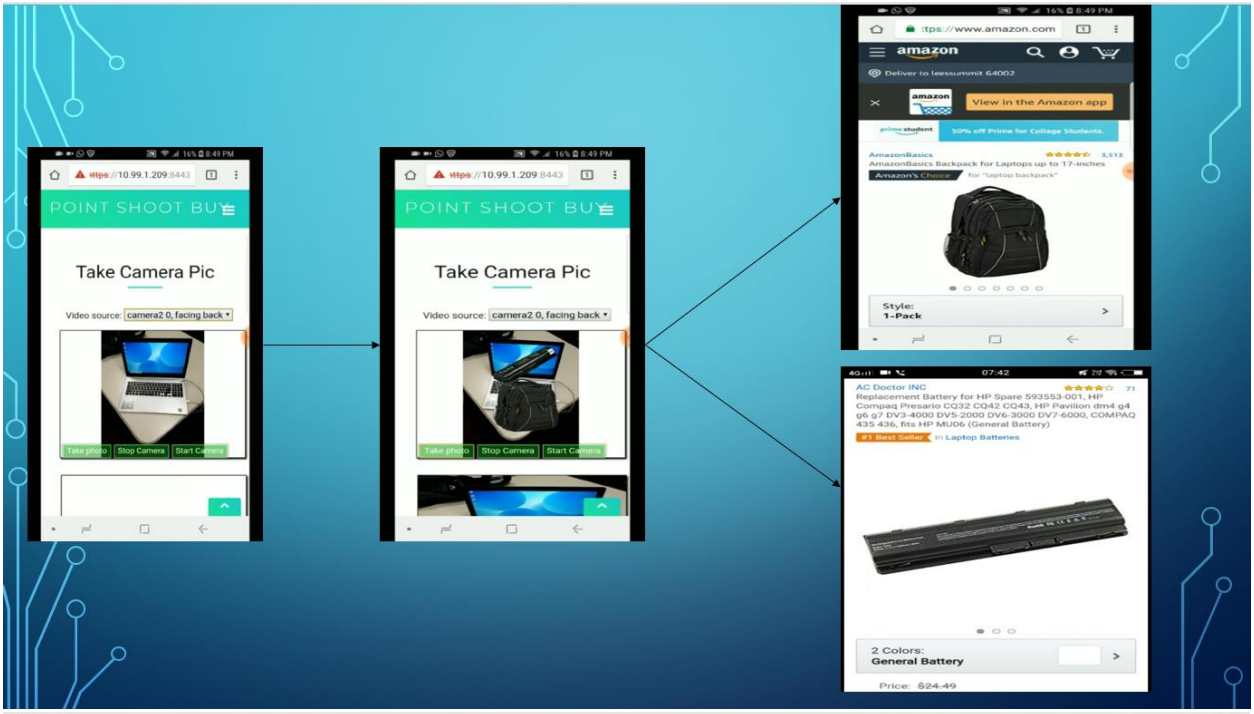
- I am a simple web application built on Augumented Reality

What can I do?

- I can scan the surrounding areas
- Detect objects
- Give suggestions on what to buy based on objects detected

Why am I?

- I will ease your process of online purchase


https://10.99.1.209:8443
POINT SHOOT BUY
Take Camera Pic
Video source: camera2 0, facing back
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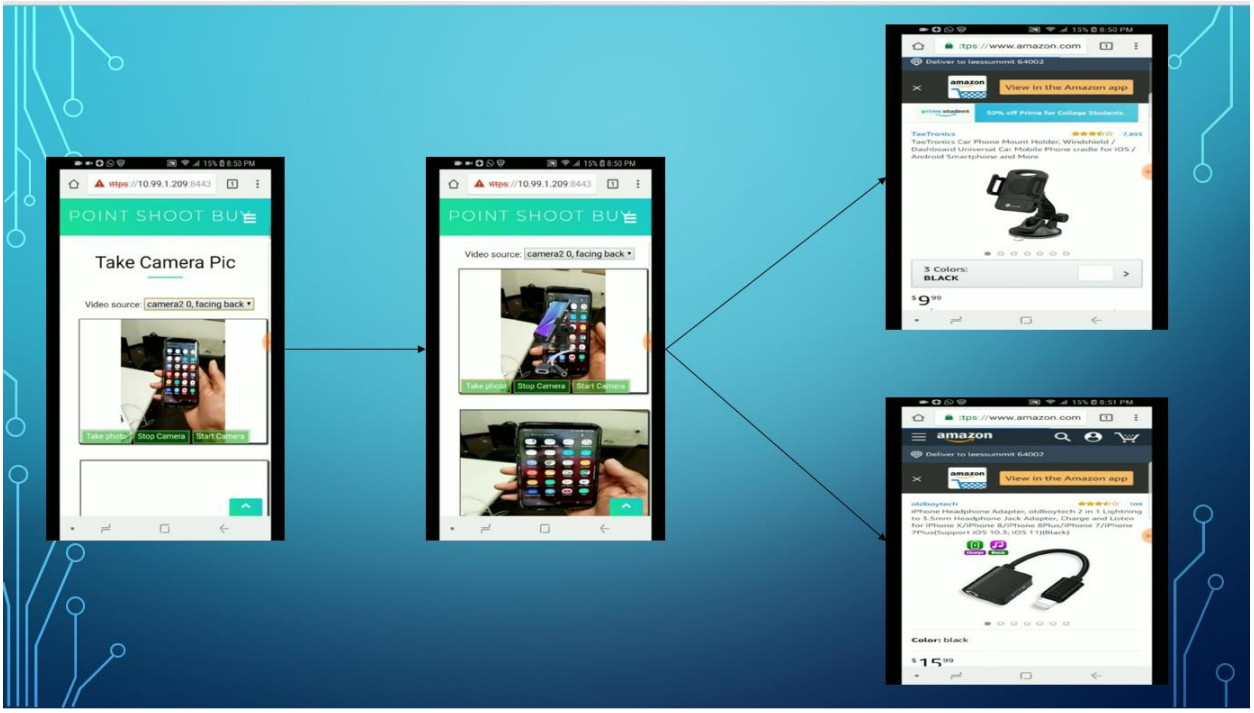
50% off Prime for College Students.
AmazonBasics
AmazonBasics Backpack for Laptops up to 17-inches
Amazon's Choice
Style:
1-Pack
AC Doctor INC
Replacement Battery for HP Spare 593553-001, HP Compaq Presario CQ32 CQ42 CQ43, HP Pavilion dm4 g4 g6 g7 DV3-4000 DV5-2000 DV6-3000 DV7-6000, COMPAQ 435 436, fits HP MU06 (General Battery)
#1 Best Seller in Laptop Batteries
2 Colors:
General Battery
Price: $24.49


https://10.99.1.209:8443
POINT SHOOT BUY
Take Camera Pic
Video source: camera2 0, facing back
Take photo
Stop Camera
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https://www.amazon.com
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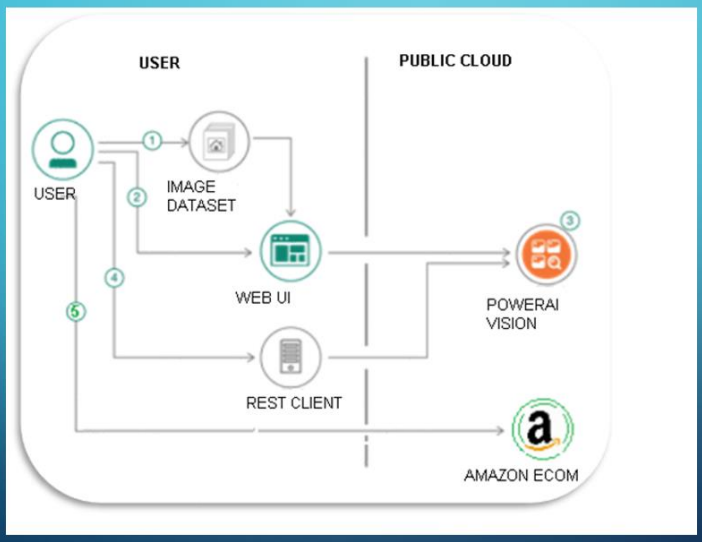
Deliver to leessummit 64002
View in the Amazon app
50% off Prime for College Students.
TaoTronics
TaoTronics Car Phone Mount Holder, Windshield / Dashboard Universal Car Mobile Phone cradle for iOS / Android Smartphone and More
3 Colors:
BLACK
$9.99
oldboytech
iPhone Headphone Adapter, oldboytech 2 in 1 Lightning to 3.5mm Headphone Jack Adapter, Charge and Listen for iPhone X/iPhone 8/iPhone 8Plus/iPhone 7/iPhone 7Plus(Support iOS 10.3, iOS 11)(Black)
Color: black
$15.99

Architecture



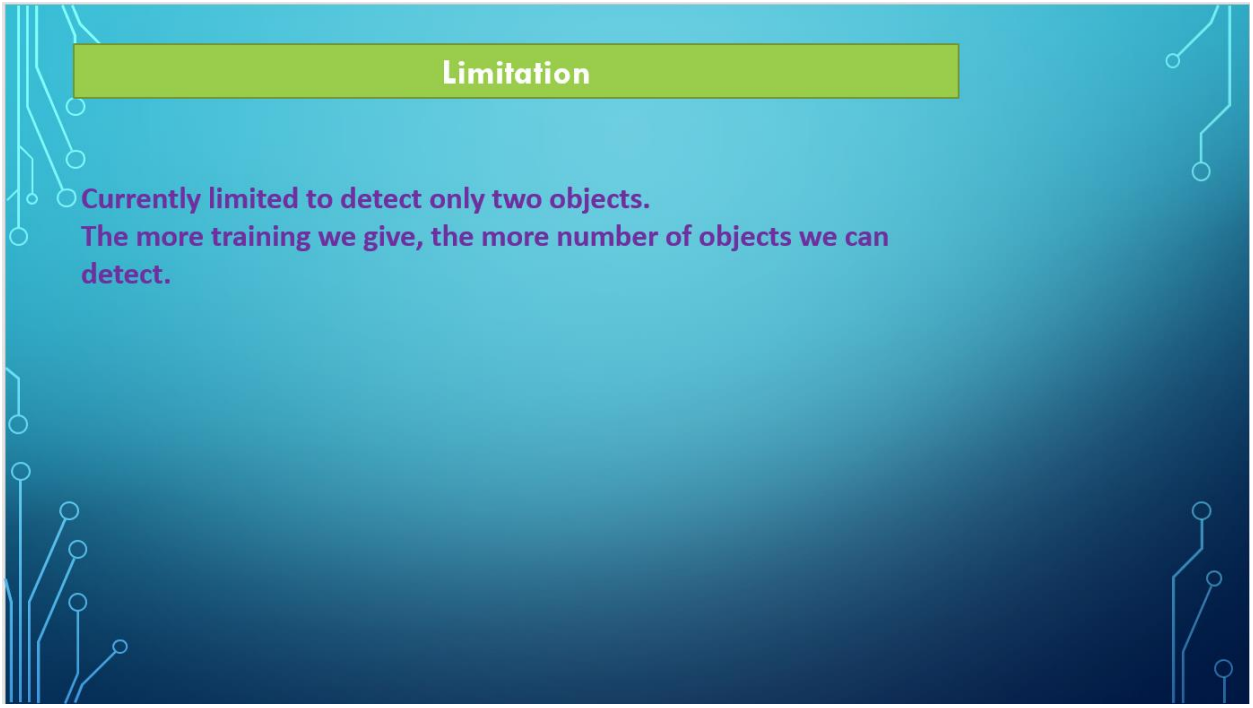
Technologies Used

HTML

CSS

JS, NODEJS

IBM CLOUD VISION OBJECT DETECTION



Progress of our Project Proposal Plans and Objectives:

Advertisement in social media is a trending platform and its evolving continuously. We as a team want to be part of that revolution

Our First Objective

Receive large amount of users search data from twitter/fb/amazon and filter for the user's interests. If possible use webservises provided by third party to get user interests. Using this information, we will post an add on user facebook profile according to user's interest. If user search item is laptop, then we will post a laptop add on his profile. Now there is high probability that user might click the add as it is of his/her particular interest. It’s an AR add. Let’s say user is interested in buying stydy table, then the add will show how it looks upon installation at particular place.

Improvise objective

The user should be able to scan the surrounding using his phone or laptop camera. If user finds laptop or phone then our application will detect it and send display its accessories. Then user can click on the accessories and navigate to respective ecommerce page for purchase.

Final Objective

With the improvised objective, now user should also be getting recommended suggestions based on his accessories list.

Existing Services/REST API Used

PowerAI Vision

This IBM api/environment helps us apply deep learning to create trained models based on images that we upload and label. We train, deploy, and test a new object detection model. With this pattern, we use deep learning training to create a model for object detection. PowerAI Vision presents REST APIs for inference operations. We can use any REST client for object detection with our custom model, and can use PowerAI Vision UI to test it initially. In summary we do the following:

1. Create a dataset for object detection with PowerAI Vision
2. Train and deploy a model based on the dataset
3. Invoke the model using REST calls

Open SSL:

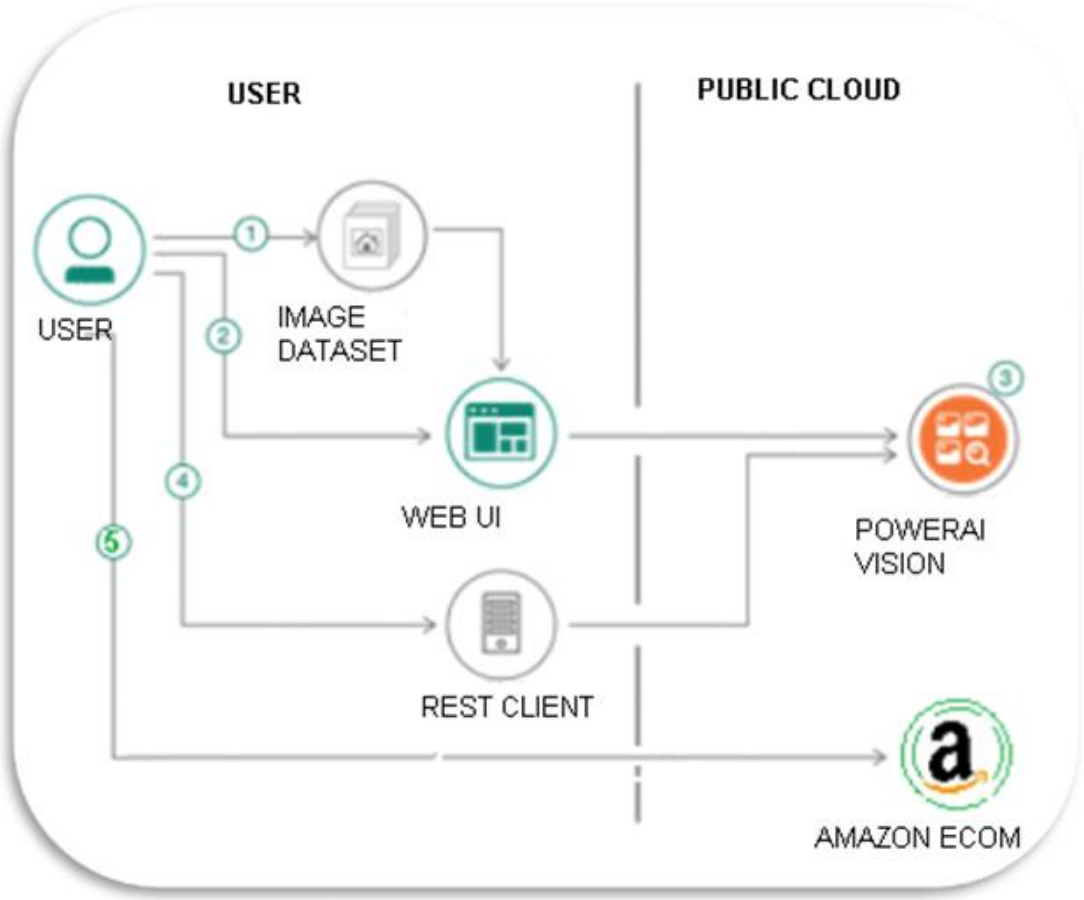
OpenSSL is a robust, commercial-grade, and full-featured toolkit for the Transport Layer Security (TLS) and Secure Sockets Layer (SSL) protocols. It is also a general-purpose cryptography library. We generate private/public key pair and SSL certificates using this library/tool. It is mandatory to have https for the web site so as to access it from chrome browser of android smart phones.

AR.js

Efficient Augmented Reality for the Web is made possible through the AR.js javascript framework. This library/api is based on: i. three.js - 3d on the web. ii. artoolkit! - augmented reality

Similar Recommended products

This api we have used to find the similar products http://webservices.amazon.com/onca/xml? Service=AWSECommerceService& AWSAccessKeyId=[AWS Access Key ID]& AssociateTag=[Associate ID]& Operation=SimilarityLookup&ItemId=ASIN1,ASIN2,ASIN3& Similarity Type=Random &Timestamp=2018-04-23T22:12:44Z] We have to provide the AWSAccessKeyId, Associate Tag and list of ItemIds for which we are searching similar items. The same api is used to search for the recommended items for both phone and laptop. Just we have to change the item ids.


USER
PUBLIC CLOUD
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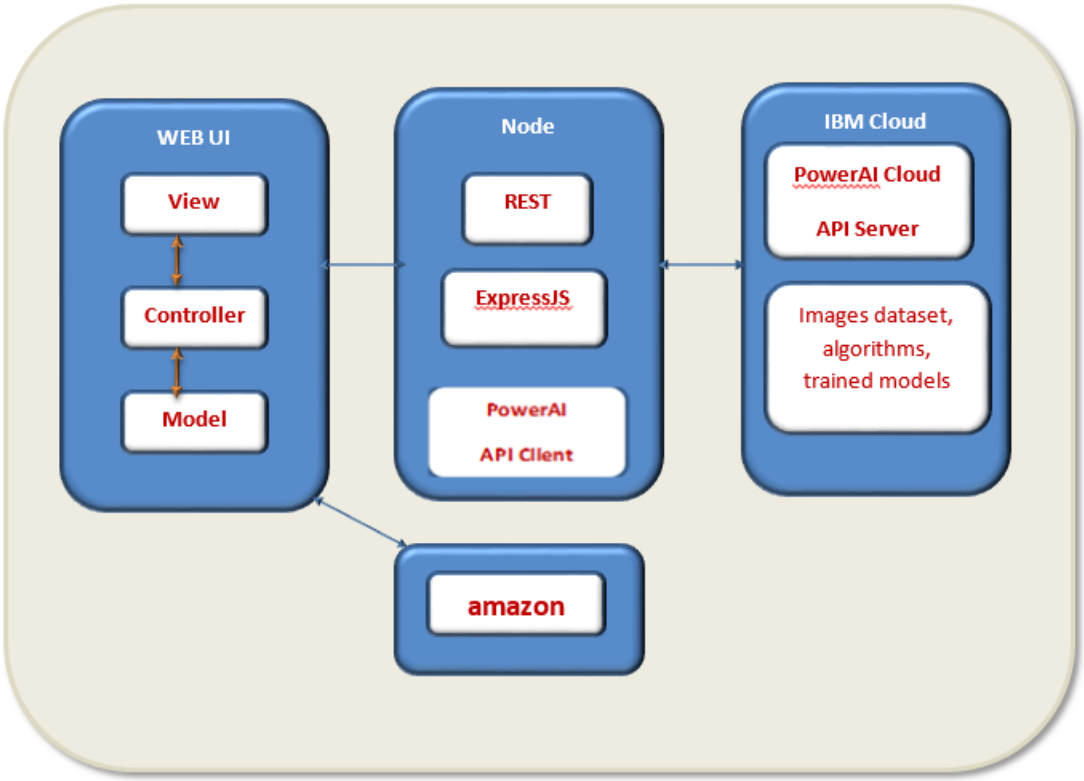
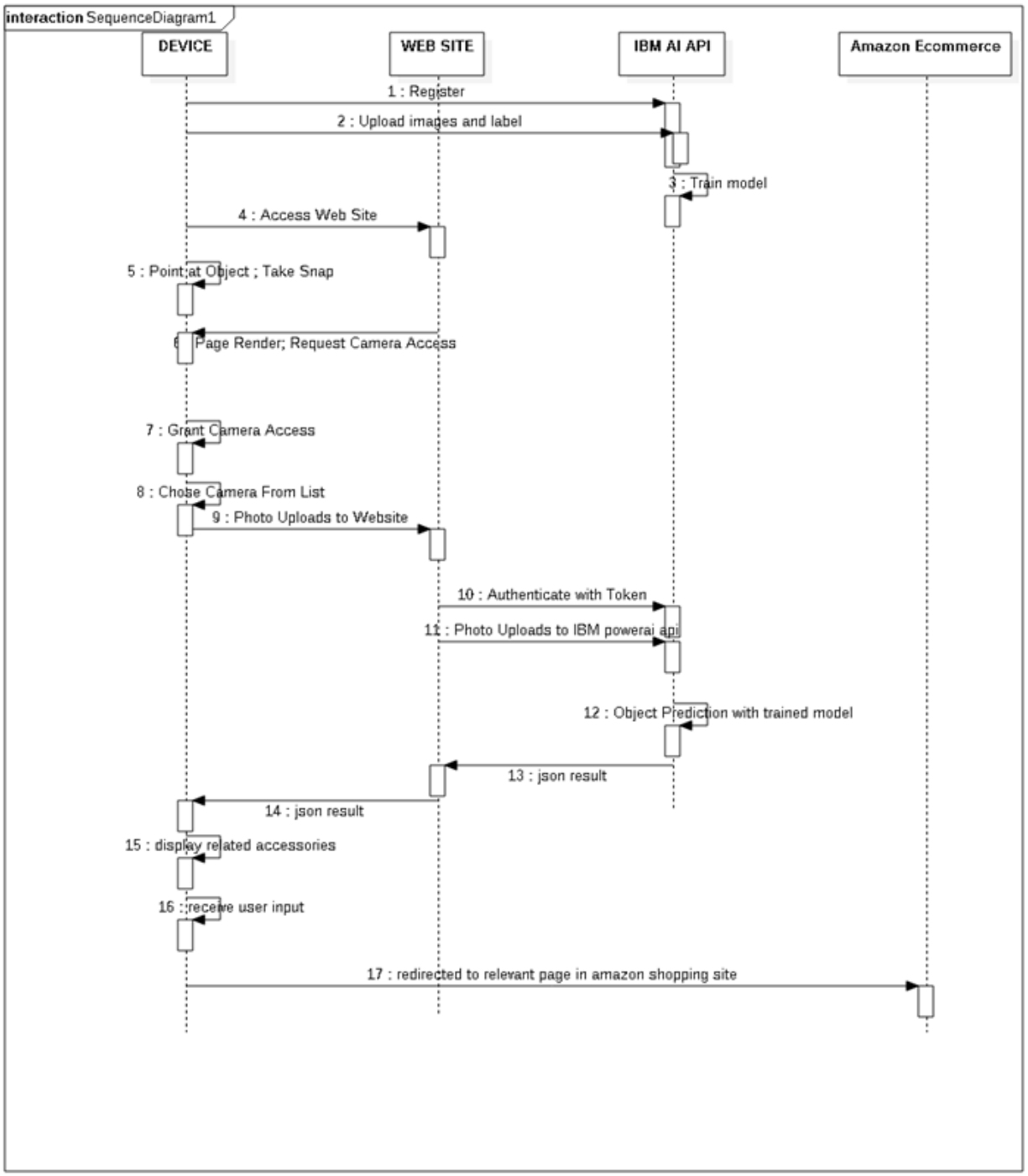
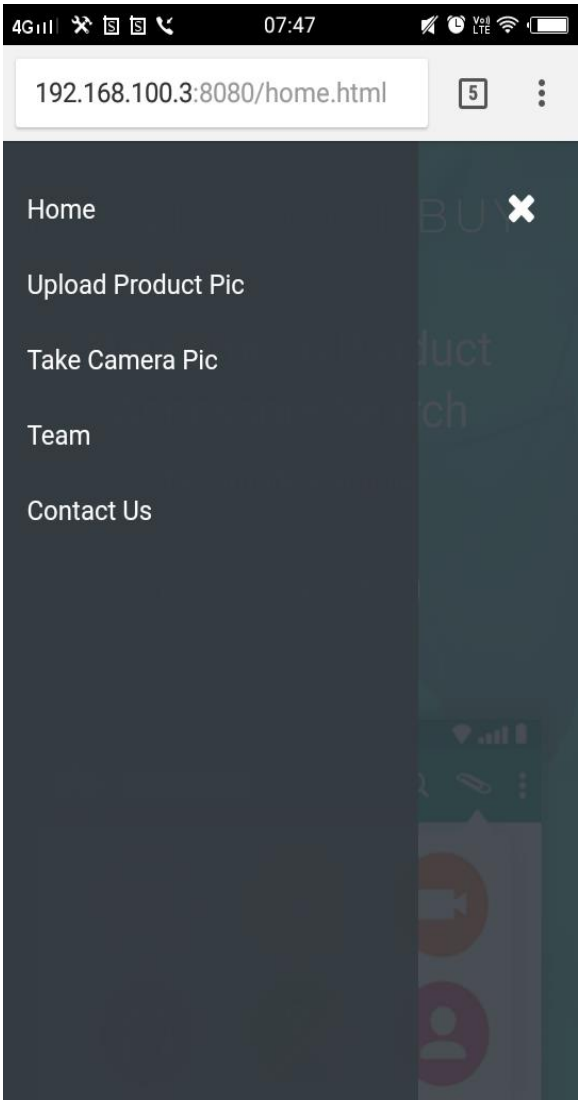

WEB UI
View
Controller
Model
Node
REST
ExpressJS
PowerAI
API Client
IBM Cloud
PowerAI Cloud
API Server
Images dataset,
algorithms,
trained models
amazon

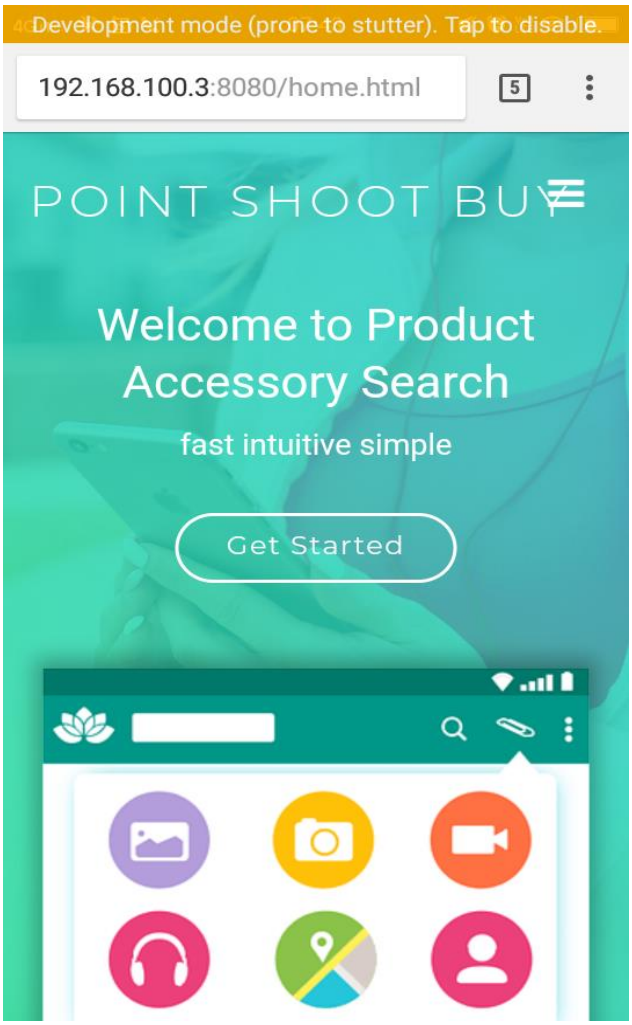


Implementation:

Host the product on the server and the home screen menu options looks like this on the side bar



The home screen looks like this. We have cleaned the html page and now it looks better.

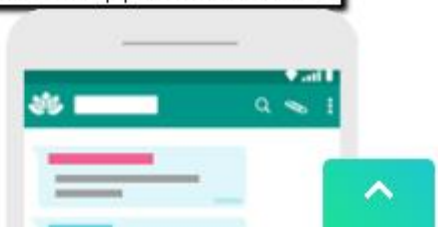


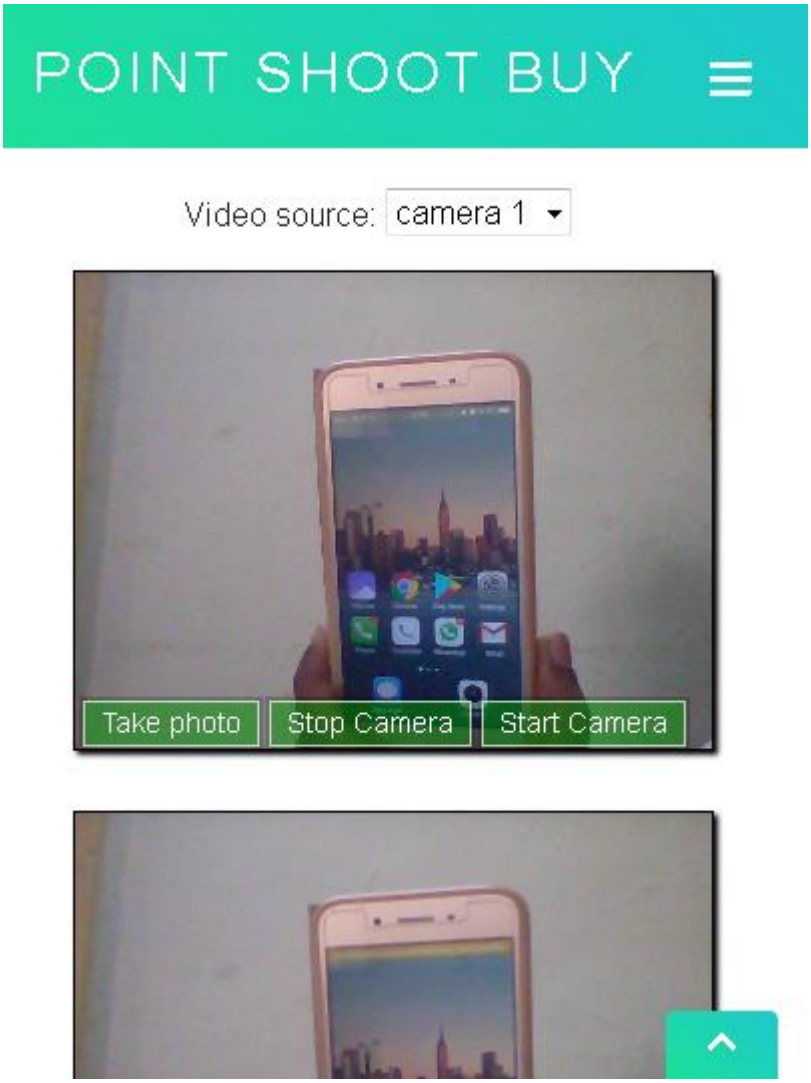
once we click on the open camera option, the browser opens camera and scans the objects

POINT SHOOT BUY ≡

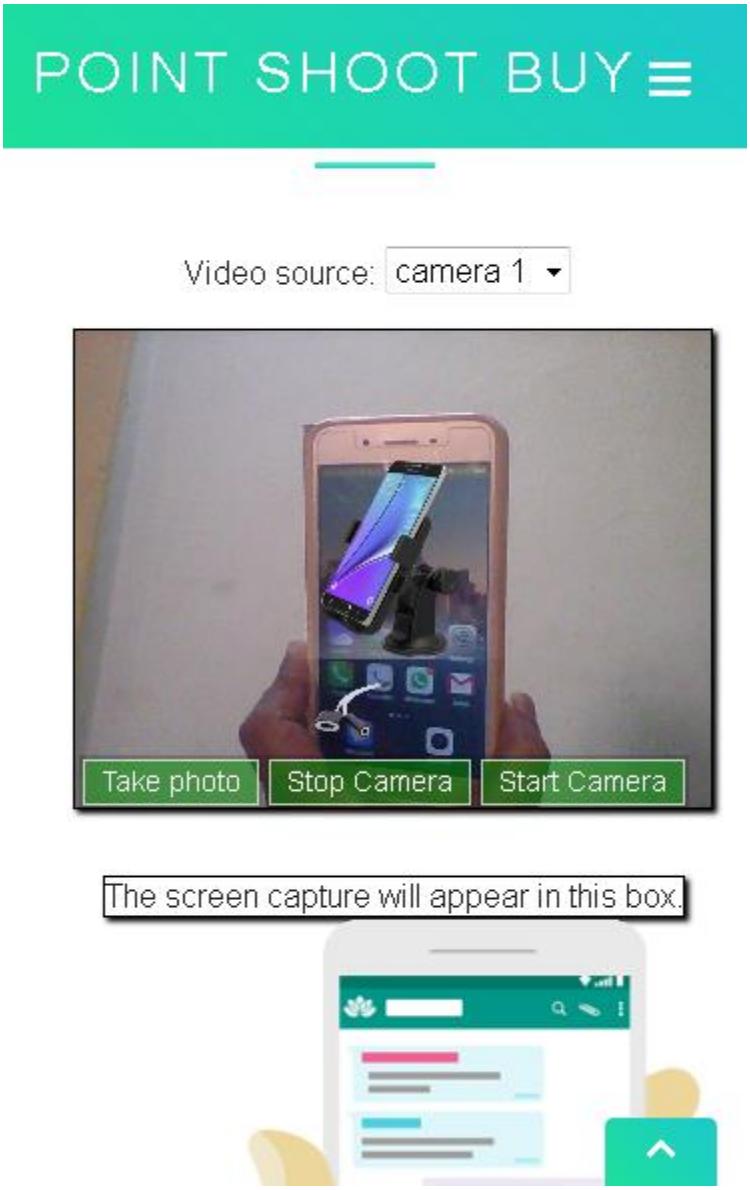
Video source: camera 1

The screen capture will appear in this box.





After that the object, here phone will be detected and its corresponding accessories will be displayed



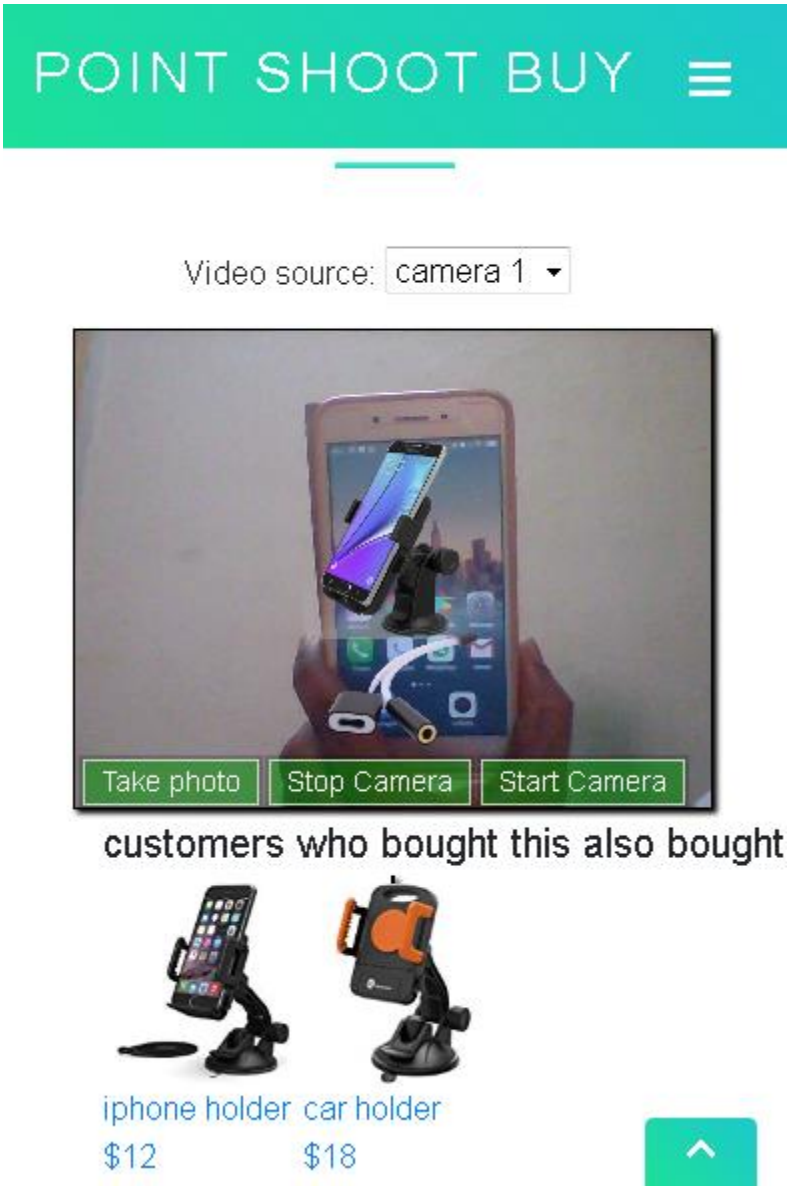
We are also displaying the recommended items. The UI screens of these recommended items are custom made. We make a rest call to amazon services and get the list of recommended items and their prices in the response. After that we add images and styles to that response and show in UI.

POINT SHOOT BUY

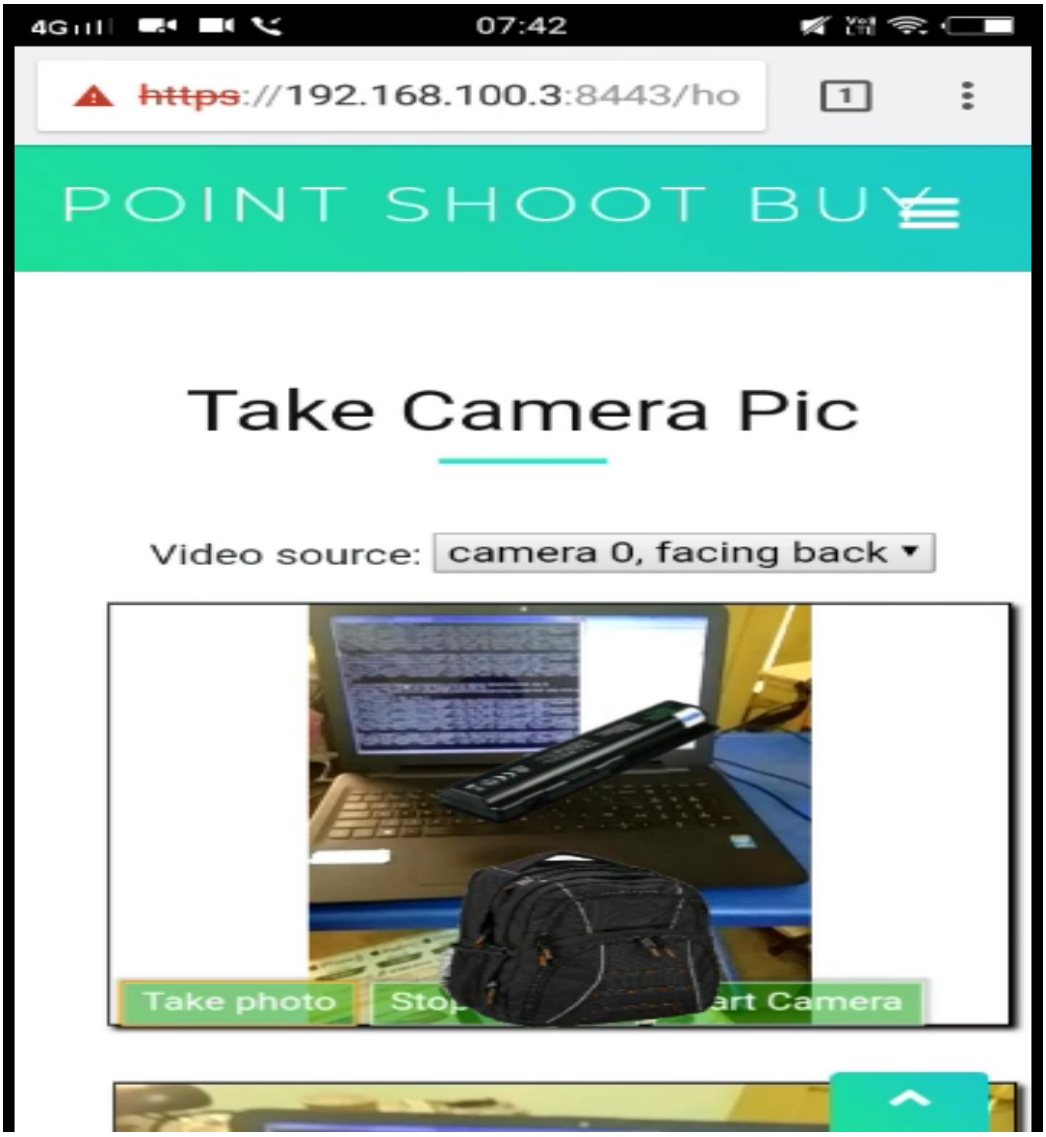
Take Camera Pic

Video source: camera 1

customers who bought this also bought



Similarly for laptop also: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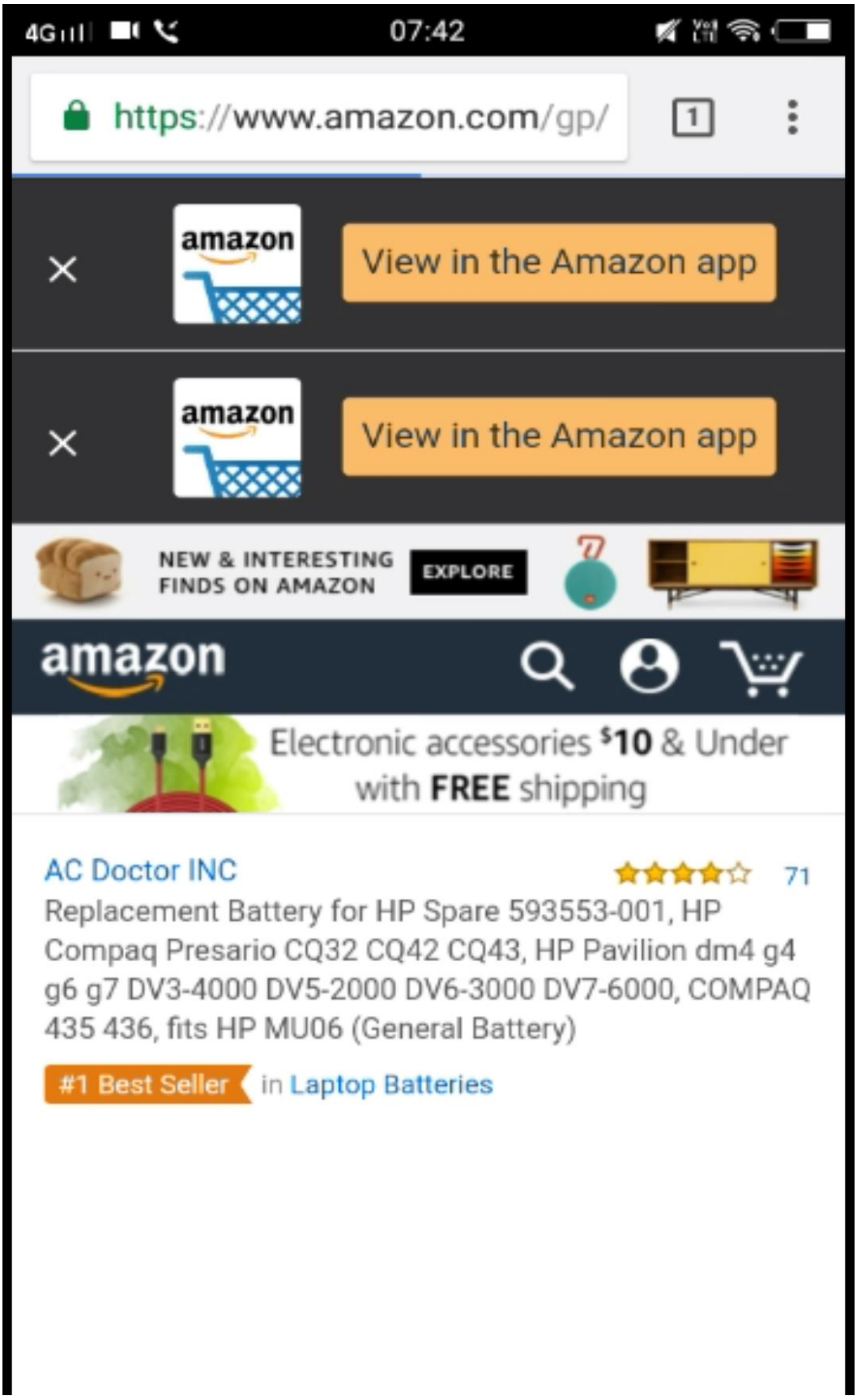
POINT SHOOT BUY
Take Camera Pic
Video source: camera 0, facing back
Take photo
Stop
art Camera


4G
07:42
https://www.amazon.com/gp/
1
amazon
View in the Amazon app
amazon
View in the Amazon app
NEW & INTERESTING FINDS ON AMAZON
EXPLORE
amazon
Electronic accessories $10 & Under with FREE shipping
AC Doctor INC
71
Replacement Battery for HP Spare 593553-001, HP Compaq Presario CQ32 CQ42 CQ43, HP Pavilion dm4 g4 g6 g7 DV3-4000 DV5-2000 DV6-3000 DV7-6000, COMPAQ 435 436, fits HP MU06 (General Battery)
#1 Best Seller
in Laptop Batteries

4G 07:42

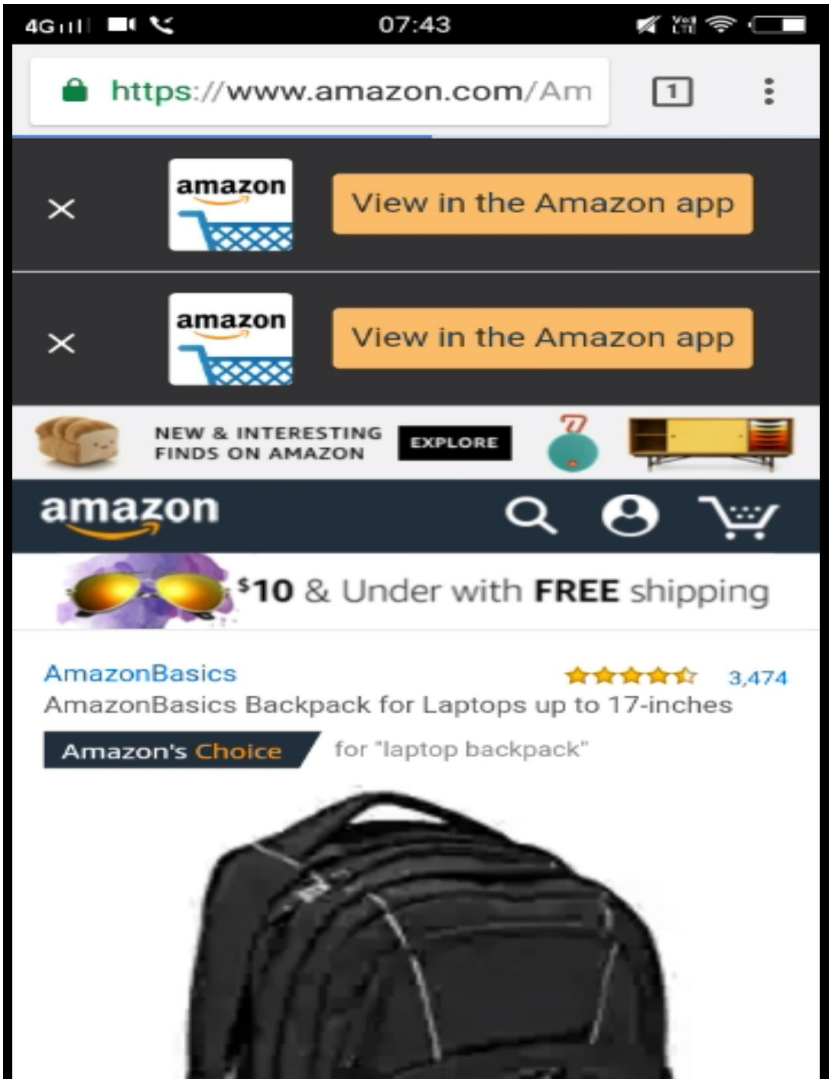
AC Doctor INC ★★★★☆ 71

Replacement Battery for HP Spare 593553-001, HP Compaq Presario CQ32 CQ42 CQ43, HP Pavilion dm4 g4 g6 g7 DV3-4000 DV5-2000 DV6-3000 DV7-6000, COMPAQ 435 436, fits HP MU06 (General Battery)

#1 Best Seller in Laptop Batteries

2 Colors:
General Battery

Price: ~~$24.49~~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https://www.amazon.com/Am
amazon
View in the Amazon app
amazon
View in the Amazon app
NEW & INTERESTING FINDS ON AMAZON
EXPLORE
amazon
$10 & Under with FREE shipping
AmazonBasics
3,474
AmazonBasics Backpack for Laptops up to 17-inches
Amazon's Choice
for "laptop backpack"


4G
07:43
Style:
1-Pack
$29 99
In Stock.
This item ships to India.
Ships from and sold by Amazon.com. Gift-wrap

Testing:

We did

1. integration testing
2. unit testing
3. tested all the feature flows

Object detection passed successfully amazon page redirection is success phone detection is success recommended objects are displayed successfully

TESTING:

In the Augmented Reality Advertisement,Firstly we run an application on laptop by using camera and then we scanned the Hiro marker.By using this our team developed a code for our project to display the 3D objects in a mobile.We successfully executed the code and now we have to test it by opening our mobile camera.Now, we integrated the code into mobile and opened the mobile camera. we tested scanning the Hiro marker in the mobile camera and we get the 3D object as a mobile shape.

Now Every single application should be tested before the deployment to the server. Here, we will use Mocha as the test running framework, and Chai as the assertion library. User interface as well as functionality can be thoroughly tested. Media support detection, camera detection, multiple camera detection, image capture and upload, object detection, appropriate accessory display, navigation to ecommerce site are few of the subtasks that can be provided with unit tests.

Implementation:

We have developed a web application which will be hosted on a server. The client can access it from any browser either from laptop or phone and get the feel of our AR application. By developing a web application, it becomes accessible to everyone instead of downloading and installing OS specific applications(like android/IOS). The user will open the application and scan objects using camera. If the scan results found any laptop/phone, then our application will recognize and show accessories for it. Now we activated links on 3d objects for both phone and laptops and explore the webservices to read the accessory cost and display. Then we create an account to use web service and display the recommended items for the accessories of phone and laptops integrate and test functionalities related to both phone and laptop.

Description:-

Web

We used AR.js to build the initial code base necessary for presenting different accessories relative to the product.

API We chose the IBM PowerAI Vision API for object detection in our project as it gives us scope to experience the typical work flow of machine learning i.e preprocessing dataset, training, validation and predicting. We captured the frame from the camera and uploaded it to power AI vision API through nodejs site. We are able to receive json output and parse it. We have made cosmetic changes for better UI.

Deployment Steps:

a. Machine Learning: ibm powervision api

Subscribe for ibm powervision api. IBM PowerAI Vision provides tools and interfaces for business analysts, subject matter experts, and developers without any skill in deep learning technologies to begin using deep learning. The tools assist user to focus on rapidly identifying datasets, labeling them, and building models for inference.

https://developer.ibm.com/linuxonpower/deep-learning-powerai/try-powerai/

IBM uses tensorflow for object detection. TensorFlow is an open-source software library for dataflow programming across a range of tasks. It is a symbolic math library, and is also used for machine learning applications such as neural networks.

b. Augmented Reality - AR.js - for the Web

AR.js is a solution for efficiently doing augmented reality on the web.

https://github.com/jeromeetienne/ar.js

c. Nodejs:

Node.js is a JavaScript runtime built on Chrome's V8 JavaScript engine. Node.js uses an event-driven, non-blocking I/O model that makes it lightweight and efficient.

https://nodejs.org/en/download/

Node.js' package ecosystem, npm is used to install the dependencies such as

https://docs.npmjs.com/getting-started/installing-node

```
"dotenv": "^4.0.0",
"express": "4.16.2",
"metrics-tracker-client": "^0.2.3",
"request": "2.83.0"
```

https support

d. JQuery: javascript framework

e. bootstrap: responsive web design

f. openssl: digital certificates for https support - must for mobile web access.

The two files you need are a PEM encoded SSL certificate and private key. PEM encoded certs and keys are Base64 encoded text with start/end delimiters that look like -----BEGIN RSA PRIVATE KEY----- or similar.

To create an SSL certificate, you first need to generate a private key and a certificate signing request, or CSR (which also contains your public key).You can do this in a variety of ways, but here's how in OpenSSL.

openssl req -newkey rsa:2048 -new -nodes -keyout key.pem -out csr.pem

This will cause you to enter an interactive prompt to generate a 2048-bit RSA private key and a CSR that has all the information you choose to enter at the prompts. (Note: Common Name is where you'll want to put the domain name you'll be using to access your site.) Once you've done this you would normally submit this CSR to a trusted certificate authority and once they've validated your request you would receive a certificate.

g. amazon api

INCREMENT WISE REPORT:

The above documentation give the complete picture of our project. But here we are adding the actual report which have created during each iteration following the azile model. So the below documentation is kind of duplicate of the above documentation but explaining our progress and changes accepted and implemented iteration by iteration.

Motivation and Plan: https://github.com/gani938/ASE-PROJECT/wiki

1. Incretement1: https://github.com/gani938/ASE-PROJECT/wiki/Iterartion1
2. Incretement2: https://github.com/gani938/ASE-PROJECT/wiki/Iterarion2
3. Incretement3: https://github.com/gani938/ASE-PROJECT/wiki/Iteration-3

For Reference, I am adding the contents of the reports of each iteration. Please find it below:

Motivation and Plan:

Project Name

Social Advertisement

Team Name:

Pikachu

Team Members:

1. MD USMAN GANI SYED (LabId: 3-1)
2. MADHUKAR REDDY VURADI (LabId: 3-1)
3. CHAITANYA SAILESH TONDEPU (LabId: 3-2)
4. SAI KRISHNA TEJA KUNISETTY (LabId: 3-2)

Motivation:

Advertisement in social media is a trending platform and its evolving continuously. We as a team want to be part of that revolution.

Objectives:

Receive large amount of users search data from twitter/fb/amazon and filter for the user's interests. If possible use webservises provided by third party to get user interests. Using this information, we will post an add on user facebook profile according to user's interest. If user search item is laptop, then we will post a laptop add on his profile. Now there is high probability that user might click the add as it is of his/her particular interest. Its an AR add. Lets say user is interested in buying stydy table, then the add will show how it looks upon installation at particular place.

Uniqueness:

This kind of ideas have not yet become fully implemented on all social media. But it is trending and will be the most successfull idea in the coming years. Billions of dollars are being invested on these ideas.

System features:

1. Gather and display user's interests

2. Posting add on facebook page of user

Related Work:

We have not worked in this field. But this is our area of interest generated after lot of thinking. We wil work hard to make it success.

Technologies:

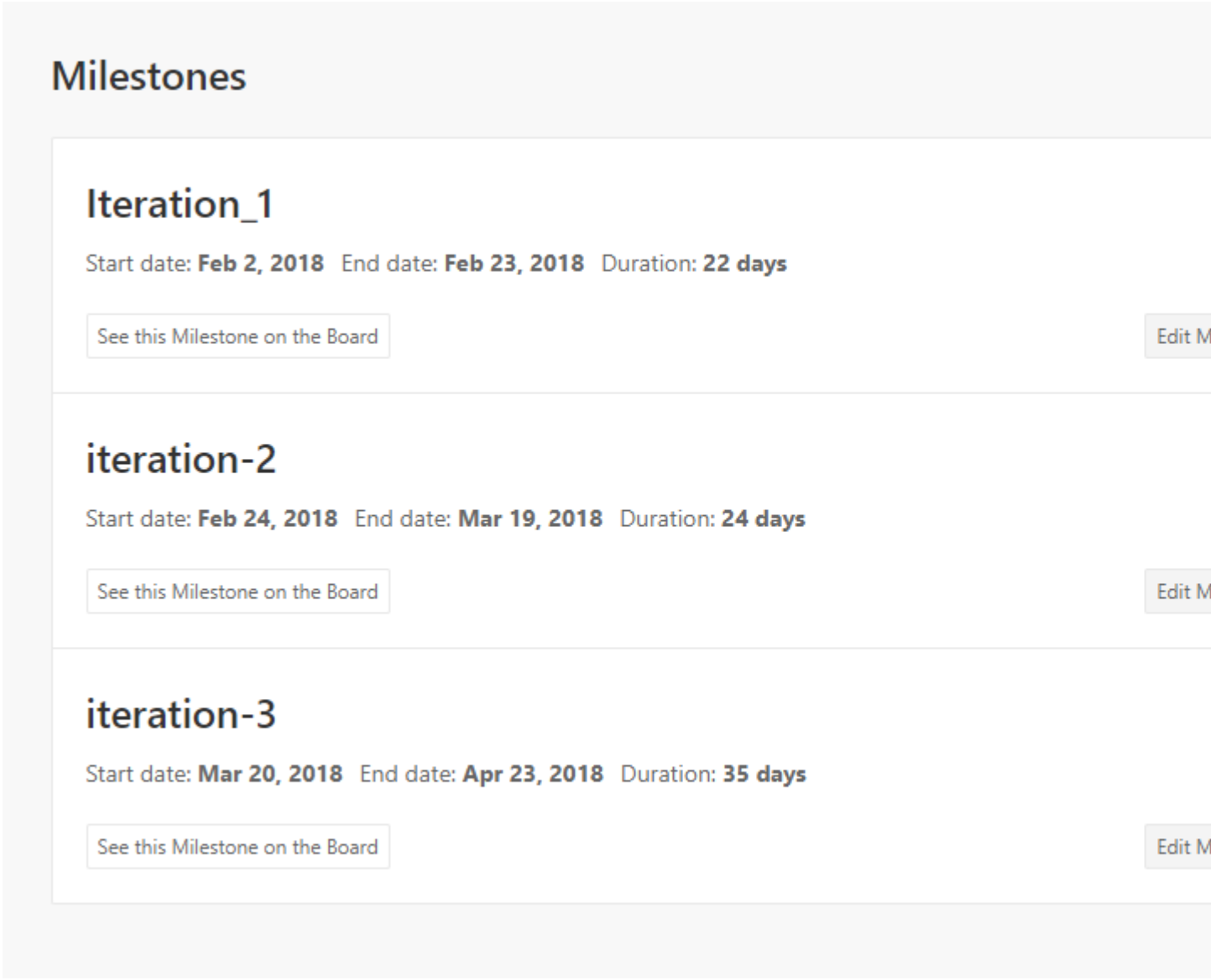
Front End: AngularJs Backend:NodeJs, ExpressJs, MongoDB AR technologies Blender, Unity. Technologies might change if Android app is created.

Bibliogarphy

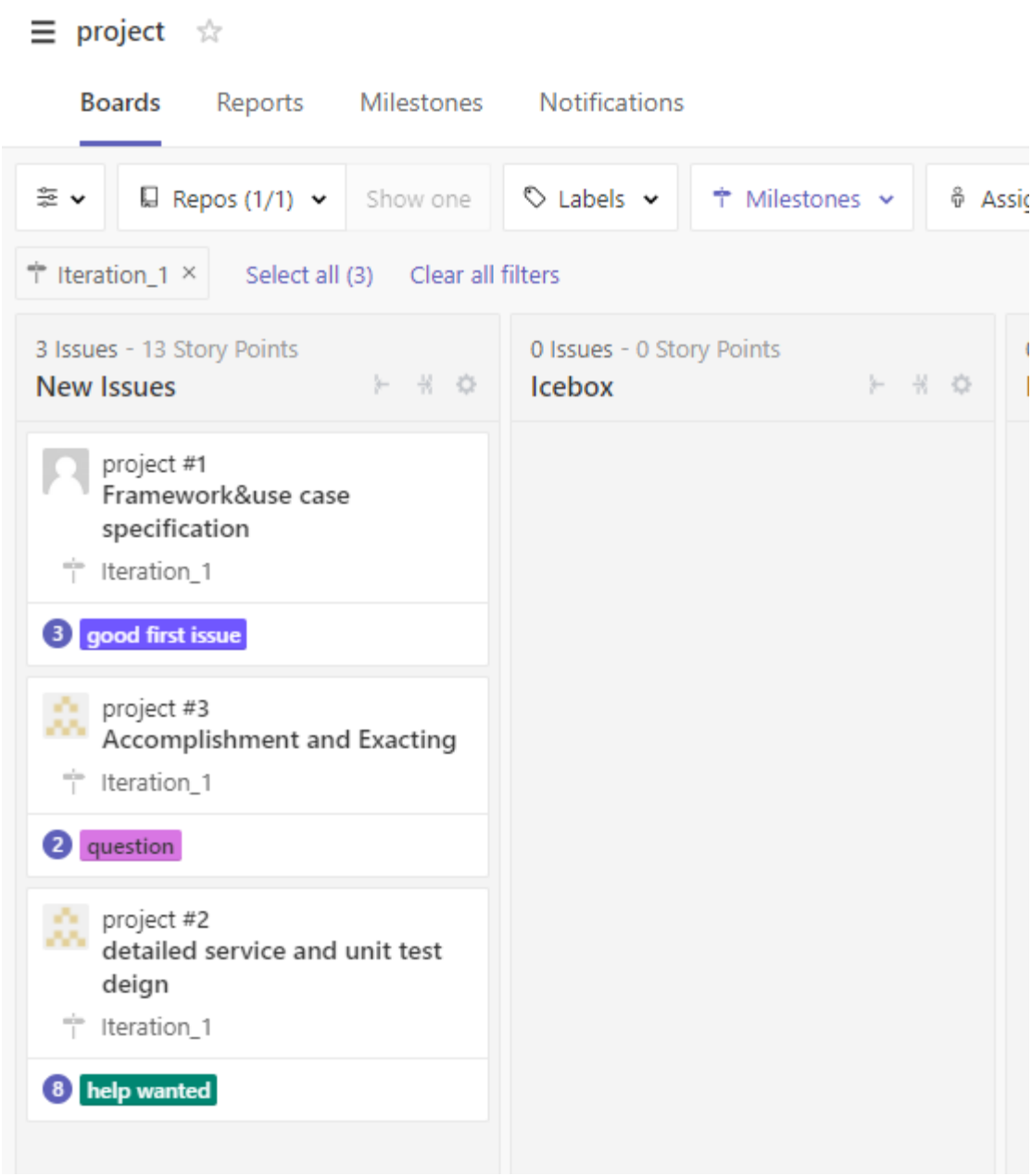
https://marketingland.com/social-media-advertising-set-explode-next-3-years-121691http://www.adweek.com/digital/james-jorner-effective-inbound-marketing-guest-post-augmented-reality/ http://mediakix.com/2017/05/augmented-reality-social-media-trends-future/#gs.sIgUebA https://www.imore.com/best-ar-experiences-social-media-right-nowhttps://marketinginsidergroup.com/social-media/using-augmented-reality-marketing/

Zenhub Plan

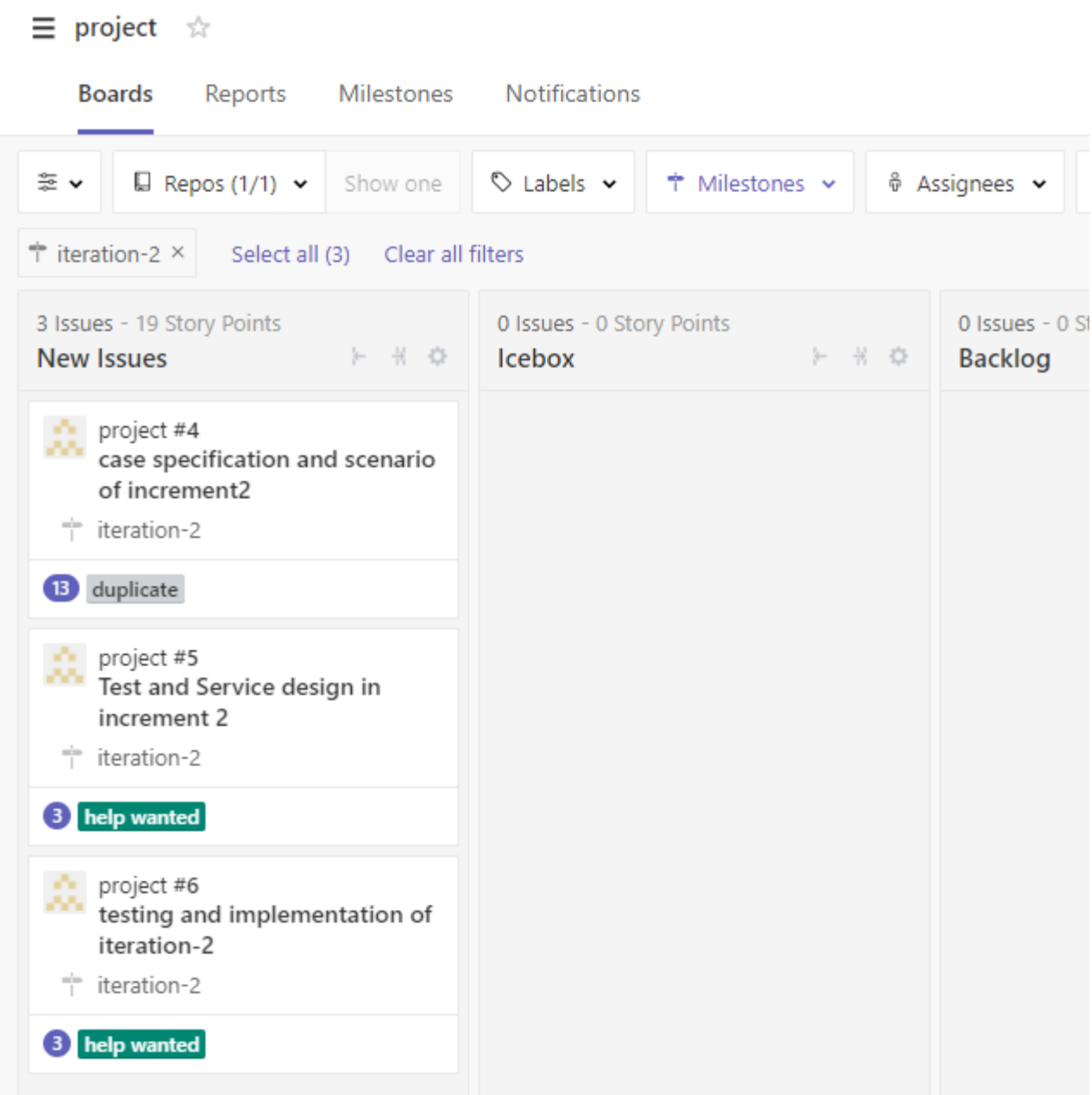
Milestones


Milestones
Iteration_1
Start date: Feb 2, 2018 End date: Feb 23, 2018 Duration: 22 days
See this Milestone on the Board
Edit M
iteration-2
Start date: Feb 24, 2018 End date: Mar 19, 2018 Duration: 24 days
See this Milestone on the Board
Edit M
iteration-3
Start date: Mar 20, 2018 End date: Apr 23, 2018 Duration: 35 days
See this Milestone on the Board
Edit M

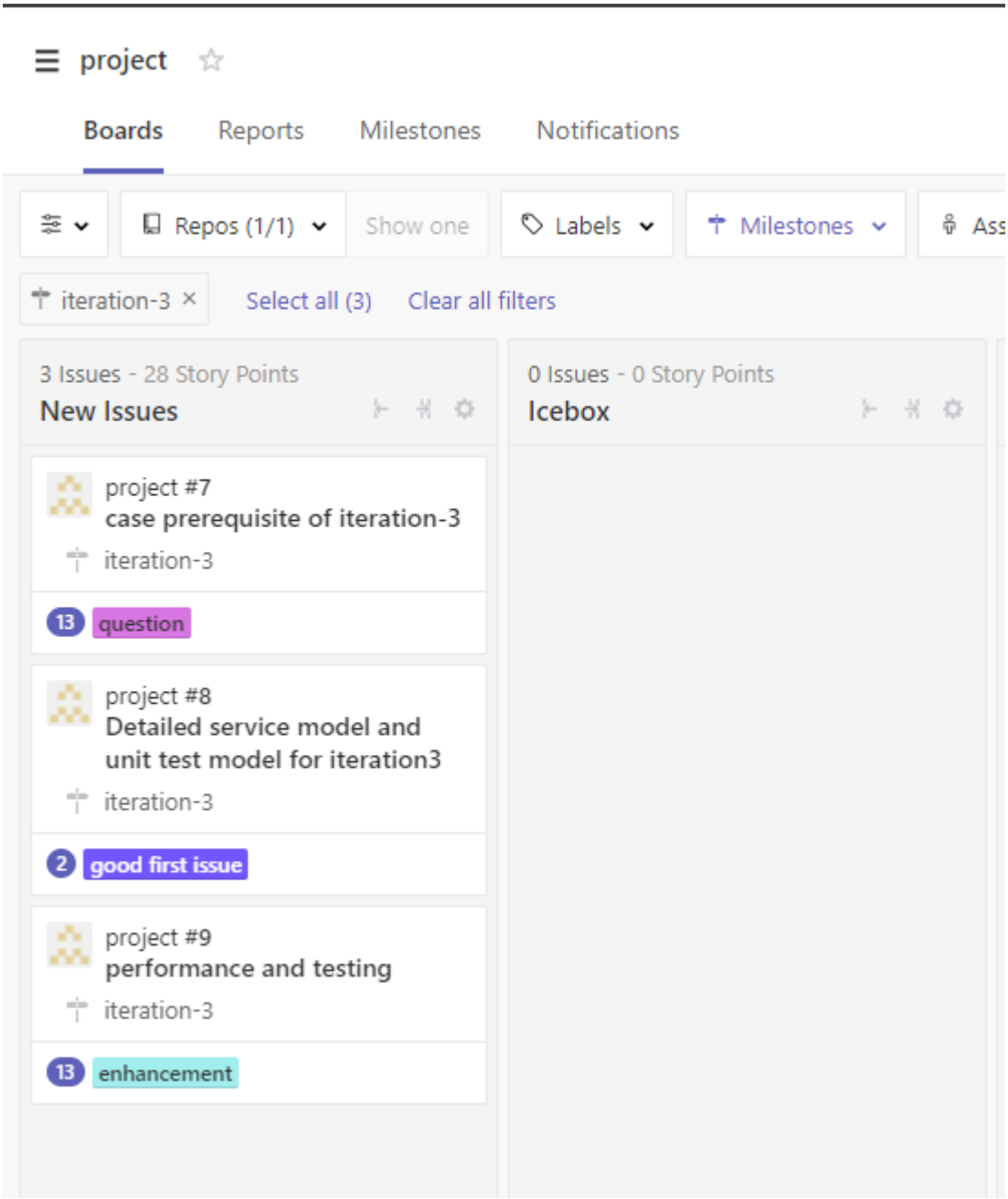
Iteration1


project
Boards
Reports
Milestones
Notifications
Repos (1/1)
Show one
Labels
Milestones
Iteration_1
Select all (3)
Clear all filters
3 Issues - 13 Story Points
New Issues
0 Issues - 0 Story Points
Icebox
project #1
Framework&use case specification
Iteration_1
3 good first issue
project #3
Accomplishment and Exacting
Iteration_1
2 question
project #2
detailed service and unit test deign
Iteration_1
8 help wanted

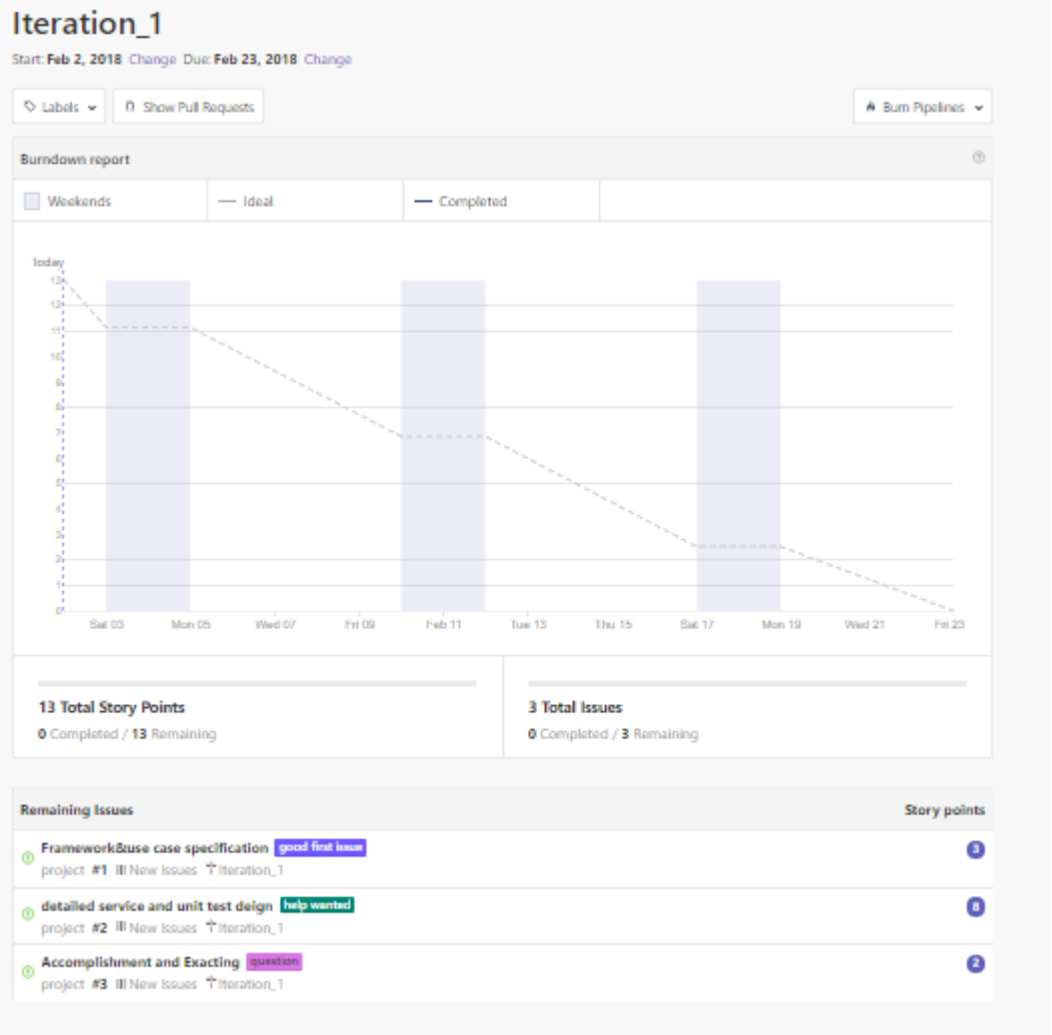
Iteration2


project
Boards
Reports
Milestones
Notifications
Repos (1/1)
Show one
Labels
Milestones
Assignees
iteration-2
Select all (3)
Clear all filters
3 Issues - 19 Story Points
New Issues
project #4
case specification and scenario of increment2
iteration-2
13 duplicate
project #5
Test and Service design in increment 2
iteration-2
3 help wanted
project #6
testing and implementation of iteration-2
iteration-2
3 help wanted
0 Issues - 0 Story Points
Icebox
0 Issues - 0 S
Backlog

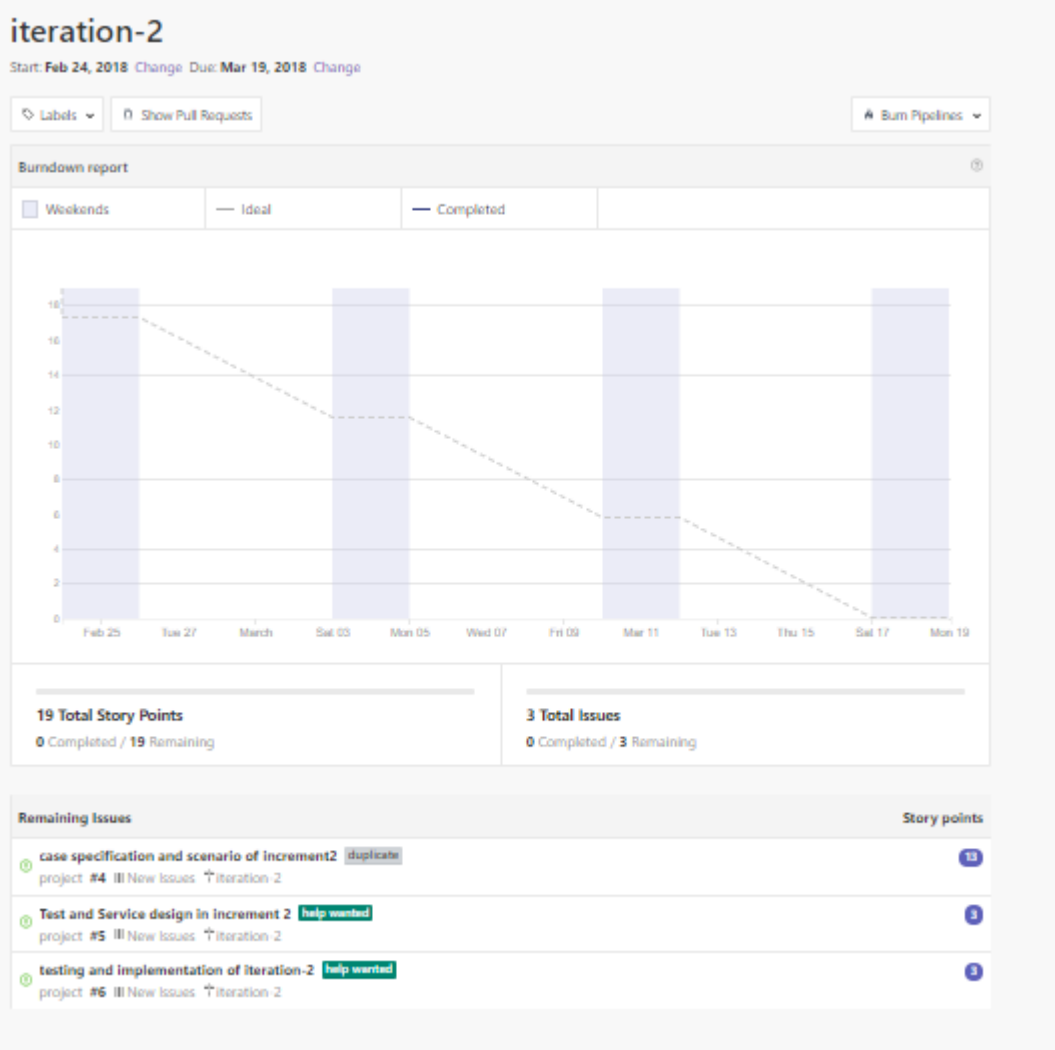
Iteration3


project
Boards
Reports
Milestones
Notifications
Repos (1/1)
Show one
Labels
Milestones
iteration-3
Select all (3)
Clear all filters
3 Issues - 28 Story Points
New Issues
project #7
case prerequisite of iteration-3
iteration-3
13 question
project #8
Detailed service model and unit test model for iteration3
iteration-3
2 good first issue
project #9
performance and testing
iteration-3
13 enhancement
0 Issues - 0 Story Points
Icebox

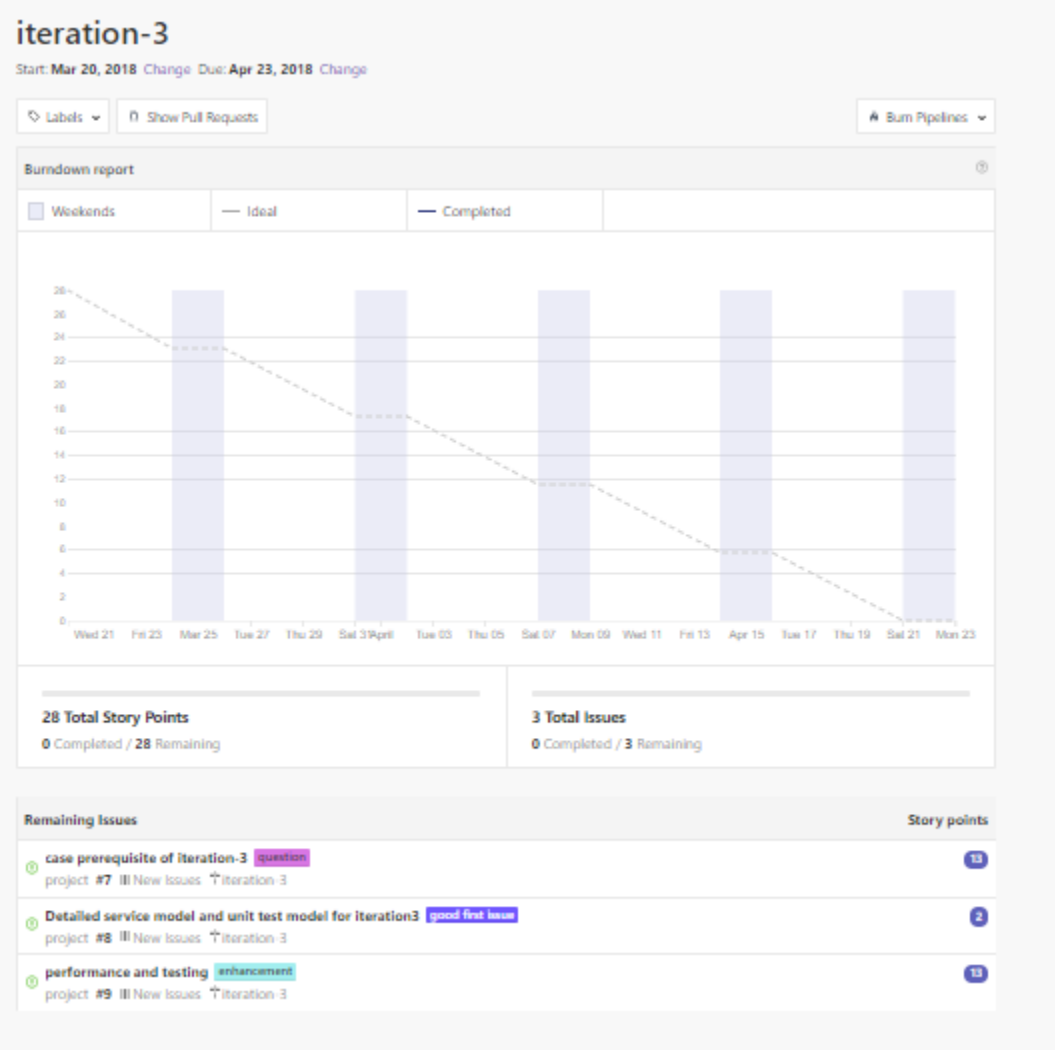
Burnout1


Iteration_1
Start: Feb 2, 2018 Change Due: Feb 23, 2018 Change
Labels
Show Pull Requests
Burn Pipelines
Burndown report
Weekends
Ideal
Completed
today
Sat 03
Mon 05
Wed 07
Fri 09
Feb 11
Tue 13
Thu 15
Sat 17
Mon 19
Wed 21
Fri 23
13 Total Story Points
0 Completed / 13 Remaining
3 Total Issues
0 Completed / 3 Remaining
Remaining Issues
Story points
Framework&use case specification good first issue
project #1 New Issues Iteration_1
3
detailed service and unit test deign help wanted
project #2 New Issues Iteration_1
8
Accomplishment and Exacting question
project #3 New Issues Iteration_1
2

Burnout2


iteration-2
Start: Feb 24, 2018 Change Due: Mar 19, 2018 Change
Labels
Show Pull Requests
Burn Pipelines
Burndown report
Weekends
Ideal
Completed
Feb 25
Tue 27
March
Sat 03
Mon 05
Wed 07
Fri 09
Mar 11
Tue 13
Thu 15
Sat 17
Mon 19
19 Total Story Points
0 Completed / 19 Remaining
3 Total Issues
0 Completed / 3 Remaining
Remaining Issues
Story points
case specification and scenario of increment2 duplicate
project #4 New Issues iteration 2
13
Test and Service design in increment 2 help wanted
project #5 New Issues iteration 2
3
testing and implementation of iteration-2 help wanted
project #6 New Issues iteration 2
3

Burnout3



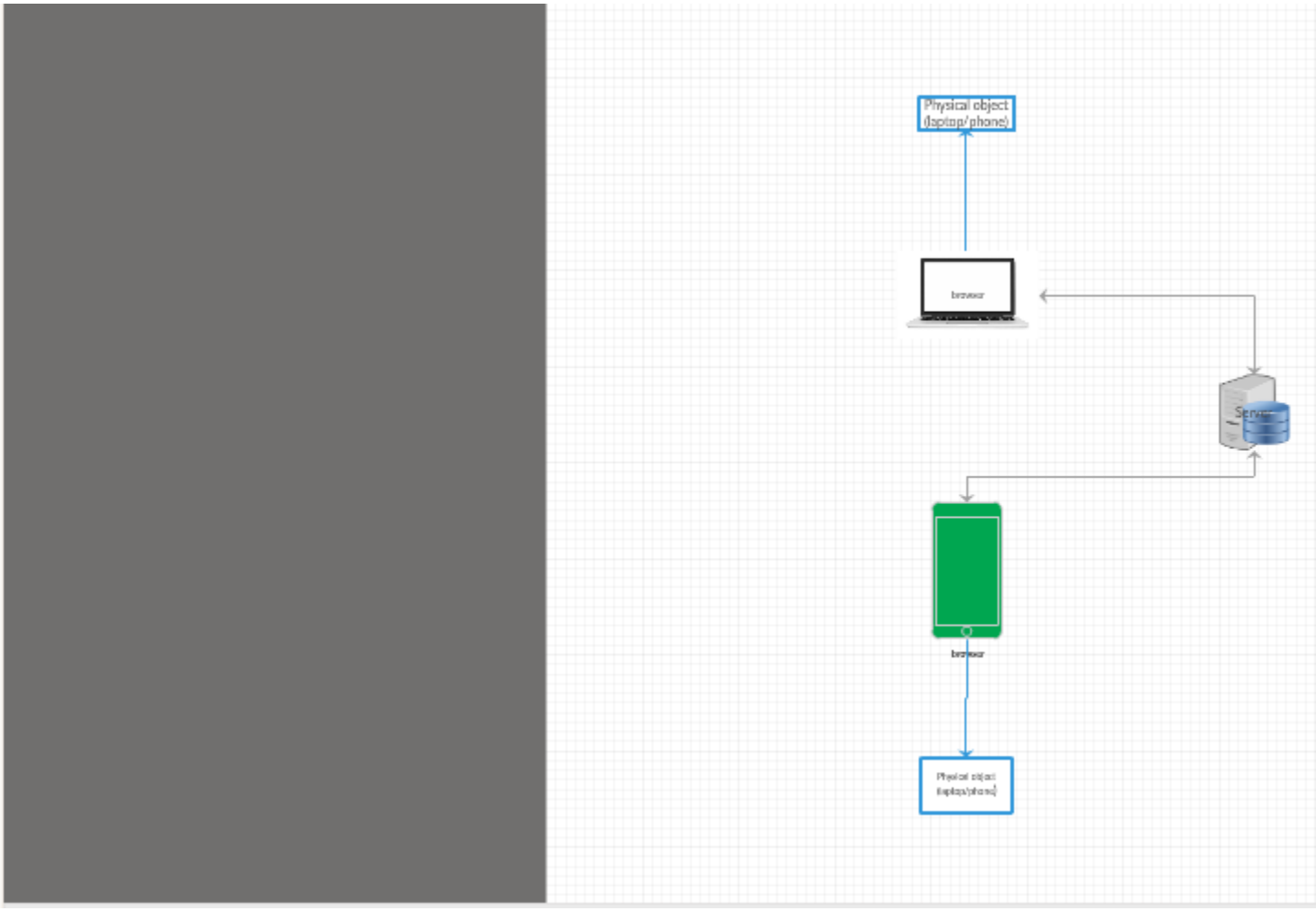
Incretement1

Services Used

For 3d view and Augemented Reality, we have used AR.js and A-Frame

We are exploring the IBM machine learning APIS for object detection. In our case objects are laptop and mobile. Currently we are exploring to train and develop the api. Once it is developed, will be integrated in the next release.

Architechture Diagram



Testing

1. Input: scan hiro marker output: display phone in 3d status: passed
2. Input: scan kanji marker output: display laptop in 3d status: passed

Implementation

For the current iteration, we have partially developed our project goal. Its still under refinement. Lets go through the current implementation. We have developed a web application which will be hosted on a server. The client can access it from any browser either from laptop or phone and get the feel of our AR application. By developing a web application it becomes accessible to everyone instead of downloading and installing OS specific applications(like android/IOS). The user will open the application and scan

objects using camera. If the scan results found any laptop/phone, then our application will recognize and show accessories for it.

But, here we have not yet fully implemented the object detection. So instead of using actual phone, we are using "hiro marker" to scan. If our application found hiro marker, then it will display a 3d view oh a phone. So, basically on scanning hiro marker we are showing the 3d image of phone. This was our 1st step. Later we replace hiro marker with actual phone and 3d image of phone with its accessories.

Technologies and Libraries Used: NodeJs, AR.js, HTML,CSS,JS

Sample code:

```
<a-marker preset='hiro'>
    <a-entity
            scale="0.02 0.02 0.02"
            position="0.5 0.5 0.5"
            rotate="1 0.5 1"
            obj-model="obj: #tree-obj; mtl: #tree-mtl">
        </a-entity>

</a-marker>
```

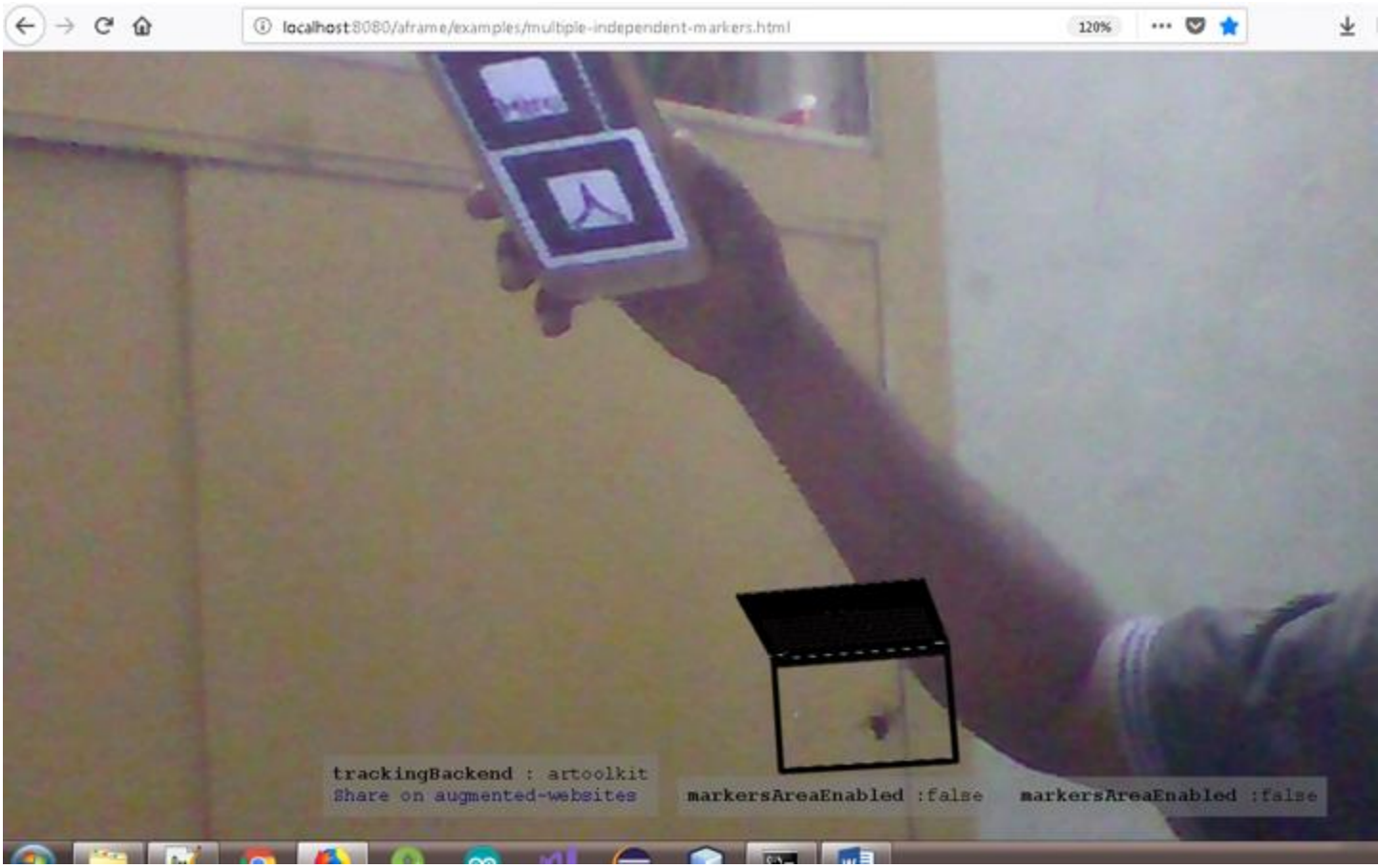
Deployment

Here we have used hiro marker to display 3d image of phone. Later this hiro marker will be replaced with physical phone. On scanning the physical phone, we display its accessories in

3d.

Here we have used kanji marker to display 3d image of laptop. Later this kanji marker will be replaced with physical laptop. On scanning the physical laptop, we display its accessories in

3d.



Project Management

Implementation status report

User Stories:

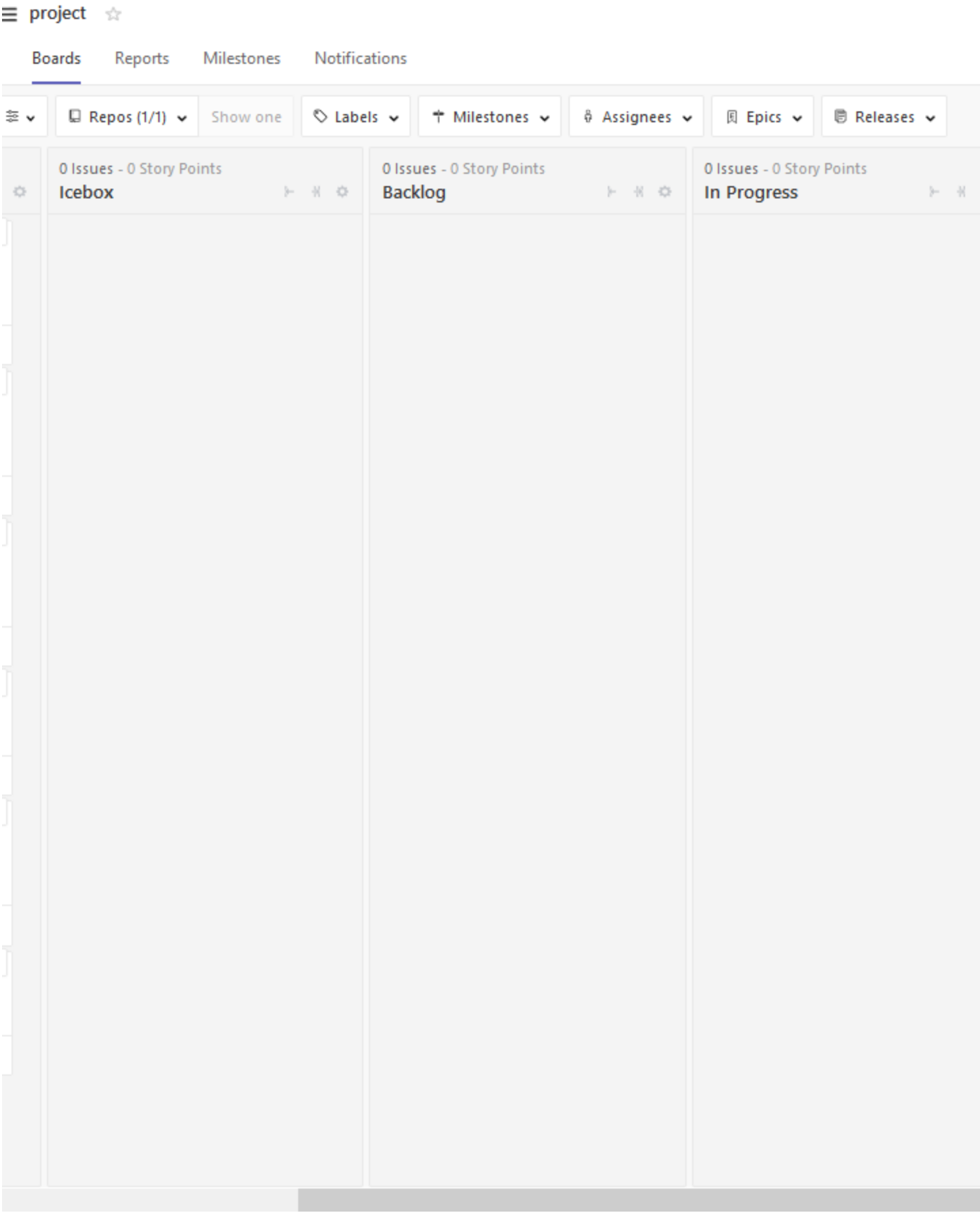
1. Explore and find best suitable technologies
2. Create a sample AR application with 3d object cube
3. Teach the learnings to team members
4. Develop a 3d objects for phone and laptop
5. Integrate 3d objects phone and laptop by replacing with cube
6. Explore IBM object detection machine learning APIS
7. wiki Document-iteration
8. Prepare presentation for release

Description: Allocated the first iteration work equally to the team member. Everyone in the team has actively participated and did 25% of the project work for the iteration 1 which mounts to successful completion of it. Responsibility,Contribution and Time allocated.

1. MD USMAN GANI SYED has did the first 3 sub tasks in the iteration one i.e
2. Explore and find best suitable technologies,
3. Create a sample AR application with 3d object cube
4. Teach the learnings to team members . The time allocated for contributing this sub tasks is 24hrs.
5. VURADI MADHUKAR REDDY has did two tasks
6. Develop a 3d objects for phone and laptop
7. Prepare presentation for release. The time allocated for contributing this tasks is 20hrs
8. KUNISETTY SAI KRISHNA TEJA did a task Integrate 3d objects phone and laptop by replacing with cube. He did the task for 16hrs.
9. TONDEPU CHAITANYA SAILESH has did two tasks
10. Explore IBM object detection machine learning apis.
11. wiki Document-iteration-1(s) -8.

He was allocated 16hrs for contributing this two tasks.

zenhub screenshots


project
Boards
Reports
Milestones
Notifications
Repos (1/1)
Show one
Labels
Milestones
Assignees
Epics
Releases
0 Issues - 0 Story Points
Icebox
0 Issues - 0 Story Points
Backlog
0 Issues - 0 Story Points
In Progress

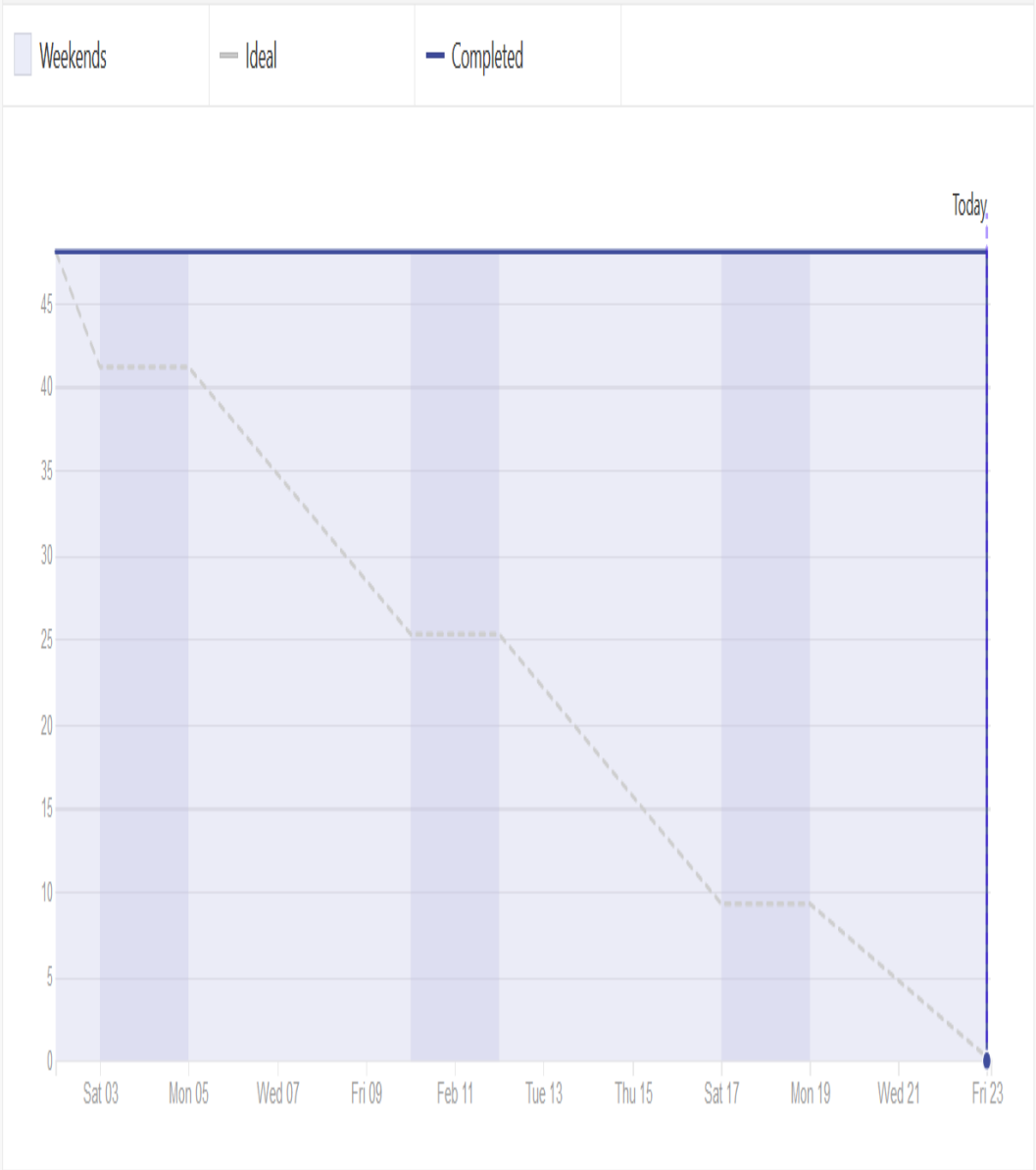
Iteration_1

Developed web Ar application and hosted it on the serve and tested with marker scan in the phone and in laptop screen.

Start: **Feb 2, 2018** Change Due: **Feb 23, 2018** Change

Labels Show Pull Requests Burn Pipelines

Burndown report



48 Total Story Points

48 Completed / **0** Remaining

10 Total Issues

10 Completed / **0** Remaining

Completed Issues	Story points
Framework&use case specification good first issue project **#1** New Issues Iteration_1	3
detailed service and unit test deign help wanted project **#2** New Issues Iteration_1	8
Accomplishment and Exacting question project **#3** New Issues Iteration_1	2
Explore and find best suitable technolgies help wanted project **#10** New Issues Iteration_1	5
Create a sample AR application with 3D cube enhancement project **#11** Backlog Iteration_1	8
Teach the learnings to team memebers help wanted project **#12** Done Iteration_1	2
Develop a 3D objects for phone and laptop question project **#13** Icebox Iteration_1	5
Integrate 3D objects with phone and laptops by replacing with cube enhancement project **#14** In Progress Iteration_1	2
Explore IBM Object detection machine learning apis help wanted project **#15** In Progress Iteration_1	5
Prepare presentation for release 1 enhancement project **#16** Review/QA Iteration_1	8

Bibliography

1.https://medium.com/arjs/augmented-reality-in-10-lines-of-html-4e193ea9fdbf 2. https://code.tutsplus.com/tutorials/code-your-first-augmented-reality-app-with-arkit--cms-297053. https://github.com/jeromeetienne/AR.js/blob/master/README.md 4. https://aframe.io/blog/arjs/5. https://github.com/jeromeetienne/AR.js-docs 6. https://www.omnivirt.com/blog/examples-effective-augmented-reality-ads/ 7. https://jeromeetienne.github.io/AR.js/

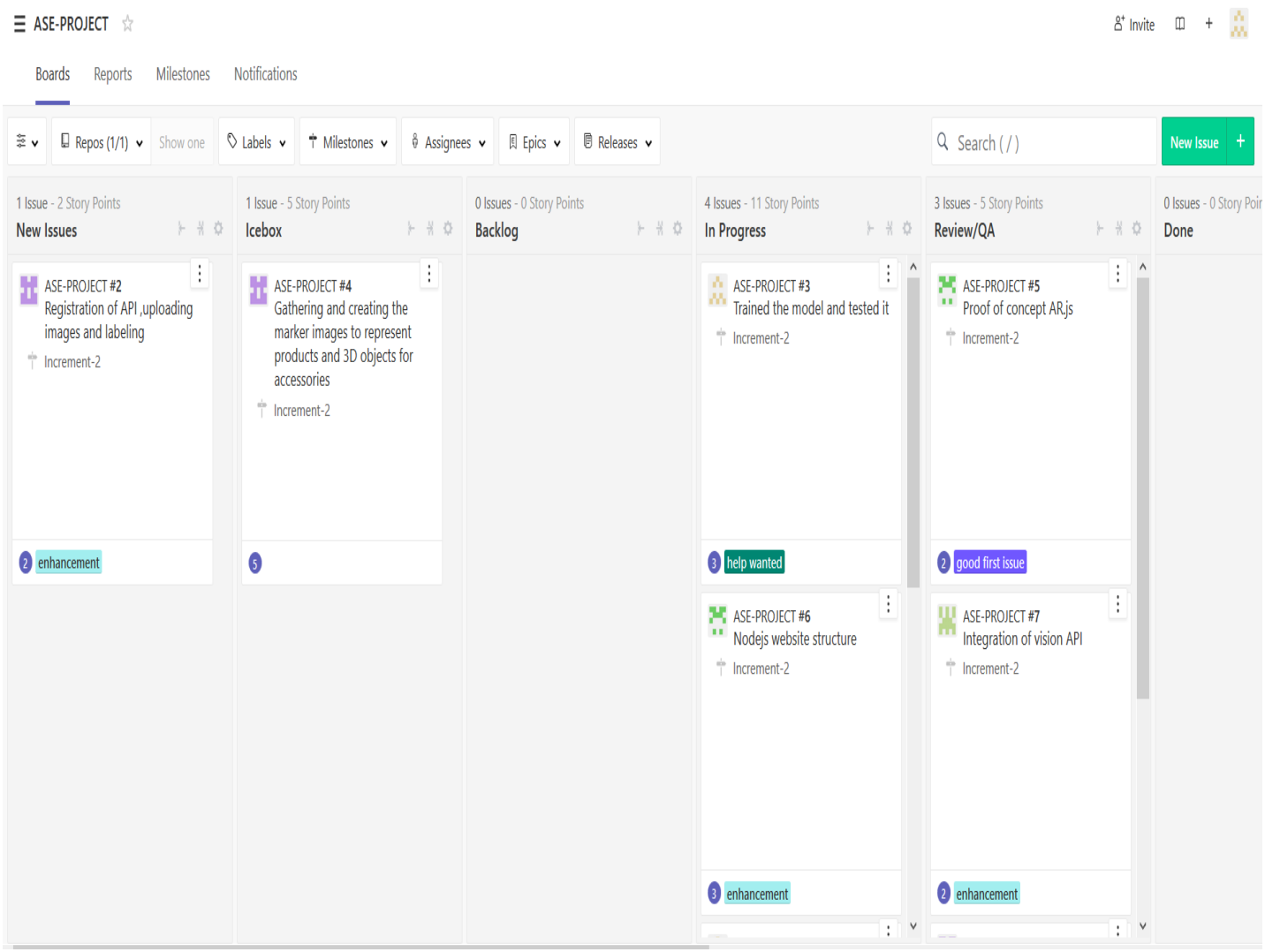
Increment 2:

Project Goal and Objectives

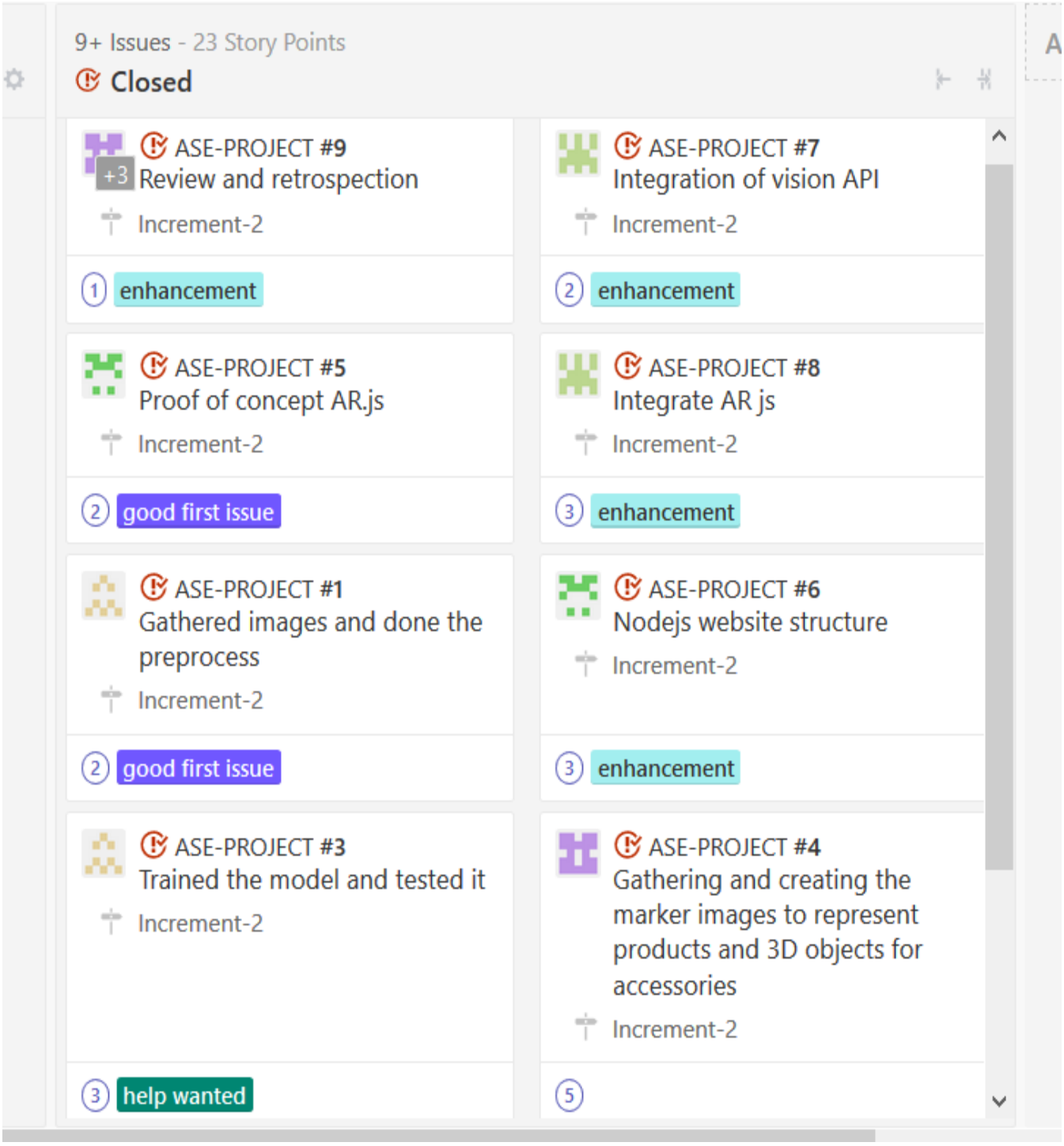
The user should be able to scan the surrounding using his phone or laptop camera. If user finds laptop or phone then our application will detect it and send display its accessories. Then user can click on the accessories and navigate to respective ecommerce page for purchase.

Specific Goal

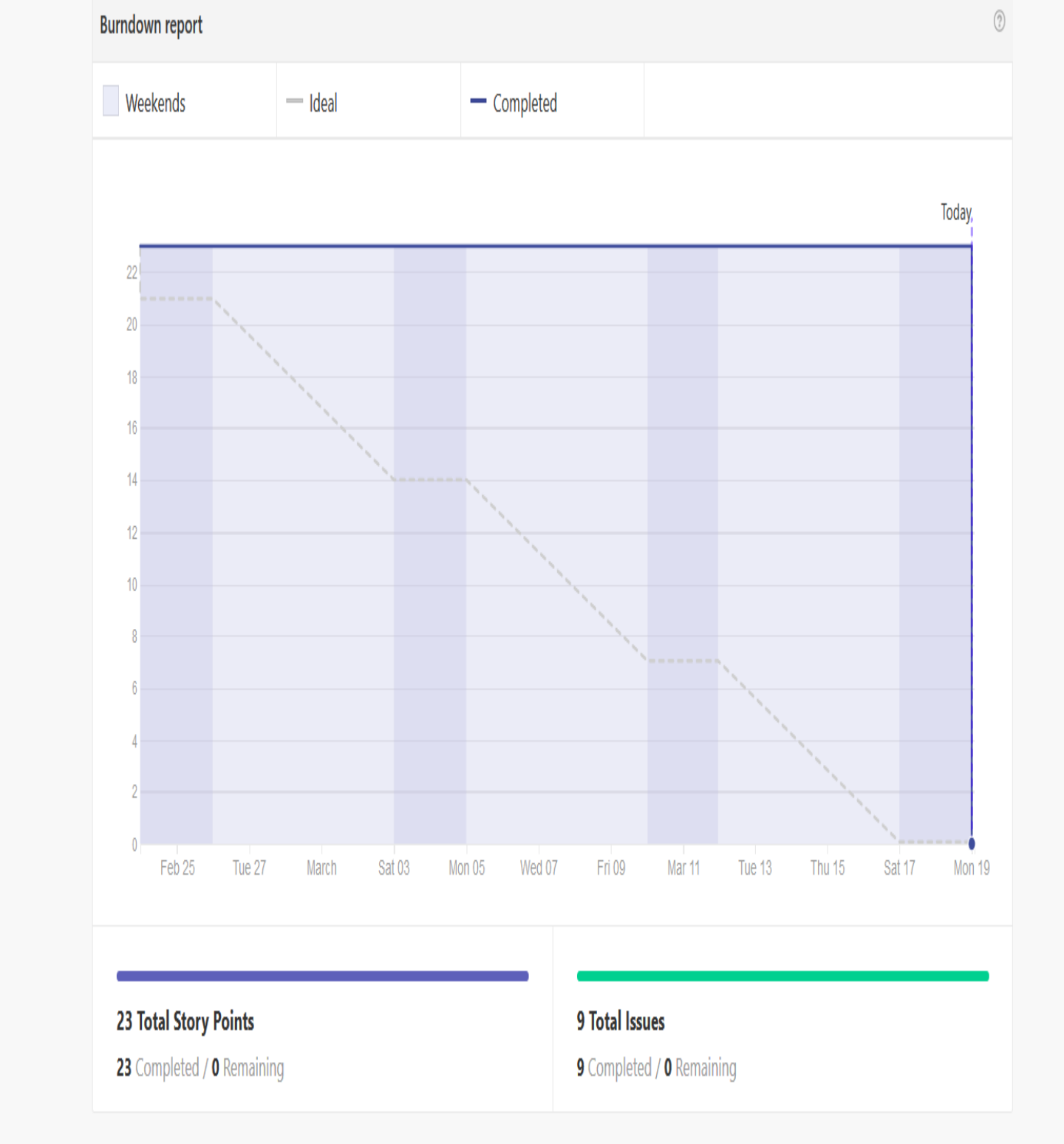
Zenhub issues



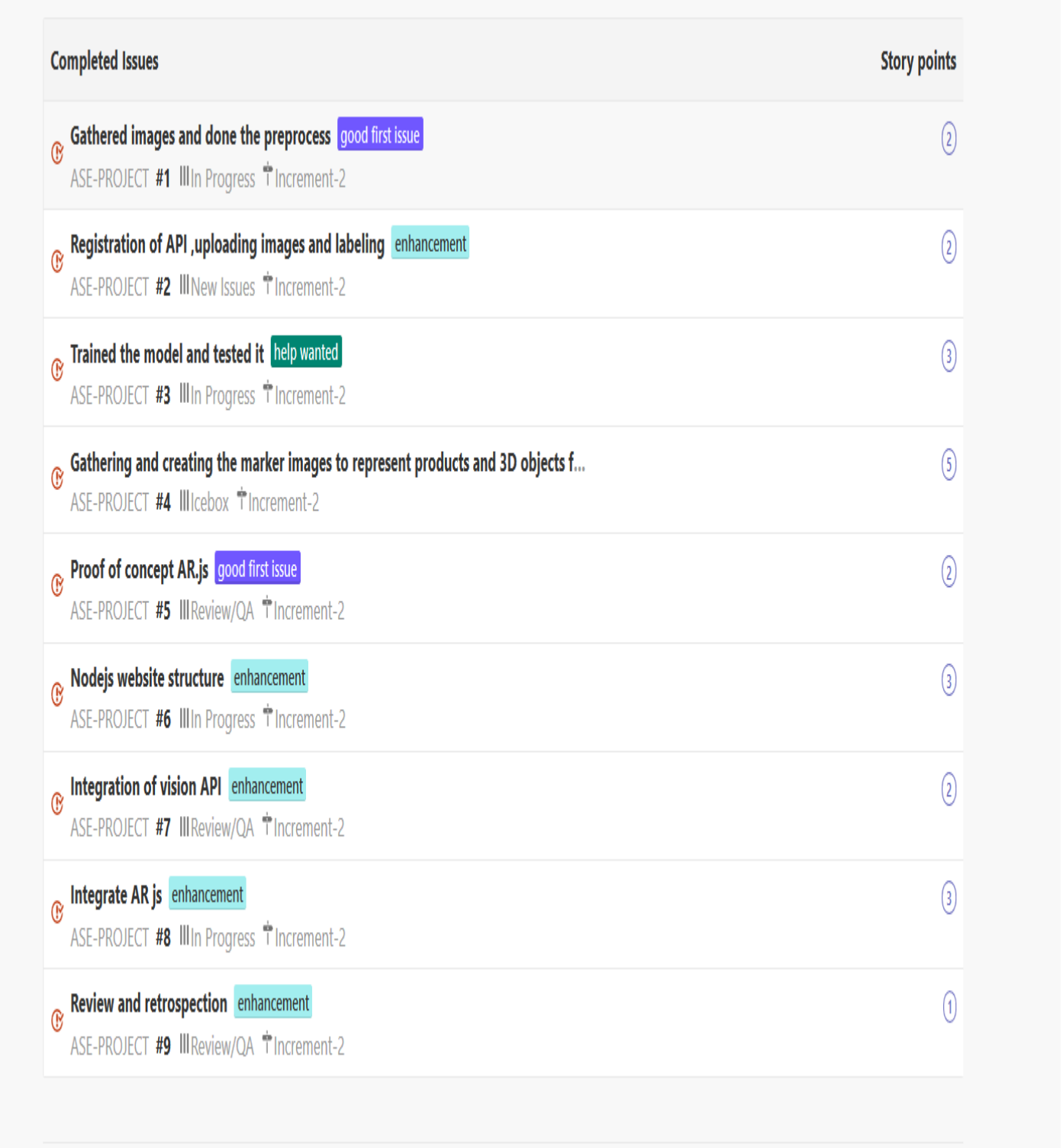
Zenhub closed issues



Zenhub burndown chart



Zenhub issuess after burndown



Detect laptop or phone and Display their accessories.

Existing Services/REST API Used

PowerAI Vision

This IBM api/environment helps us apply deep learning to create trained models based on images that we upload and label. We train, deploy, and test a new object detection model. With this pattern, we use deep learning training to create a model for object detection. PowerAI Vision presents REST APIs for inference operations. We can use any REST client for object detection with our custom model, and can use PowerAI Vision UI to test it initially. In summary we do the following:

1. Create a dataset for object detection with PowerAI Vision
2. Train and deploy a model based on the dataset
3. Invoke the model using REST calls

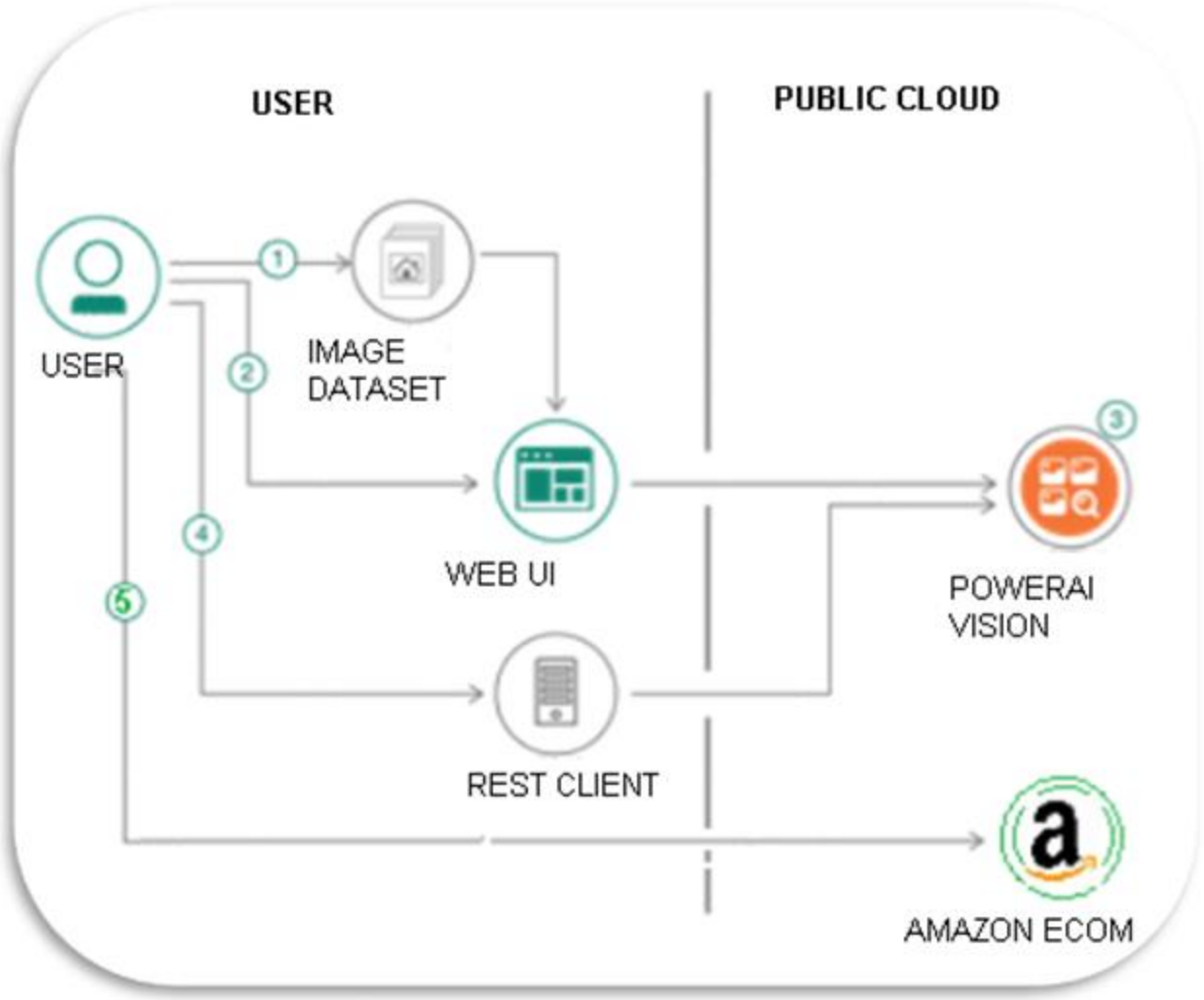
Open SSL:

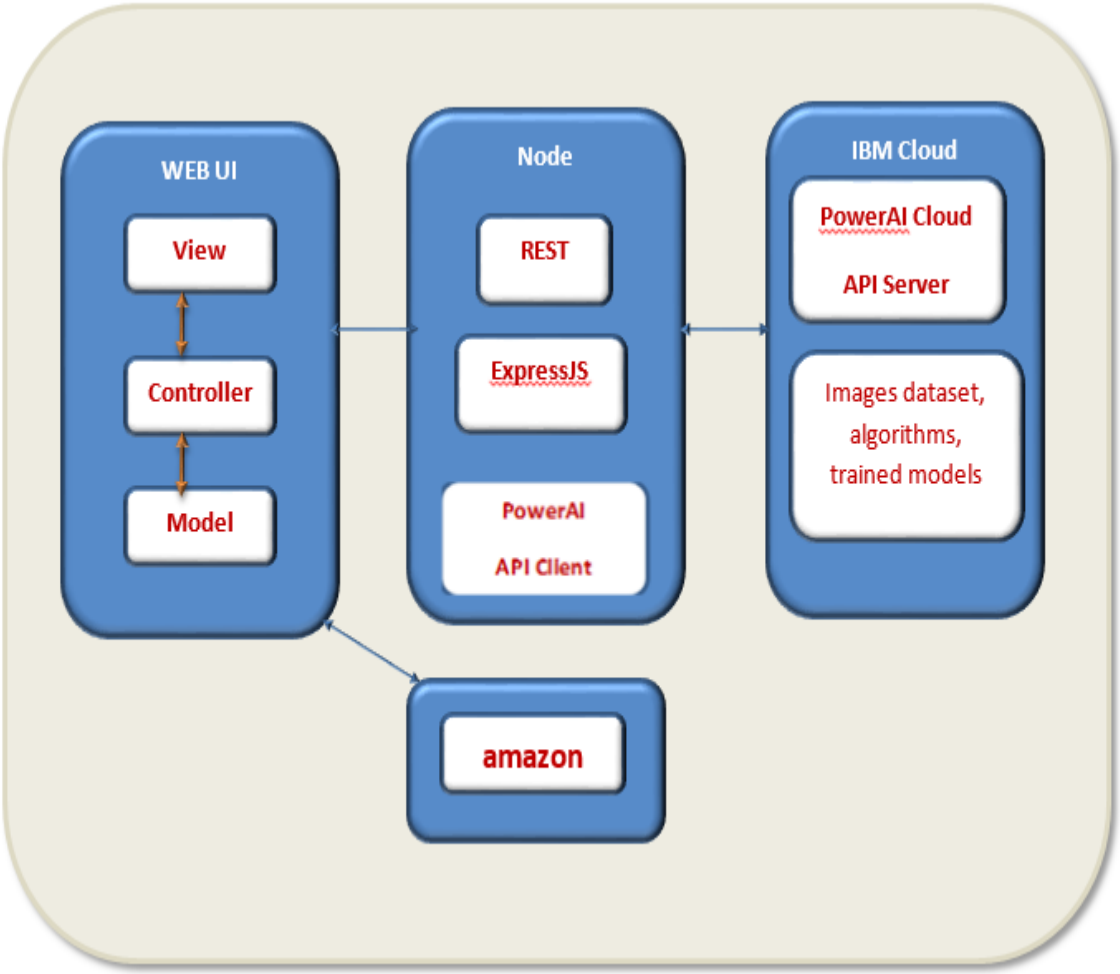
OpenSSL is a robust, commercial-grade, and full-featured toolkit for the Transport Layer Security (TLS) and Secure Sockets Layer (SSL) protocols. It is also a general-purpose cryptography library. We generate private/public key pair and SSL certificates using this library/tool. It is mandatory to have https for the web site so as to access it from chrome browser of android smart phones.

AR.js

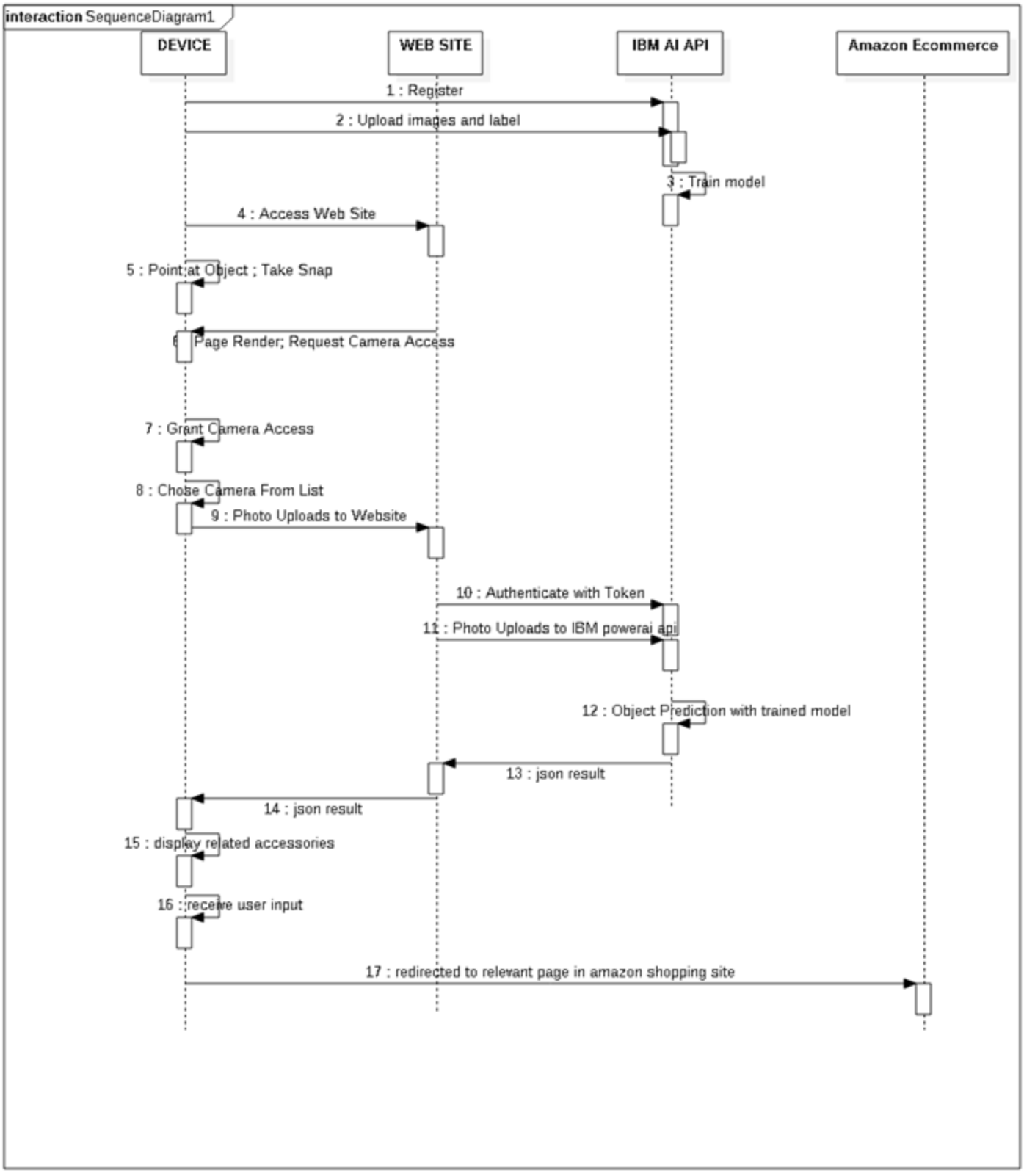
Efficient Augmented Reality for the Web is made possible through the AR.js javascript framework. This library/api is based on: i. three.js - 3d on the web. ii. artoolkit! - augmented reality

Architechture Diagram


USER
PUBLIC CLOUD
USER
IMAGE
DATASET
WEB UI
POWERAI
VISION
REST CLIENT
AMAZON ECOM
1
2
3
4
5



Sequence Diagram


interaction SequenceDiagram1
DEVICE
WEB SITE
IBM AI API
Amazon Ecommerce
1 : Register
2 : Upload images and label
3 : Train model
4 : Access Web Site
5 : Point at Object ; Take Snap
Page Render; Request Camera Access
7 : Grant Camera Access
8 : Chose Camera From List
9 : Photo Uploads to Website
10 : Authenticate with Token
11 : Photo Uploads to IBM powerai api
12 : Object Prediction with trained model
13 : json result
14 : json result
15 : display related accessories
16 : receive user input
17 : redirected to relevant page in amazon shopping site

Unit Testing

Every single application should be tested before the deployment to the server. Here, we will use Mocha as the test running framework, and Chai as the assertion library. User interface as well as functionality can be thoroughly tested. Media support detection, camera detection, multiple camera detection, image capture and upload, object detection, appropriate accessory display, navigation to ecommerce site are few of the subtasks that can be provided with unit tests.

###Example1: test.index.js

sample code

```
'use strict';
const chai = require('chai');
const expect = chai.expect;
const sinon = require('sinon');
require('jsdom-global')();
const indexjs = require('../../js/index');
describe('test index.js functions', function() {
  it('#addRow()', function(done) {
    const appendChild = sinon.spy();
    const mockTable = {
      appendChild: appendChild,
    };
    indexjs.addRow(mockTable, 'testType', ['a', 'b', 'c']);
    sinon.assert.calledOnce(appendChild);
    done();
  });
  it('#detectobject()', function(done) {
    const f = indexjs.text;
    expect(f('sample1.jpg')).to.equal('smartphone');
    expect(f('sample2.jpg')).to.equal('laptop');
    expect(f('sample3.jpg')).to.equal('niether');

    done();
  });
});
```

###Example2: rendering-test.js

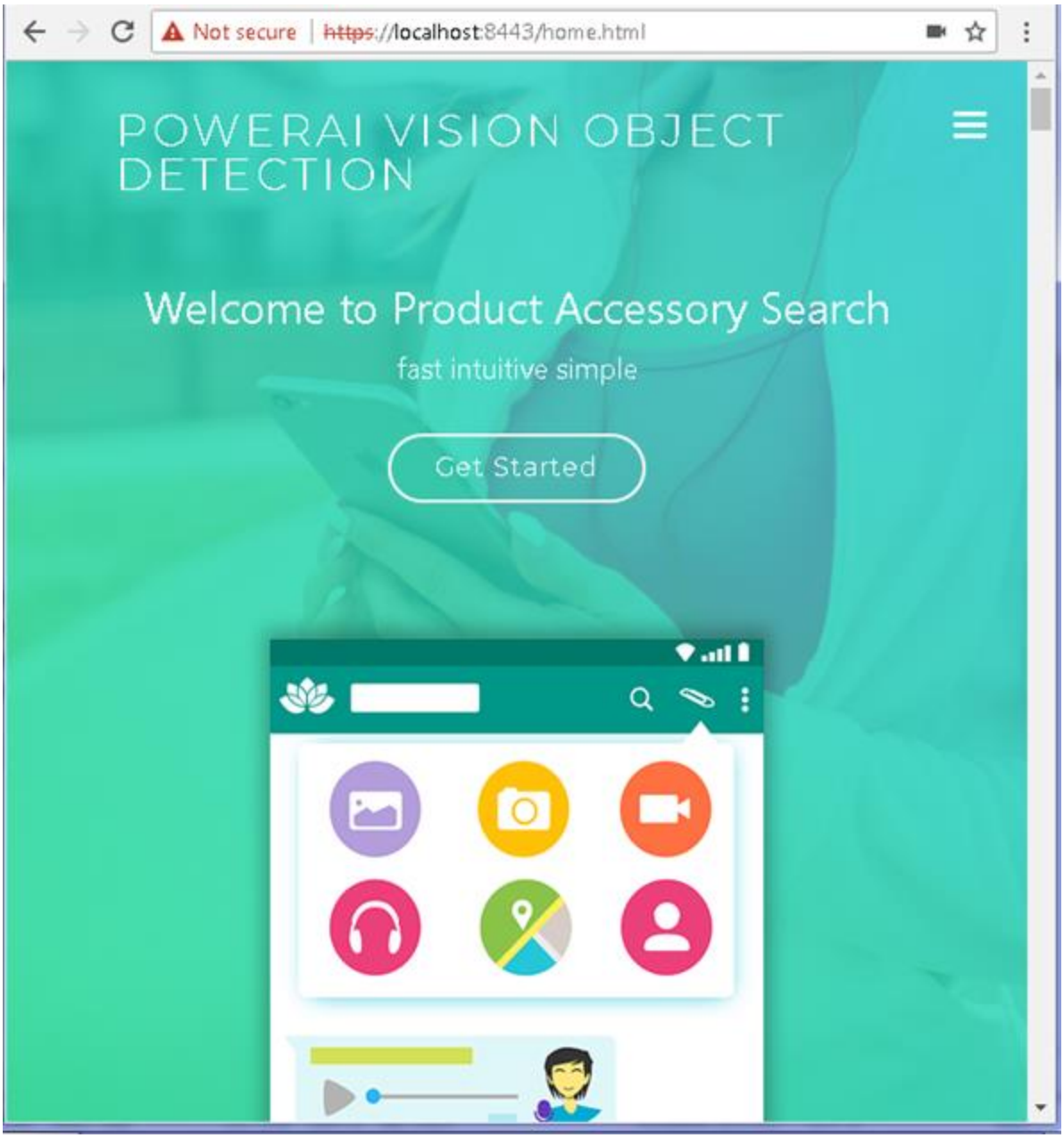
sample code

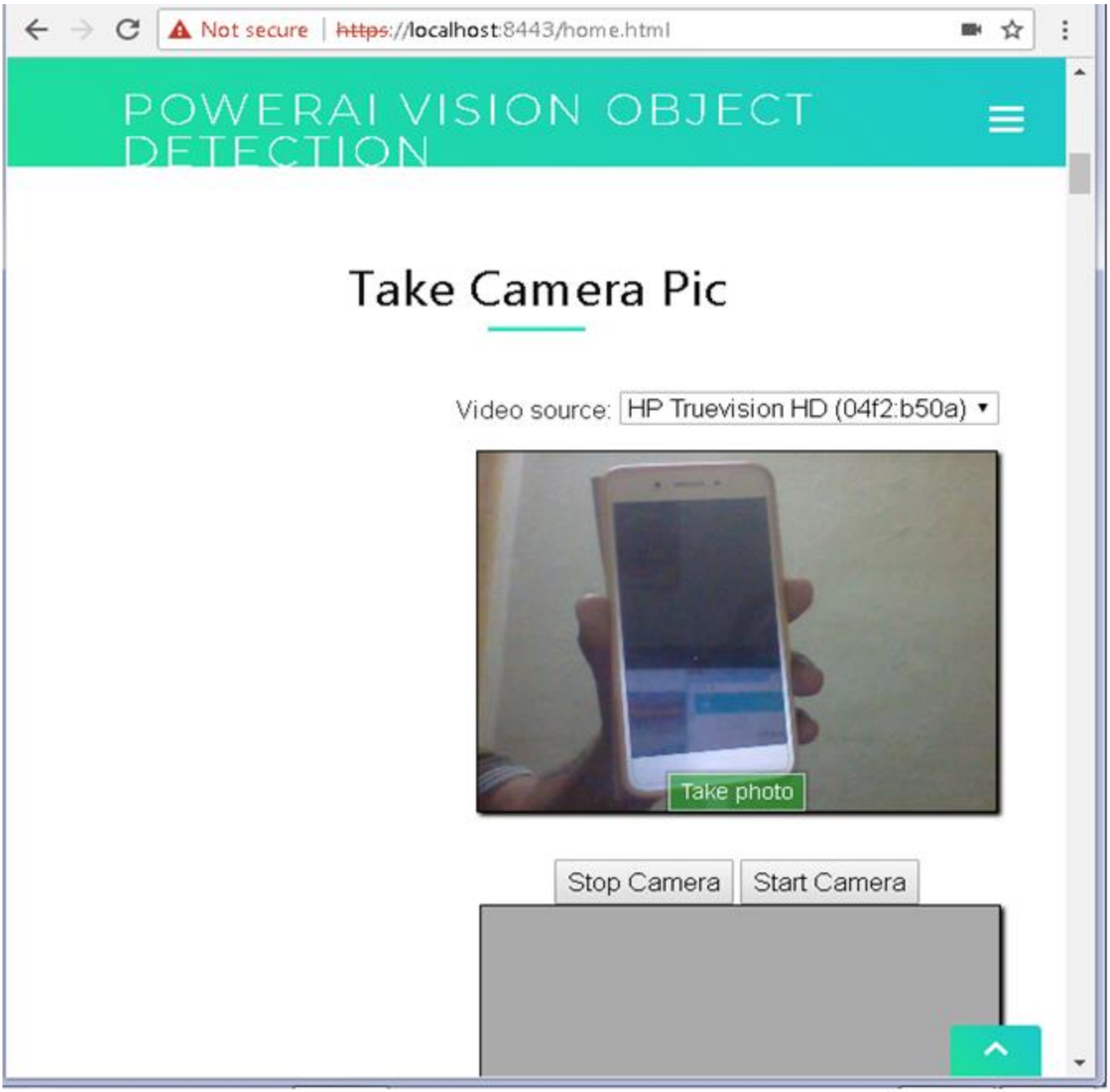
```
var viewportSize = {
  width: 640,
  height: 360,
}
// var viewportSize = {
//  width: 360,
//  height: 640,
// }
browser.setViewportSize(viewportSize)

describe('AR.js test', function() {
  it(`rendering-three.js-artookit-${viewportSize.width}x${viewport
    var pageURL = '/three.js/examples/test-runner.html#artoolkit'
    browser.url(pageURL)
    browser.checkViewport()
  })
```

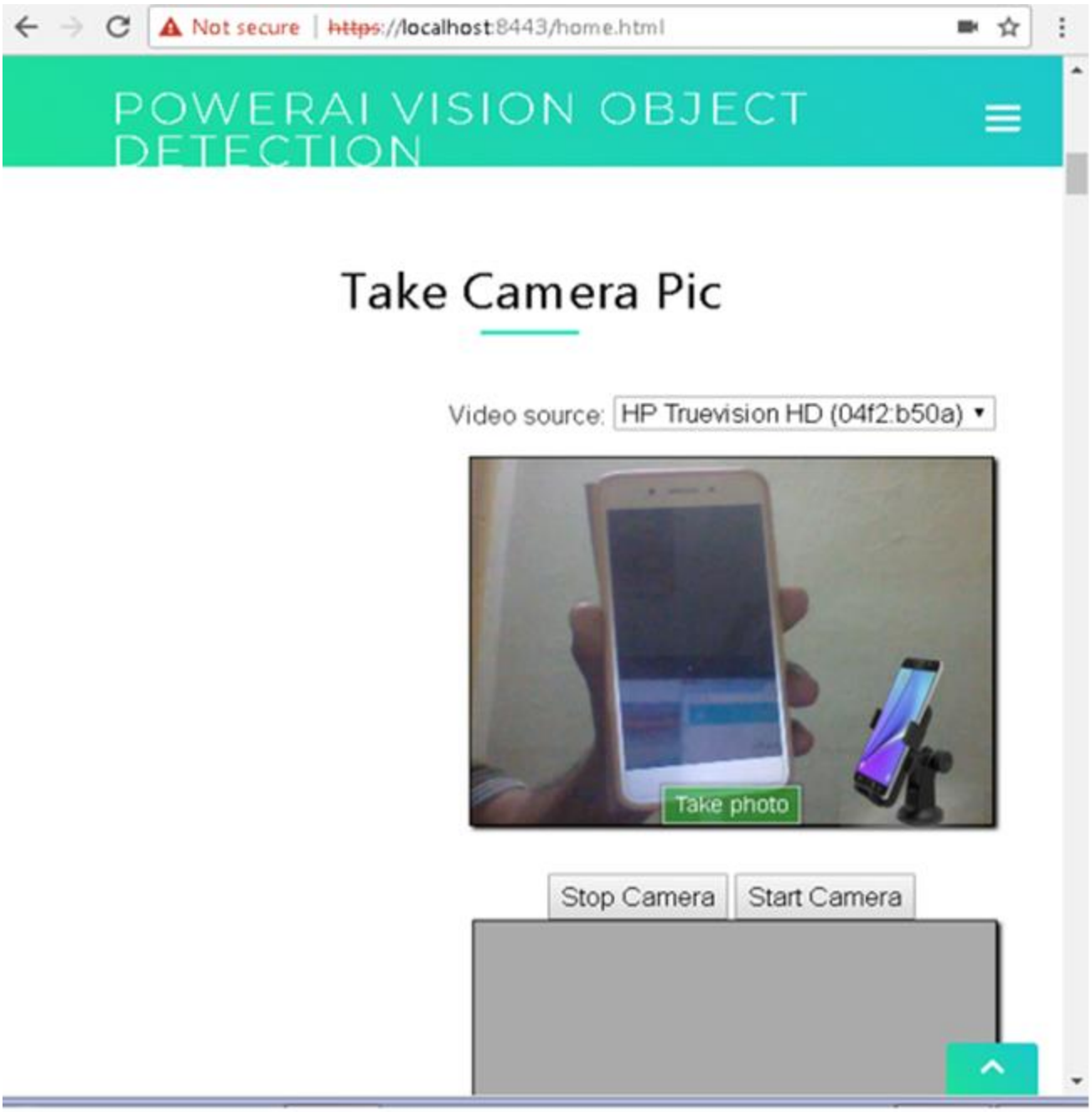
Implementation

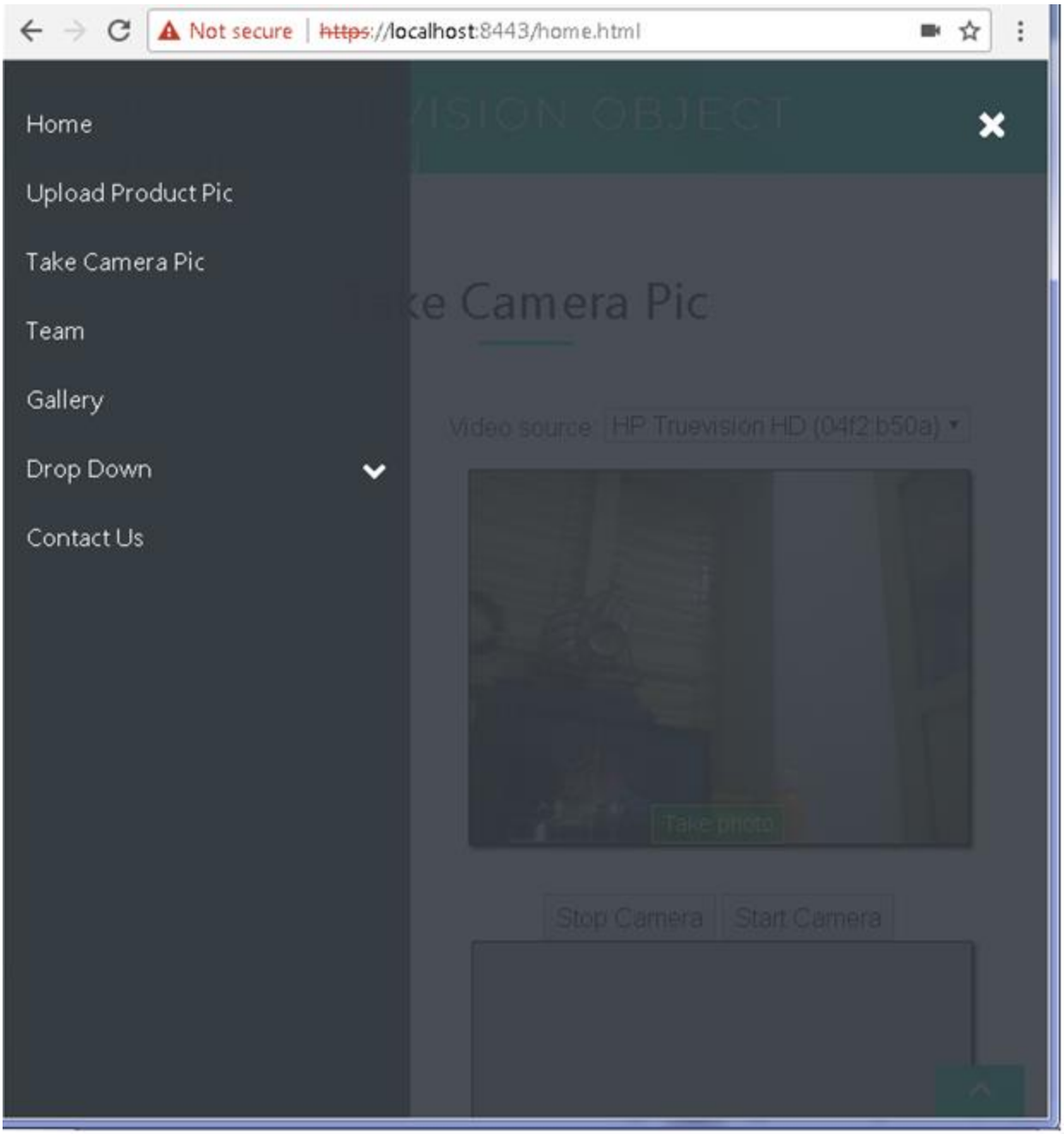
Device independent mobile friendly web application is developed using nodejs and related js frameworks.

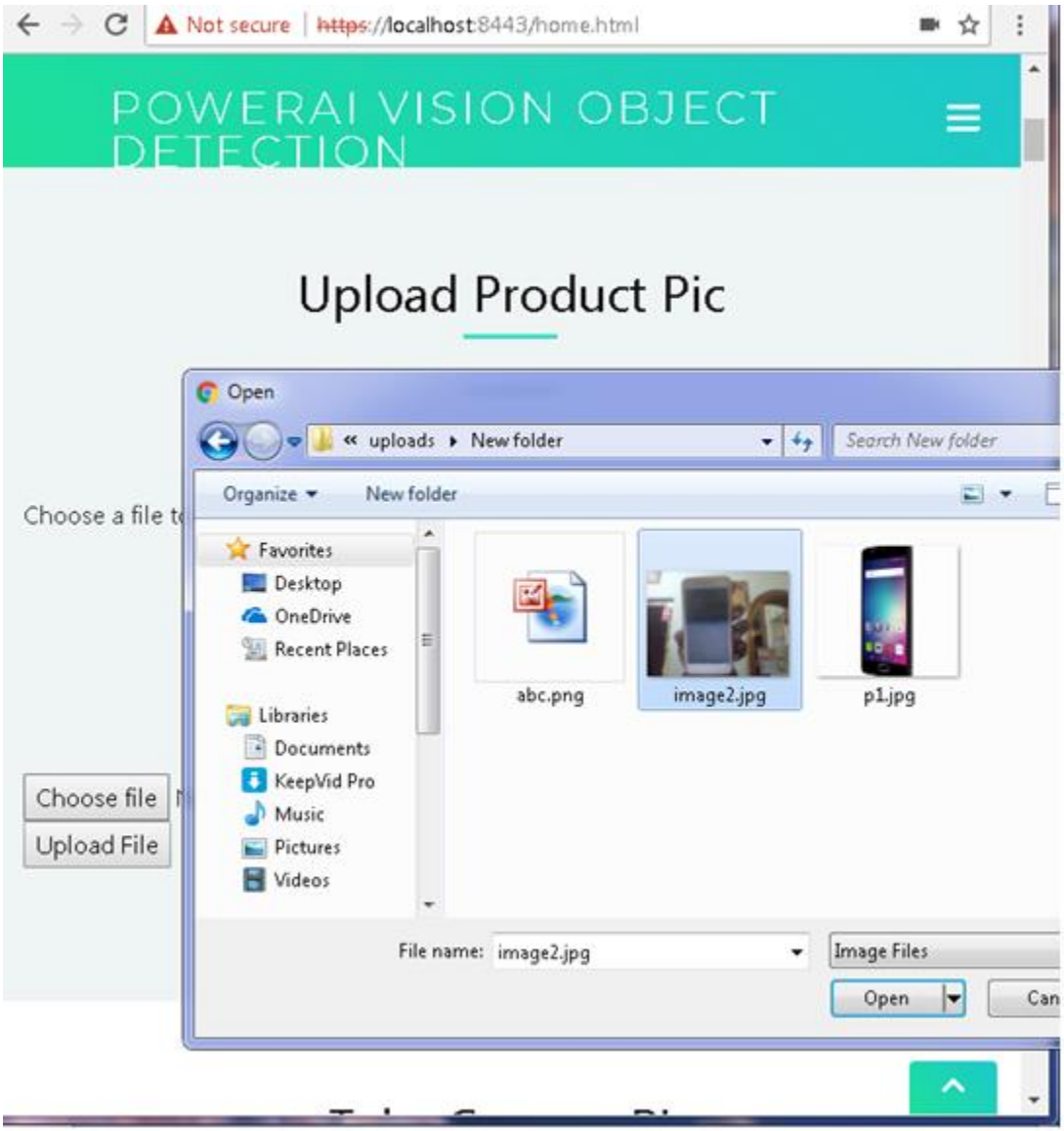
Deployed Application Screenshots

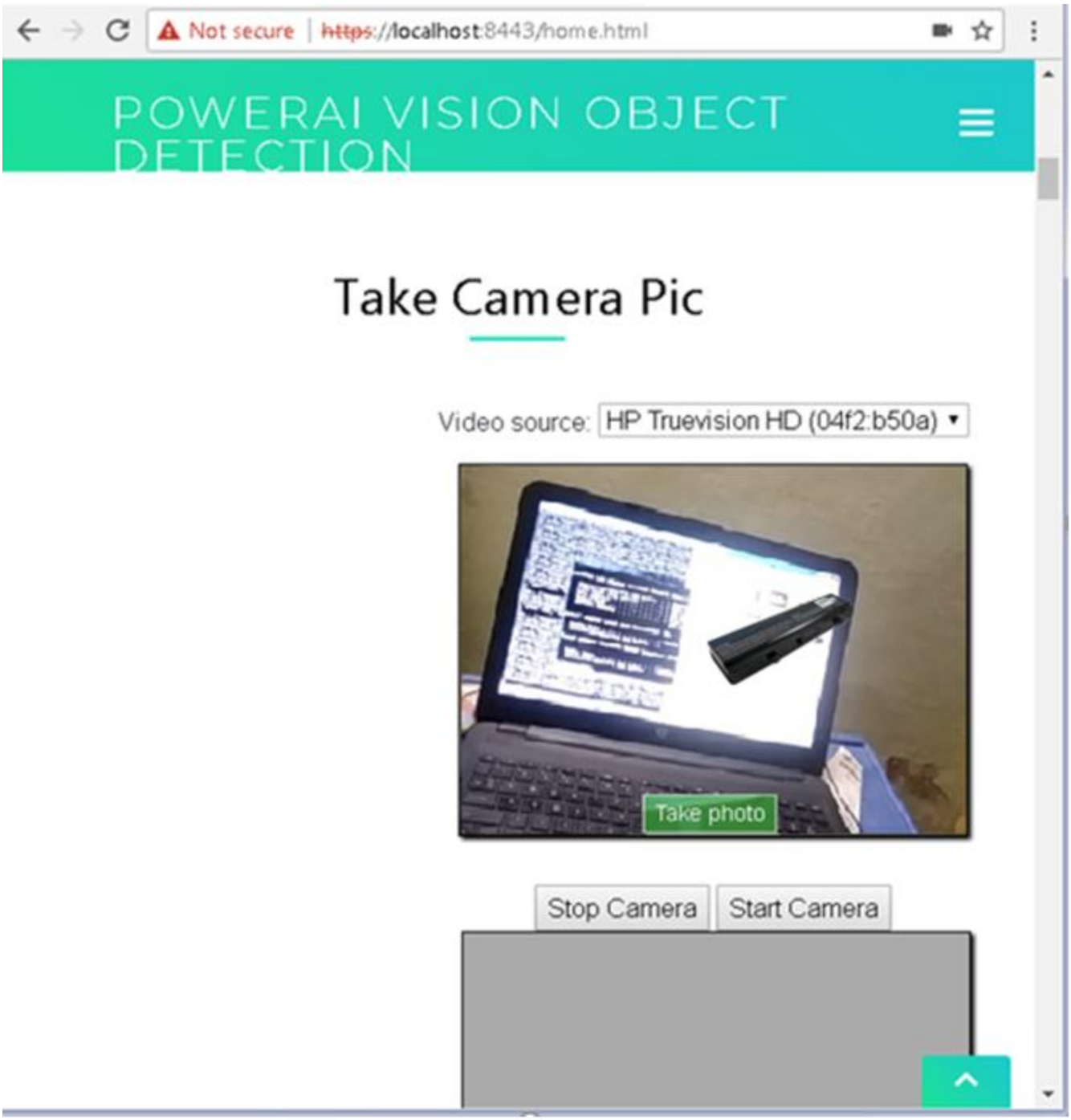

Not secure
https://localhost:8443/home.html
POWERAI VISION OBJECT DETECTION
Welcome to Product Accessory Search
fast intuitive simple
Get Started


Not secure | https://localhost:8443/home.html
POWERAI VISION OBJECT DETECTION
Take Camera Pic
Video source: HP Truevision HD (04f2:b50a)
Take photo
Stop Camera
Start Camera


Not secure | https://localhost:8443/home.html
POWERAI VISION OBJECT DETECTION
Take Camera Pic
Video source: HP Truevision HD (04f2:b50a)
Take photo
Stop Camera
Start Camera


Not secure
https://localhost:8443/home.html
Home
Upload Product Pic
Take Camera Pic
Team
Gallery
Drop Down
Contact Us
Camera Pic
Video source
HP Truevision HD (04f2:b50a)
Take photo
Stop Camera
Start Camera


Not secure
https://localhost:8443/home.html
POWERAI VISION OBJECT DETECTION
Upload Product Pic
Choose a file t
Choose file
Upload File
Open
uploads ▸ New folder
Search New folder
Organize
New folder
Favorites
Desktop
OneDrive
Recent Places
Libraries
Documents
KeepVid Pro
Music
Pictures
Videos
abc.png
image2.jpg
p1.jpg
File name: image2.jpg
Image Files
Open
Can



Project Management:

Description

AI API

We chose the IBM PowerAI Vision API for object detection in our project as it gives us scope to experience the typical work flow of machine learning i.e preprocessing dataset, training, validation and predicting;

We uploaded and captioned twenty pictures each of smartphones and laptops. We then trained the model and tested the prediction accuracy of the model.

AR for Web

We used AR.js to build the initial code base necessary for presenting different accessories relative to the product. We used a couple of markers to indicate the two target objects needed to be detected.

We were able to successfully place/overlay a 3d object (iphone case - mdl) when first marker is detected on screen and a laptop charger when second marker was used.

Object detection,

We captured the frame from the camera and uploaded it to powerai vision api through nodejs site. We were able to receive the json output and parse it.

Responsibility (Task, Person)

Sno	Task	Person
1	Gather Images and Preprocess	Madhukar
2	Register API, Upload images and label.	gani
3	Train model and test it.	Madhukar
4	Gather/Create marker images to represent products & 3d objects for accessories	gani
5	Proof of concept AR.js	chaitanya
6	Nodejs website structure	Chaitanya
7	Integrate Vision api	Teja
8	Integrate AR.js	Teja

Contribution

Contributions (members/percentage)

Member	Percentage
Md Usman Gani Syed Syed	40
Madhukar Reddy Vuradi	20
Chaitanya Sailesh Tondepu	20
Teja kunisetty	20

Work to be completed

Description

Accessory selection and ecommerce redirect We need to receive user input and redirect to the relevant ecommerce web page.

Integration We need to refactor and ensure work-flow

Testing & UI

We need to test and make cosmetic changes for better user experience.

Increment 3:

Our First Objective

Receive large amount of users search data from twitter/fb/amazon and filter for the user's interests. If possible use webservises provided by third party to get user interests. Using this information, we will post an add on user facebook profile according to user's interest. If user search item is laptop, then we will post a laptop add on his profile. Now there is high probability that user might click the add as it is of his/her particular interest. Its an AR add. Lets say user is interested in buying stydy table, then the add will show how it looks upon installation at particular place.

Improvise objective

The user should be able to scan the surrounding using his phone or laptop camera. If user finds laptop or phone then our application will detect it and send display its accessories. Then user can click on the accessories and navigate to respective ecommerce page for purchase.

Final Objective

With the improvised objective, now user should also be getting recommended suggestions based on his accessories list.

Existing Services/REST API Used

PowerAI Vision

This IBM api/environment helps us apply deep learning to create trained models based on images that we upload and label. We train, deploy, and test a new object detection model. With this pattern, we use deep learning training to create a model for object detection. PowerAI Vision presents REST APIs for inference operations. We can use any REST client for object detection with our custom model, and can use PowerAI Vision UI to test it initially. In summary we do the following:

1. Create a dataset for object detection with PowerAI Vision
2. Train and deploy a model based on the dataset
3. Invoke the model using REST calls

Open SSL:

OpenSSL is a robust, commercial-grade, and full-featured toolkit for the Transport Layer Security (TLS) and Secure Sockets Layer (SSL) protocols. It is also a general-purpose cryptography library. We generate private/public key pair and SSL certificates using this library/tool. It is mandatory to have https for the web site so as to access it from chrome browser of android smart phones.

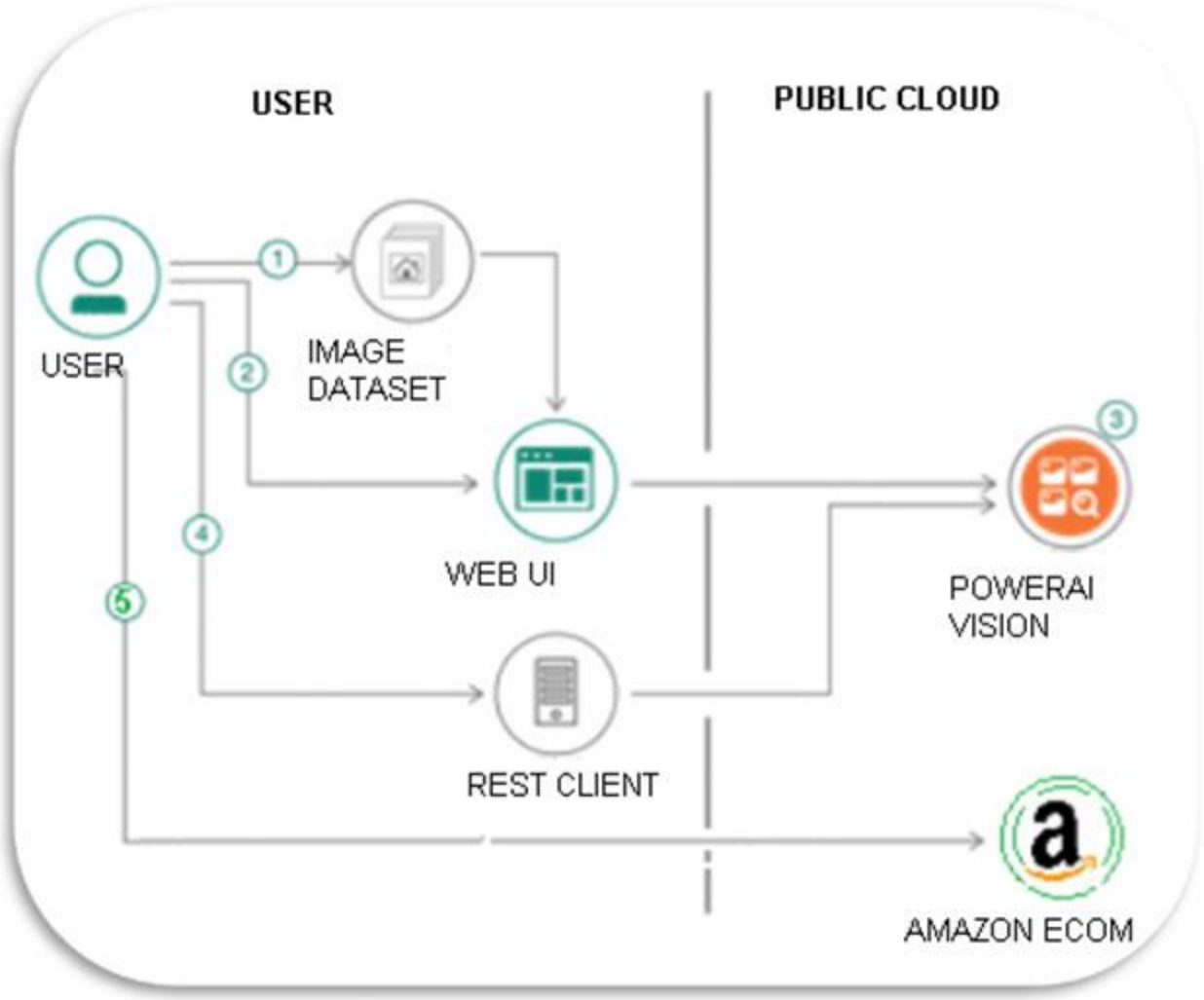
AR.js

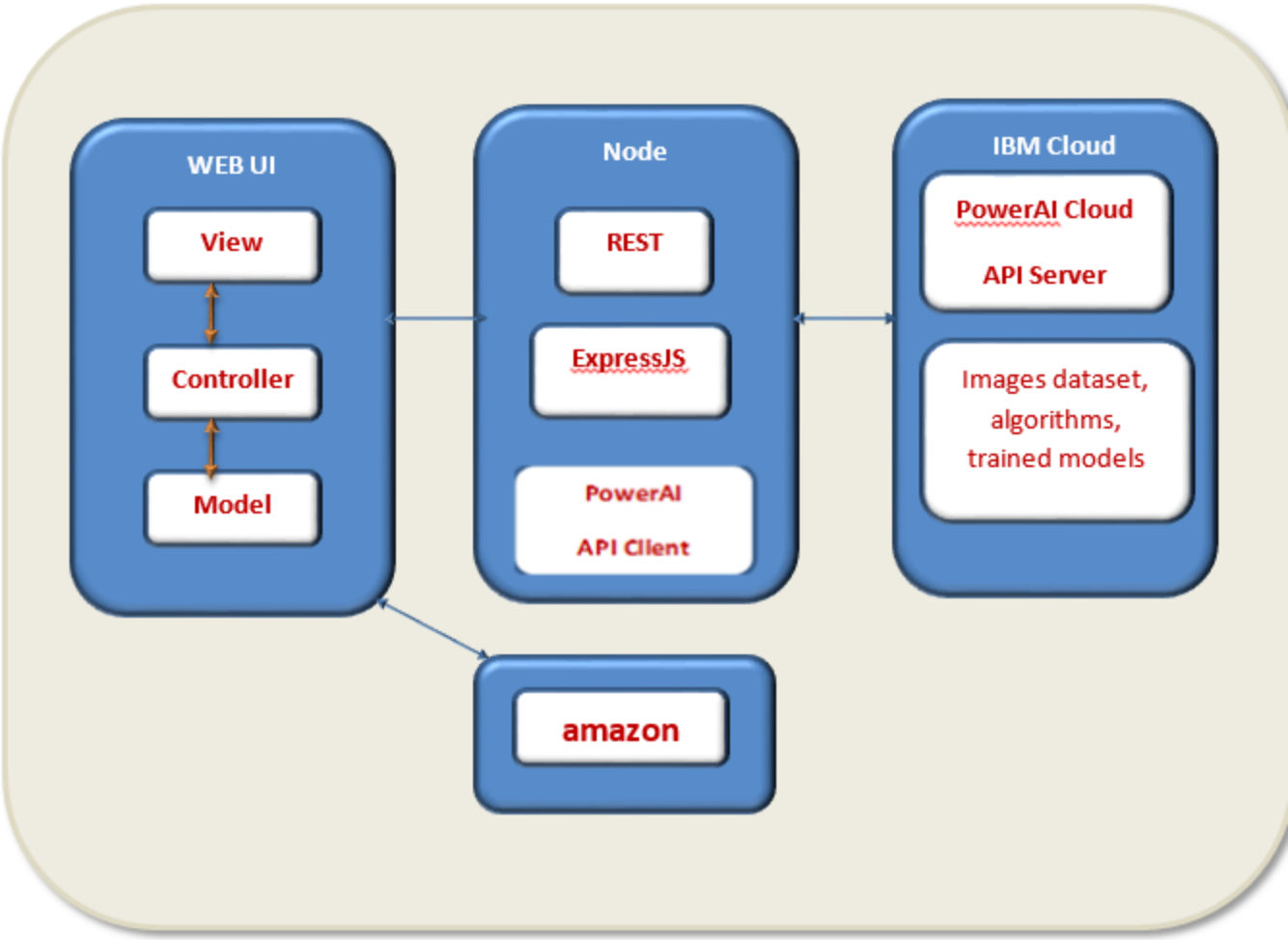
Efficient Augmented Reality for the Web is made possible through the AR.js javascript framework. This library/api is based on: i. three.js - 3d on the web. ii. artoolkit! - augmented reality

Similar Recommended products

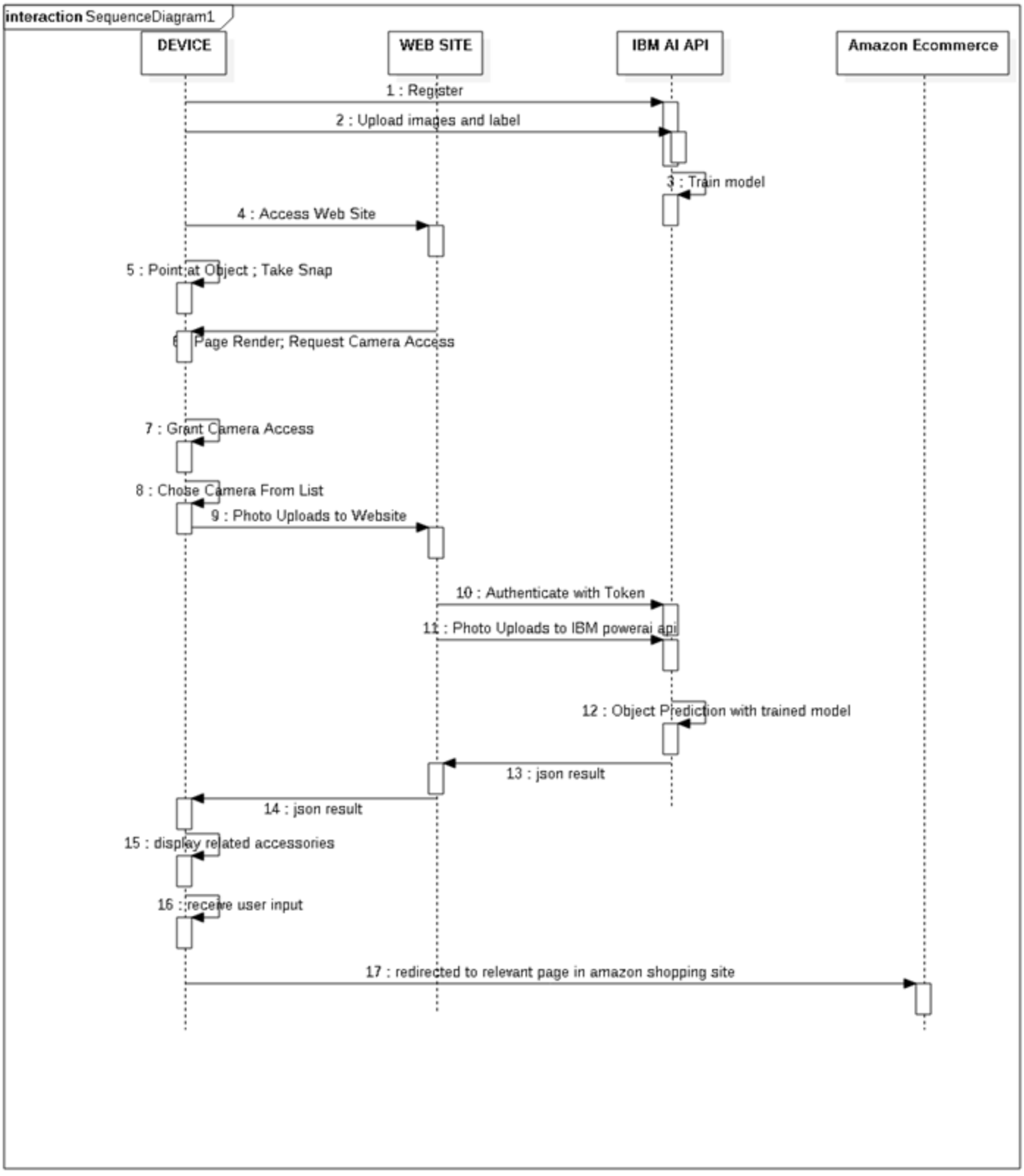
This api we have used to find the similar products http://webservices.amazon.com/onca/xml? Service=AWSECommerceService& AWSAccessKeyId=[AWS Access Key ID]& AssociateTag=[Associate ID]& Operation=SimilarityLookup&ItemId=ASIN1,ASIN2,ASIN3& SimilarityType=Random &Timestamp=2018-04-23T22:12:44Z] We have to provide the AWSAccessKeyId, AssociateTag and list of ItemIds for which we are searching similar items. The same api is used to search for the recommended items for both phone and laptop. Just we have to change the item ids.

Architechture Diagram


USER
PUBLIC CLOUD
USER
IMAGE
DATASET
WEB UI
POWERAI
VISION
REST CLIENT
AMAZON ECOM
1
2
3
4
5



Sequence Diagram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DEVICE
WEB SITE
IBM AI API
Amazon Ecommerce
1 : Register
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5 : Point at Object ; Take Snap
Page Render; Request Camera Access
7 : Grant Camera Access
8 : Chose Camera From List
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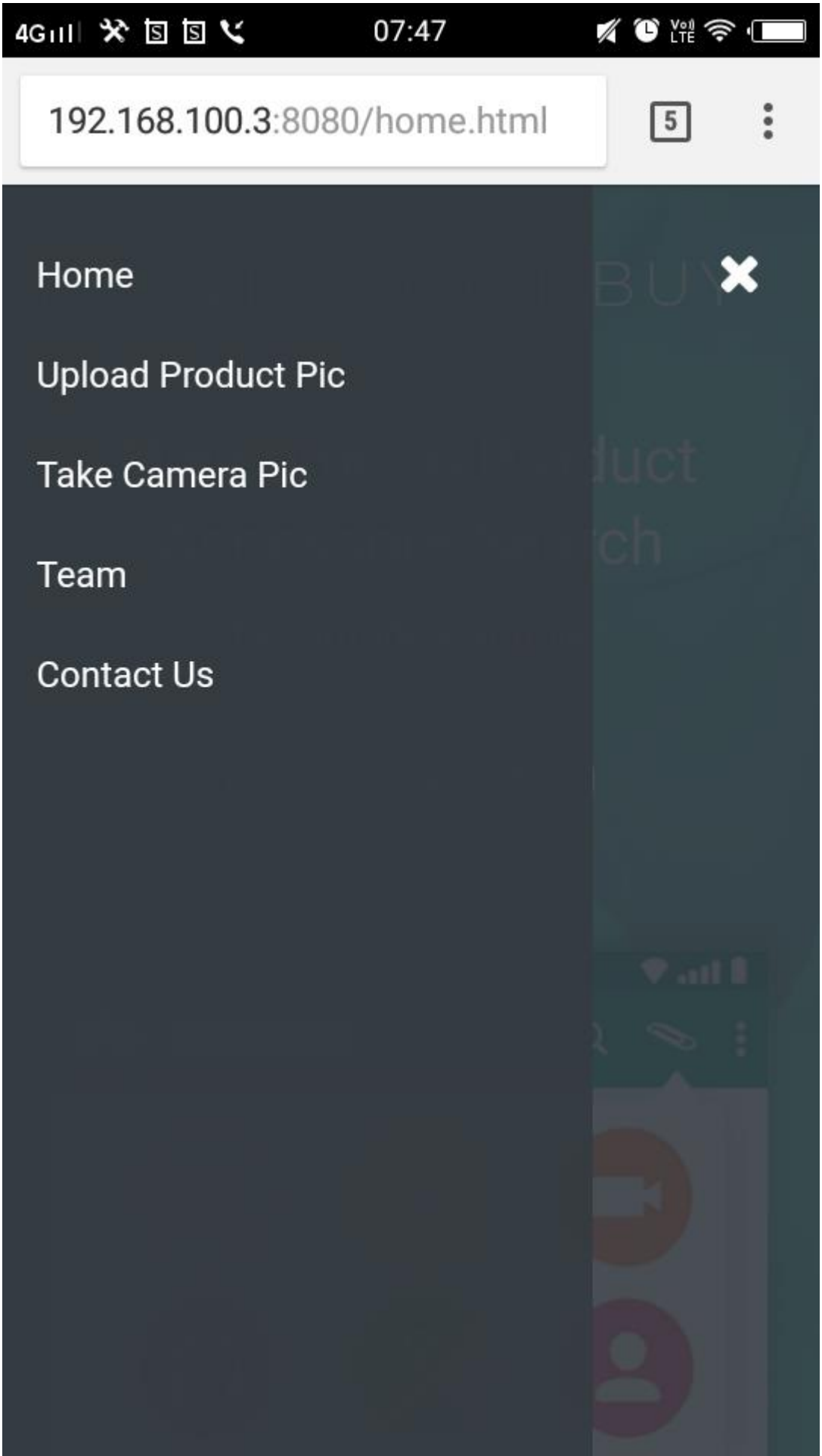
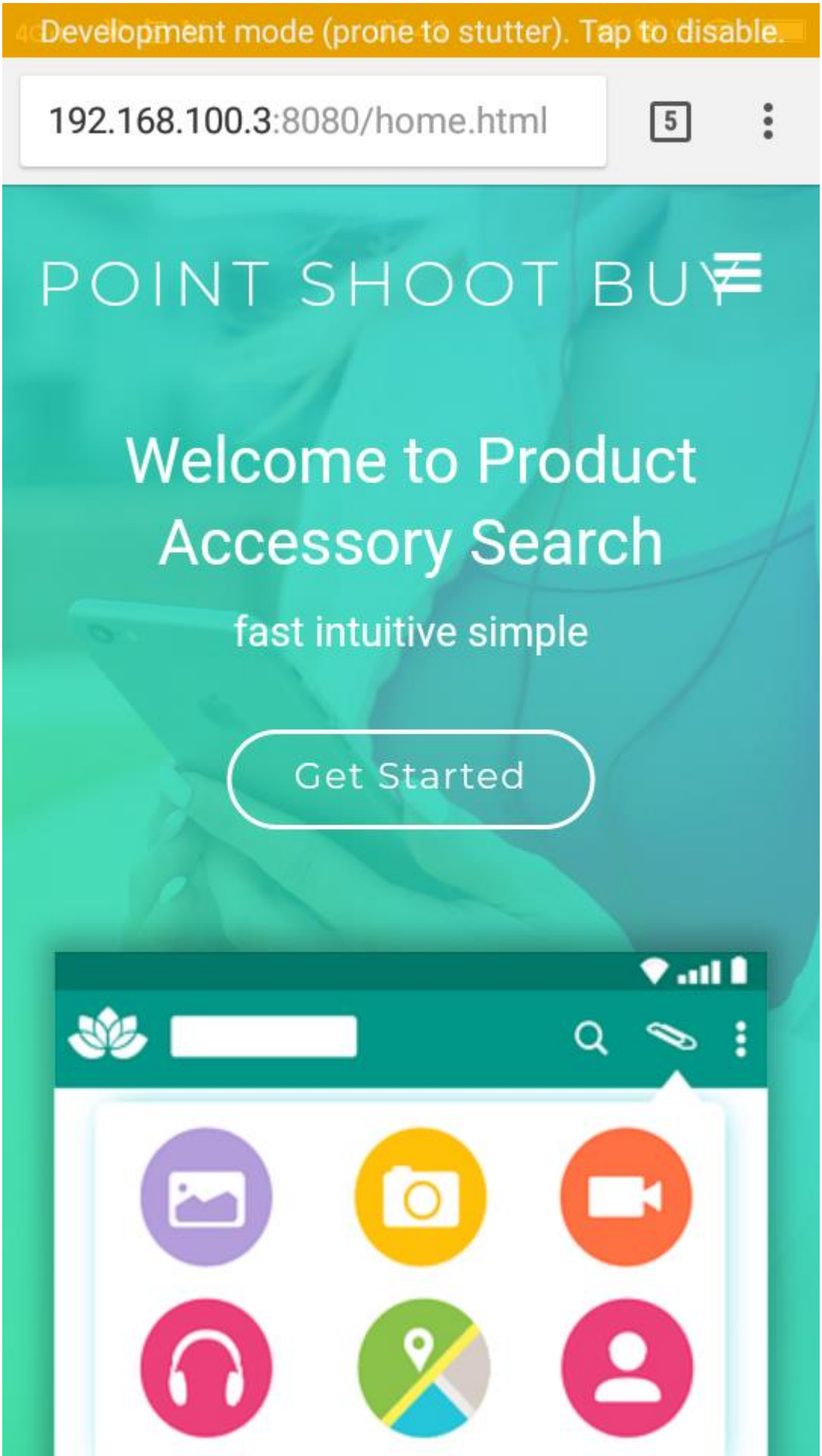
10 : Authenticate with Token
11 : Photo Uploads to IBM powerai api
12 : Object Prediction with trained model
13 : json result
14 : json result
15 : display related accessories
16 : receive user input
17 : redirected to relevant page in amazon shopping site

Implementation:

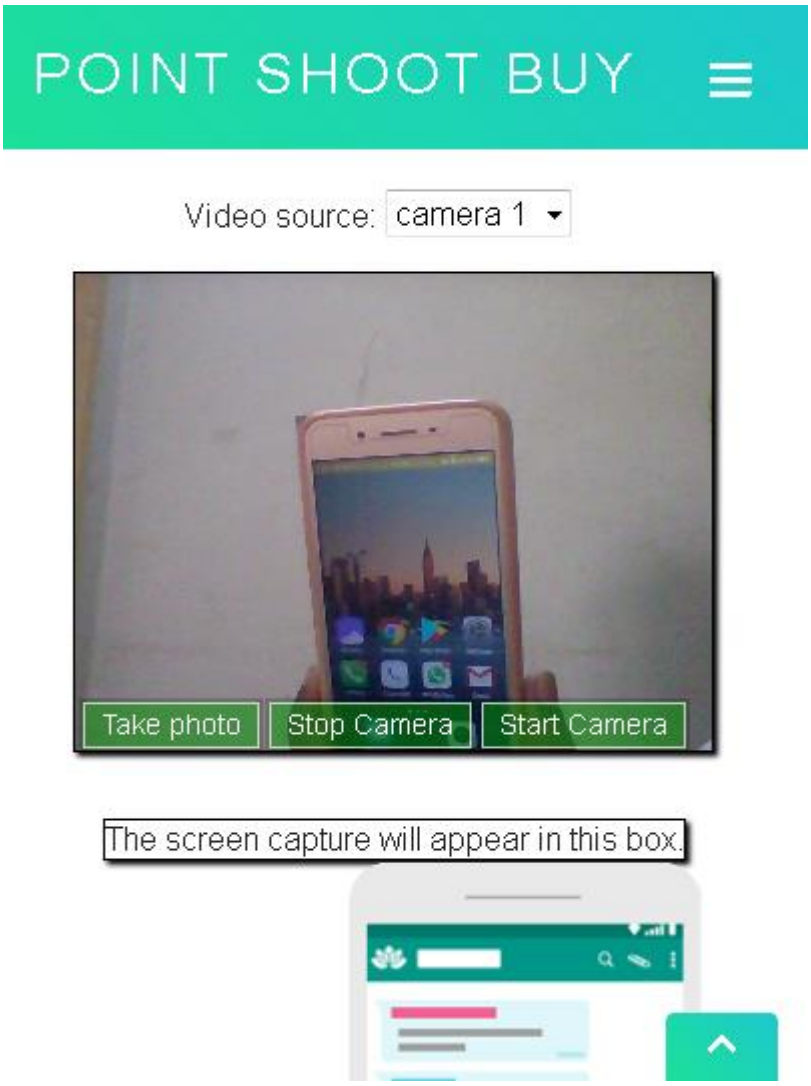
Host the product on the server and the home screen menu options looks like this on the side bar

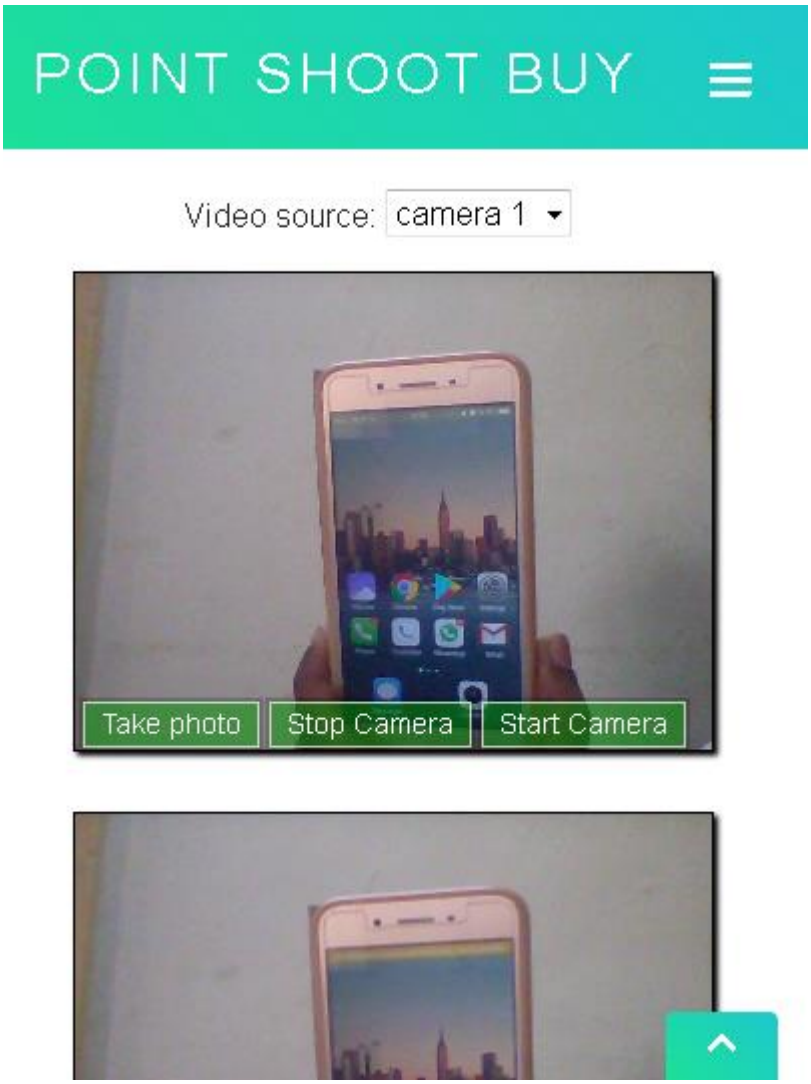

4G
07:47
192.168.100.3:8080/home.html
5
Home
Upload Product Pic
Take Camera Pic
Team
Contact Us

The home screen looks like this. We have cleaned the html page and now it looks better.

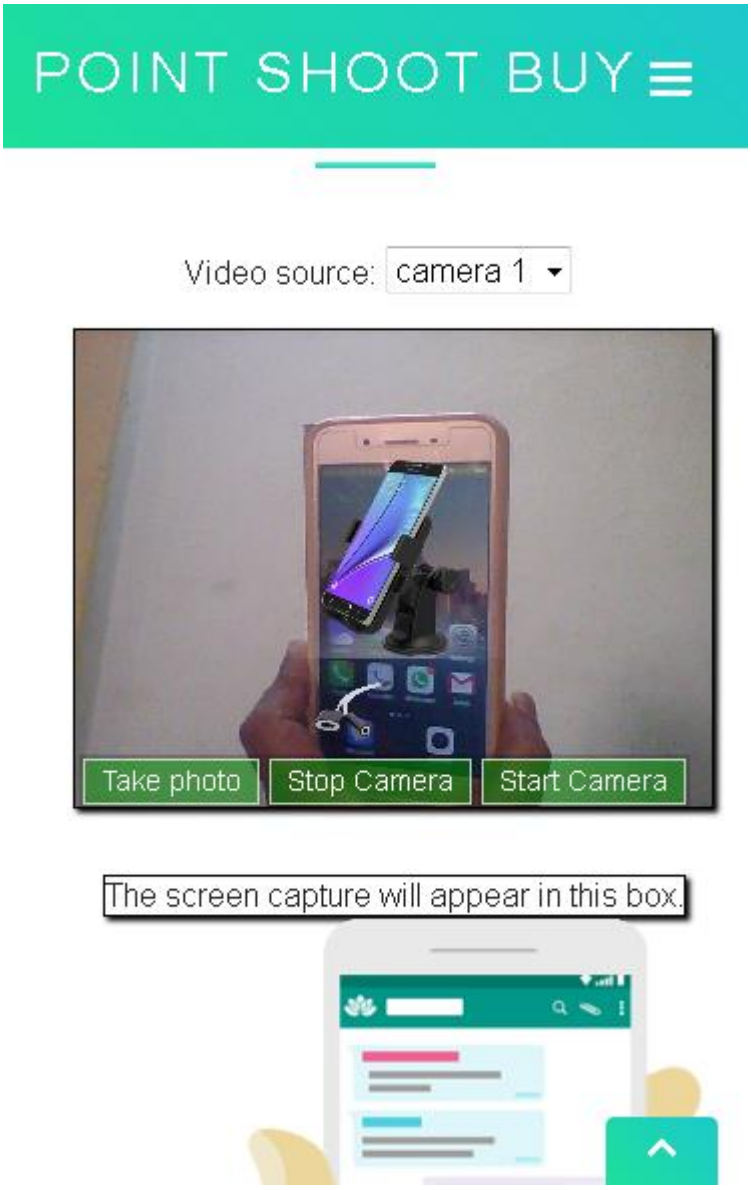

Development mode (prone to stutter). Tap to disable.
192.168.100.3:8080/home.html
5
POINT SHOOT BUY
Welcome to Product Accessory Search
fast intuitive simple
Get Started

once we click on the open camera option, the browser opens camera and scans the objects





After that the object, here phone will be detected and its corresponding accessories will be displayed



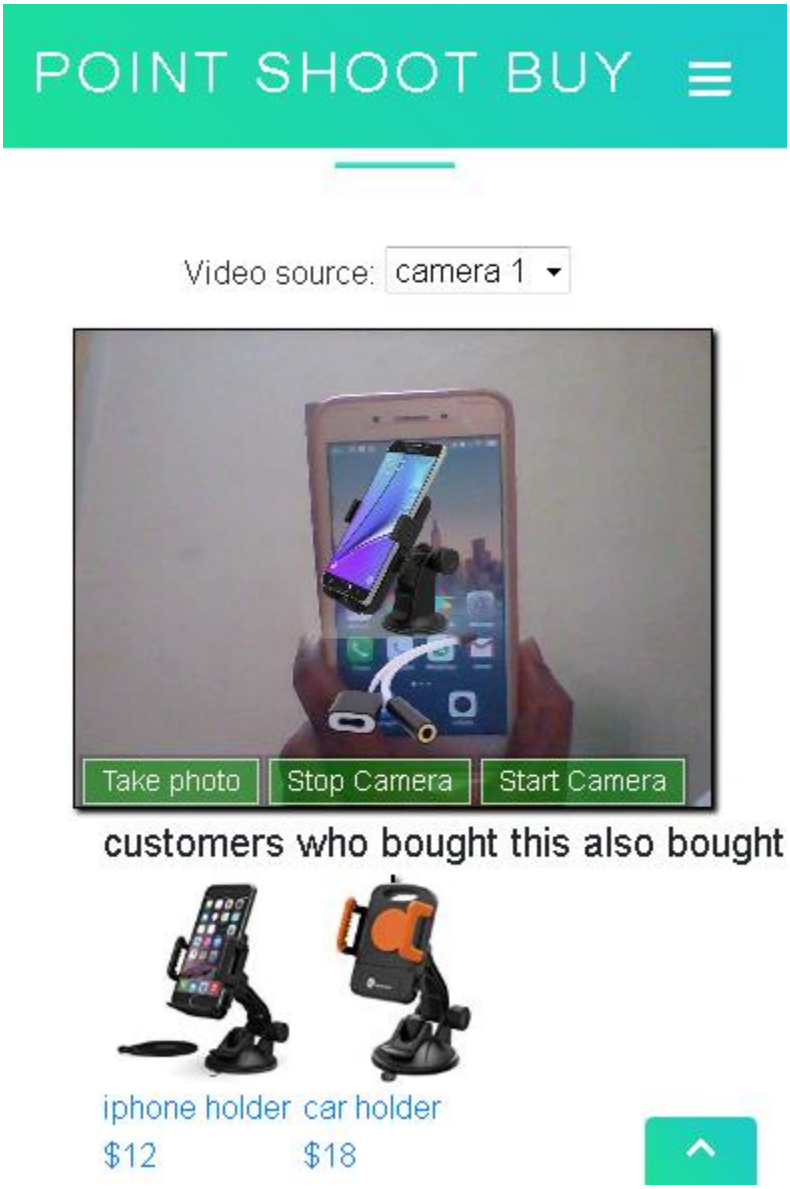
We are also displaying the recommended items. The UI screens of these recommended items are custom made. We make a rest call to amazon services and get the list of recommended items and their prices in the response. After that we add images and styles to that response and show in UI.

POINT SHOOT BUY

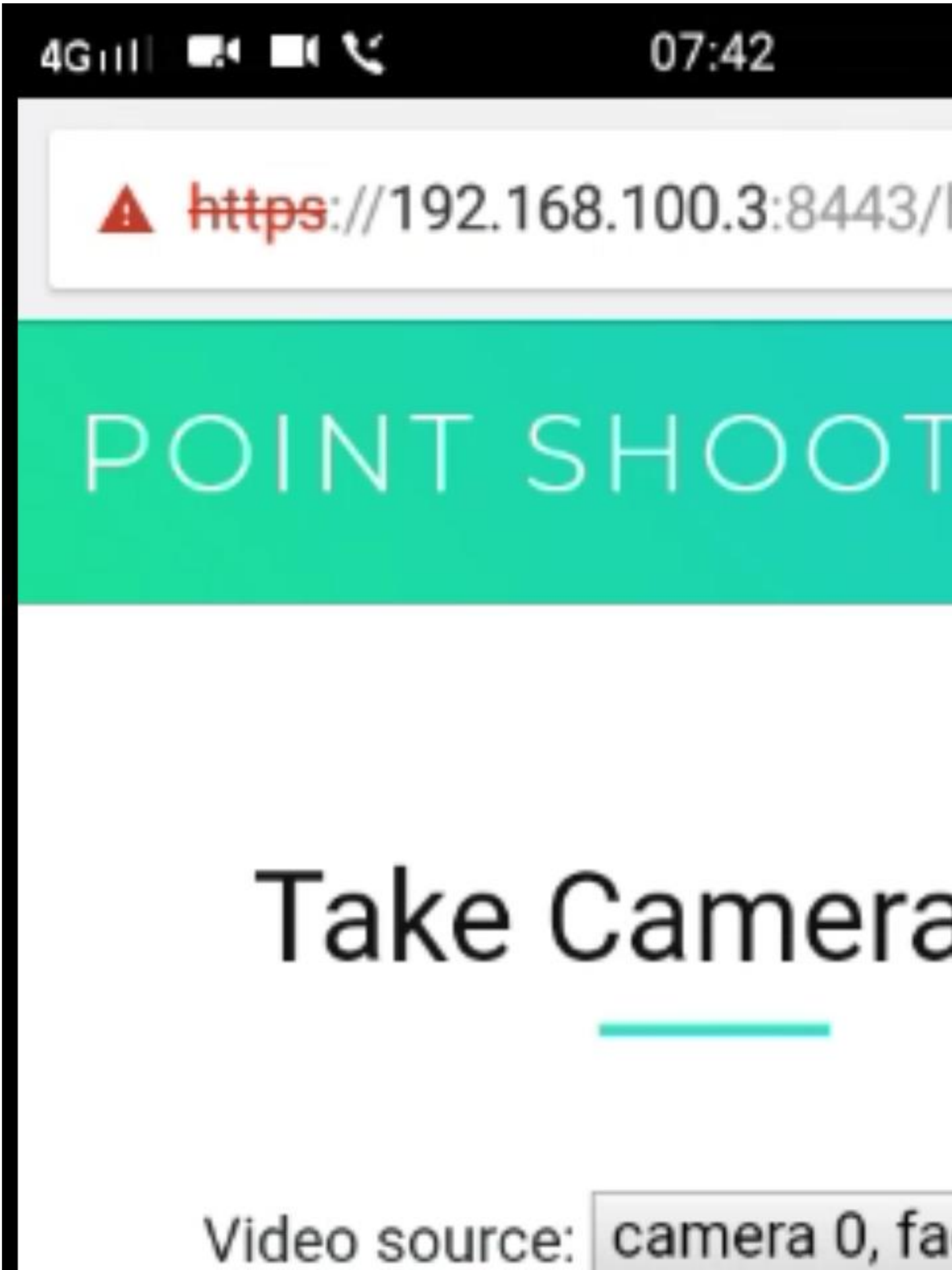
Take Camera Pic

Video source: camera 1

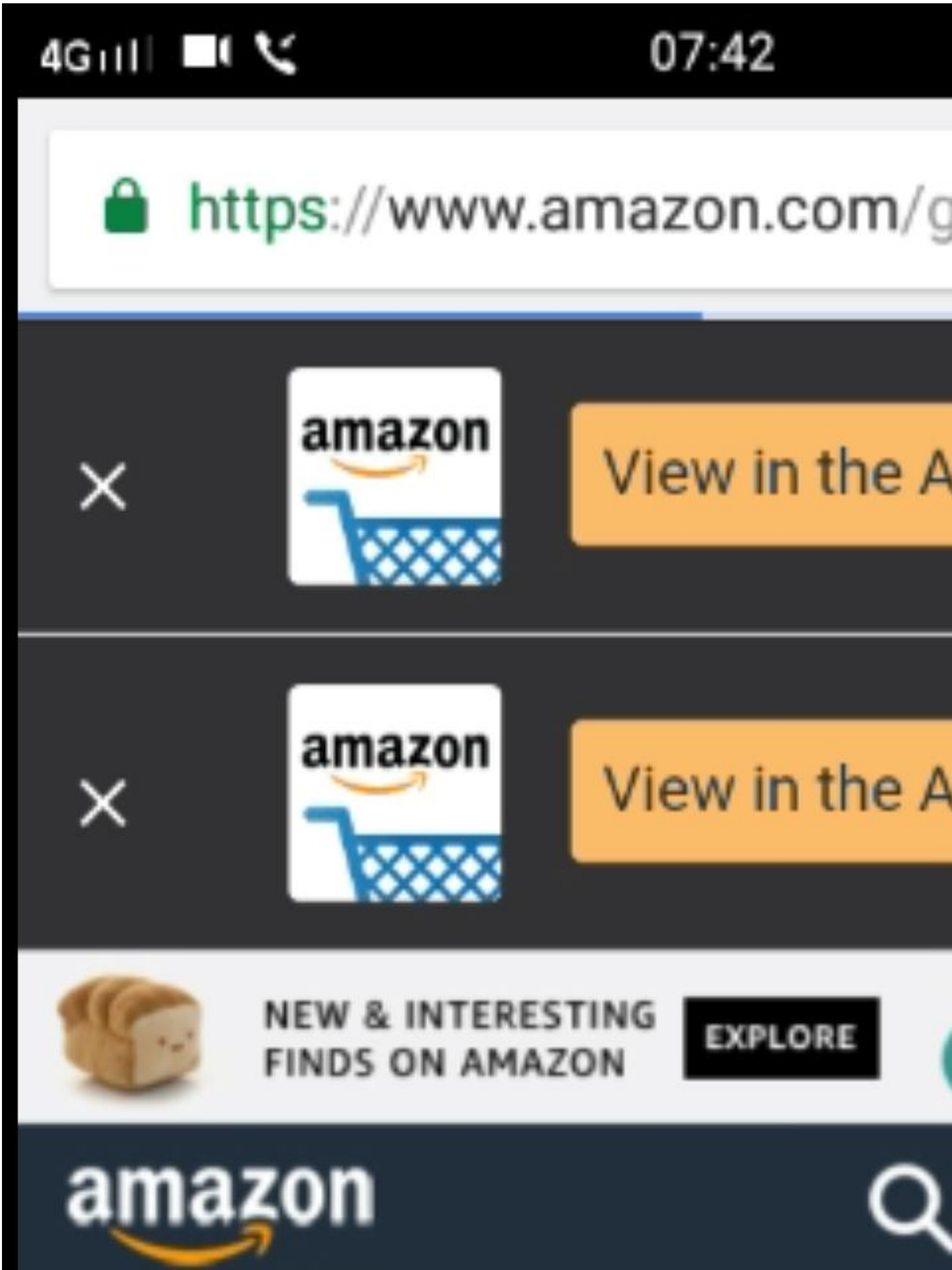
customers who bought this also bought



Similarly for laptop also:


4G
07:42
https://192.168.100.3:8443/
POINT SHOOT
Take Camera
Video source:
camera 0, fa

on clicking battery 3d image, its redirected to amazon page for purchase


4G
07:42
https://www.amazon.com/g
amazon
View in the A
amazon
View in the A
NEW & INTERESTING
FINDS ON AMAZON
EXPLORE
amazon

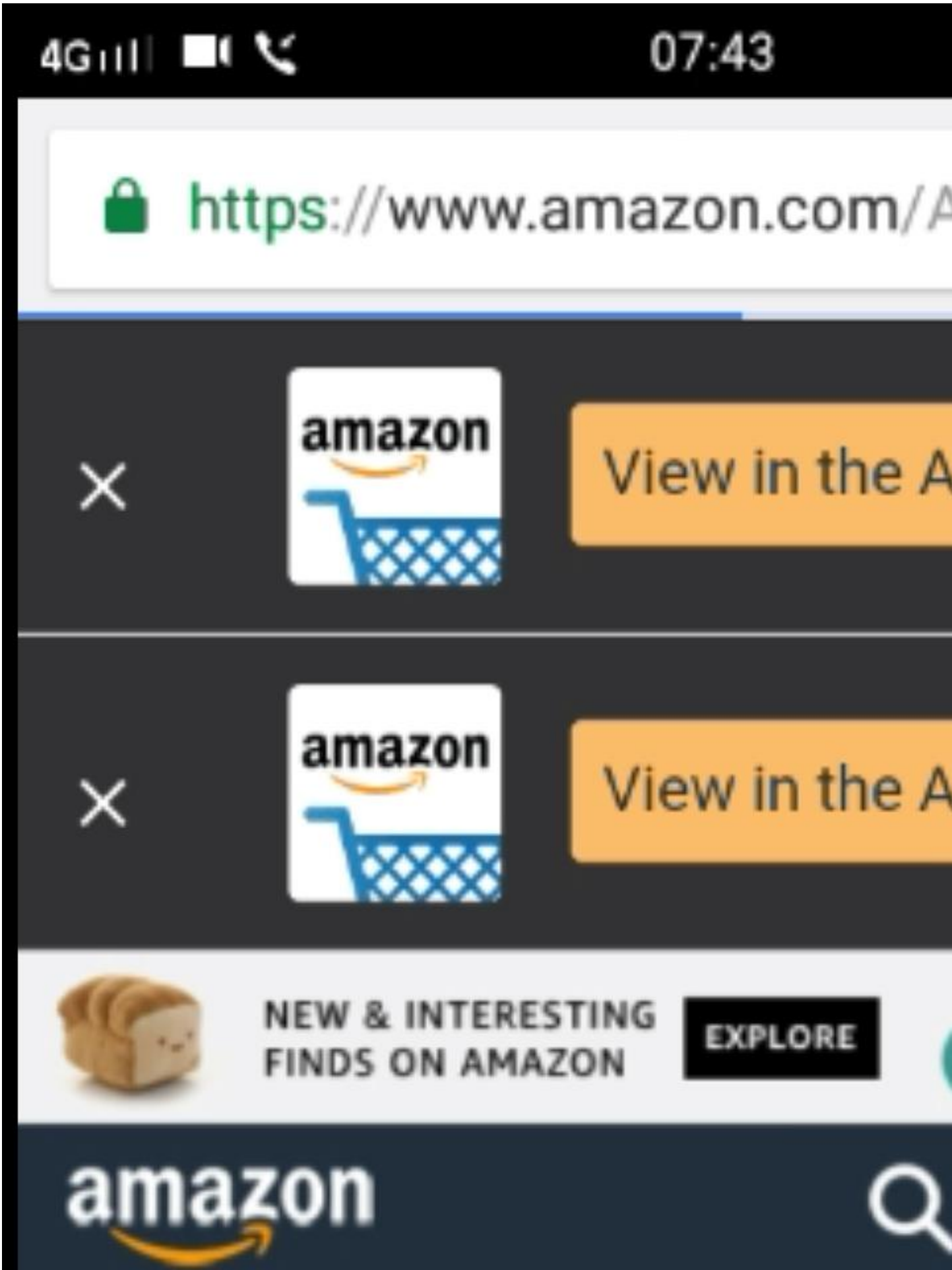
4G 07:42

AC Doctor INC

Replacement Battery for HP Spare 5935
Compaq Presario CQ32 CQ42 CQ43, HP
g6 g7 DV3-4000 DV5-2000 DV6-3000 DV
435 436, fits HP MU06 (General Battery)

#1 Best Seller in Laptop Batteries

on clicking laptop bag 3d image, its redirected to amazon page for purchase


4G
07:43
https://www.amazon.com/A
amazon
View in the A
amazon
View in the A
NEW & INTERESTING
FINDS ON AMAZON
EXPLORE
amazon


4G
07:43

Testing:

We did

1. integratiion testing
2. unit testing
3. tested all the feature flows

Object detection passed successfully amazon page redirection is success phone detection is success recommended objects are displayed successfully

Deployment Steps:

a. Machine Learning: ibm powervision api

Subscribe for ibm powervision api. IBM PowerAI Vision provides tools and interfaces for business analysts, subject matter experts, and developers without any skill in deep learning technologies to begin using deep learning. The tools assist user to focus on rapidly identifying datasets, labeling them, and building models for inference.

https://developer.ibm.com/linuxonpower/deep-learning-powerai/try-powerai/

IBM uses tensorflow for object detection. TensorFlow is an open-source software library for dataflow programming across a range of tasks. It is a symbolic math library, and is also used for machine learning applications such as neural networks.

b. Augmented Reality - AR.js - for the Web

AR.js is a solution for efficiently doing augmented reality on the web.

https://github.com/jeromeetienne/ar.js

c. Nodejs:

Node.js is a JavaScript runtime built on Chrome's V8 JavaScript engine. Node.js uses an event-driven, non-blocking I/O model that makes it lightweight and efficient.

https://nodejs.org/en/download/

Node.js' package ecosystem, npm is used to install the dependencies such as

https://docs.npmjs.com/getting-started/installing-node

```
"dotenv": "^4.0.0",
"express": "4.16.2",
"metrics-tracker-client": "^0.2.3",
"request": "2.83.0"
```

https support

d. JQuery: javascript framework

e. bootstrap: responsive web design

f. openssl: digital certificates for https support - must for mobile web access.

The two files you need are a PEM encoded SSL certificate and private key. PEM encoded certs and keys are Base64 encoded text with start/end delimiters that look like -----BEGIN RSA PRIVATE KEY----- or similar.

To create an SSL certificate you first need to generate a private key and a certificate signing request, or CSR (which also contains your public key).You can do this in a variety of ways, but here's how in OpenSSL.

openssl req -newkey rsa:2048 -new -nodes -keyout key.pem -out csr.pem

This will cause you to enter an interactive prompt to generate a 2048-bit RSA private key and a CSR that has all the information you choose to enter at the prompts. (Note: Common Name is where you'll want to put the domain name you'll be using to access your site.) Once you've done this you would normally submit this CSR to a trusted certificate authority and once they've validated your request you would receive a certificate.

g. amazon api

Zenhub report:

Issues of increment-3

ASE-PROJECT >

Boards

Reports

Milestones

Notifications

Create...

Invite your team

View tutorials

Shortcuts

Madhukar1268

Repos (1/1)

Labels

Milestones

11 Issues - 35 Story Points

New Issues

ASE-PROJECT **#10**
Activate links on 3d objects for Laptop
Increment-3
3 enhancement

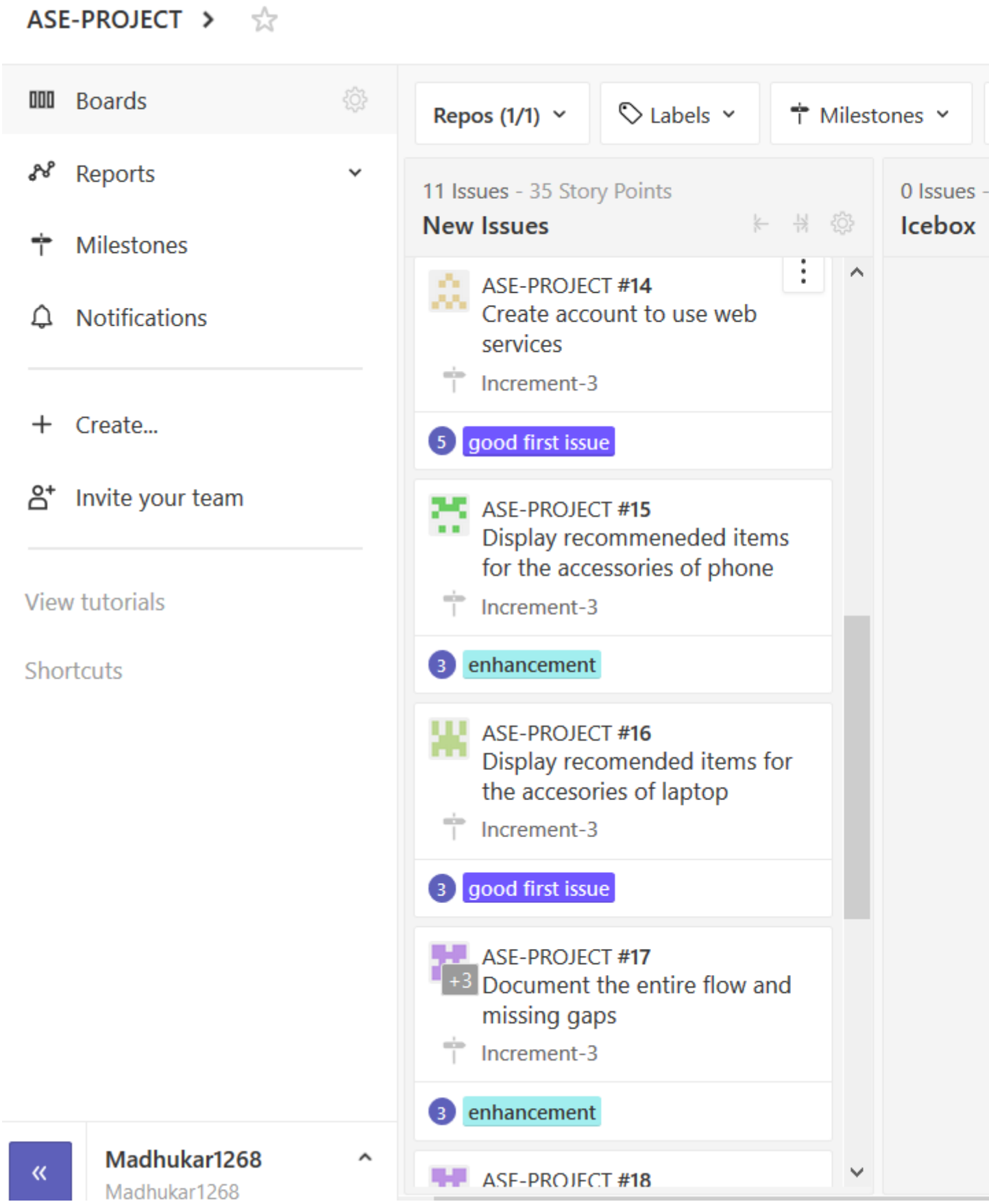
ASE-PROJECT **#11**
Activate link on 3D objeccts for phone
Increment-3
3 enhancement

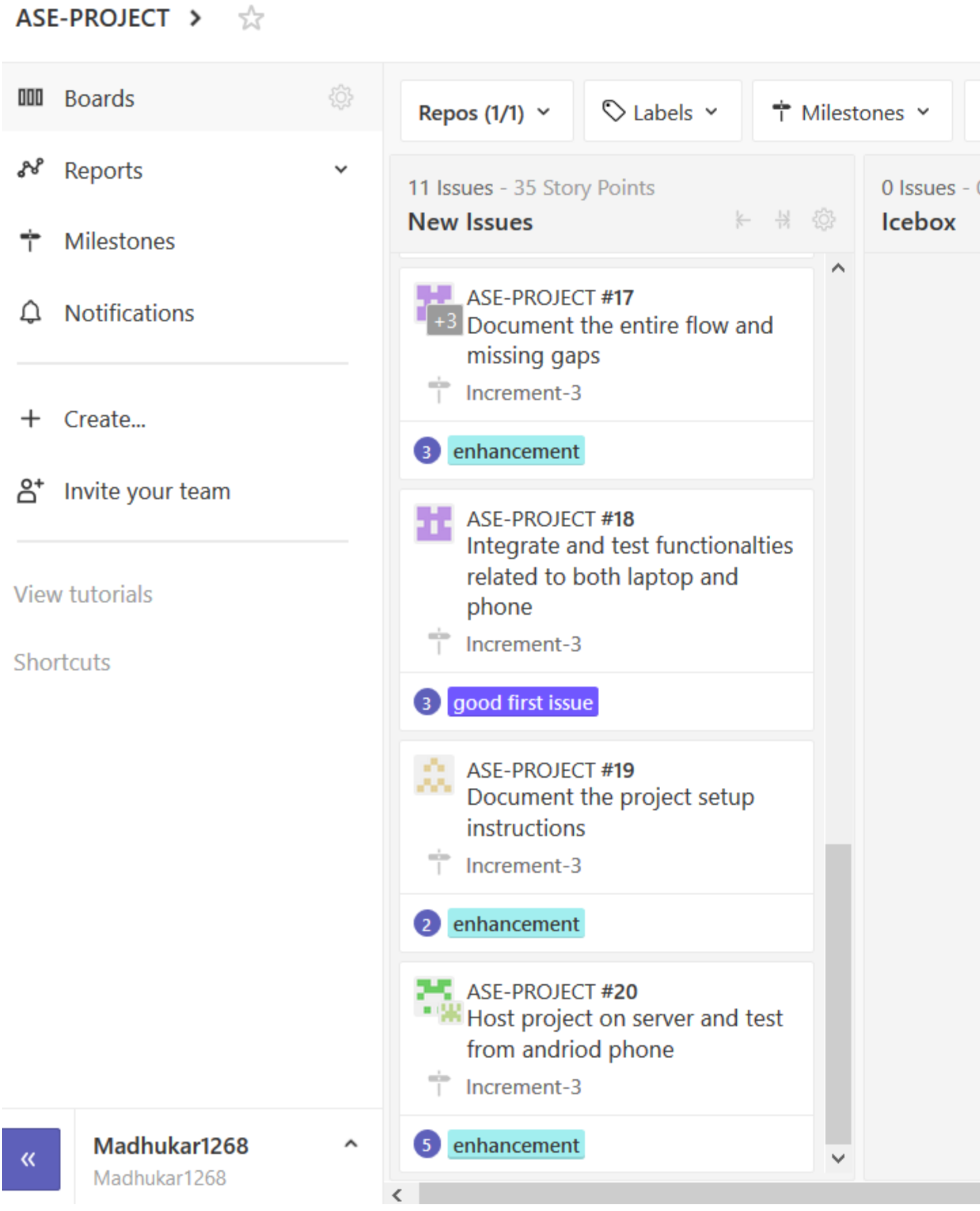
ASE-PROJECT **#12**
Explore web services for recomended objects
Increment-3
2 good first issue

ASE-PROJECT **#13**
Read accessories cost and display
Increment-3
3 good first issue

0 Issues

Icebox


ASE-PROJECT
Boards
Reports
Milestones
Notifications
Create...
Invite your team
View tutorials
Shortcuts
Madhukar1268
Madhukar1268
Repos (1/1)
Labels
Milestones
11 Issues - 35 Story Points
New Issues
0 Issues
Icebox
ASE-PROJECT #14
Create account to use web services
Increment-3
5 good first issue
ASE-PROJECT #15
Display recommeneded items for the accessories of phone
Increment-3
3 enhancement
ASE-PROJECT #16
Display recomended items for the accesories of laptop
Increment-3
3 good first issue
ASE-PROJECT #17
+3
Document the entire flow and missing gaps
Increment-3
3 enhancement
ASE-PROJECT #18


ASE-PROJECT
Boards
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Invite your team
View tutorials
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Madhukar1268
Madhukar1268
Repos (1/1)
Labels
Milestones
11 Issues - 35 Story Points
New Issues
0 Issues -
Icebox
ASE-PROJECT #17
Document the entire flow and missing gaps
Increment-3
3 enhancement
ASE-PROJECT #18
Integrate and test functionalties related to both laptop and phone
Increment-3
3 good first issue
ASE-PROJECT #19
Document the project setup instructions
Increment-3
2 enhancement
ASE-PROJECT #20
Host project on server and test from andriod phone
Increment-3
5 enhancement

Burndown chart for the above issues

Boards

Reports

Overview

Burndown report

Velocity tracking

Release report

Milestones

Notifications

Create...

Invite your team

View tutorials

Shortcuts

Madhukar1268

Increment-3

Activation,integration of links f

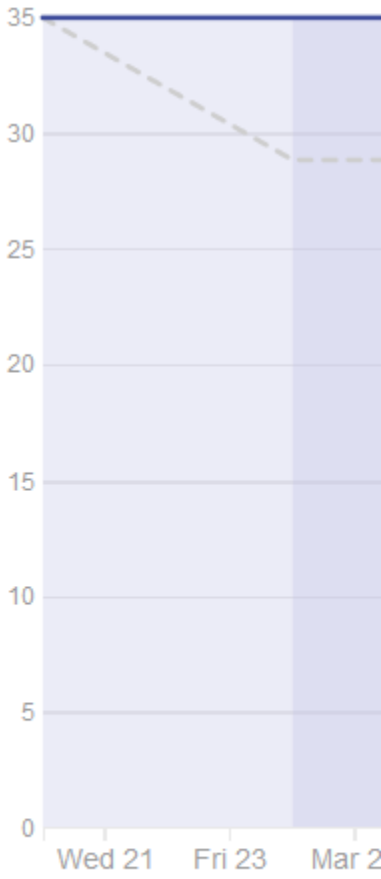
Start: **Mar 20, 2018** Change D

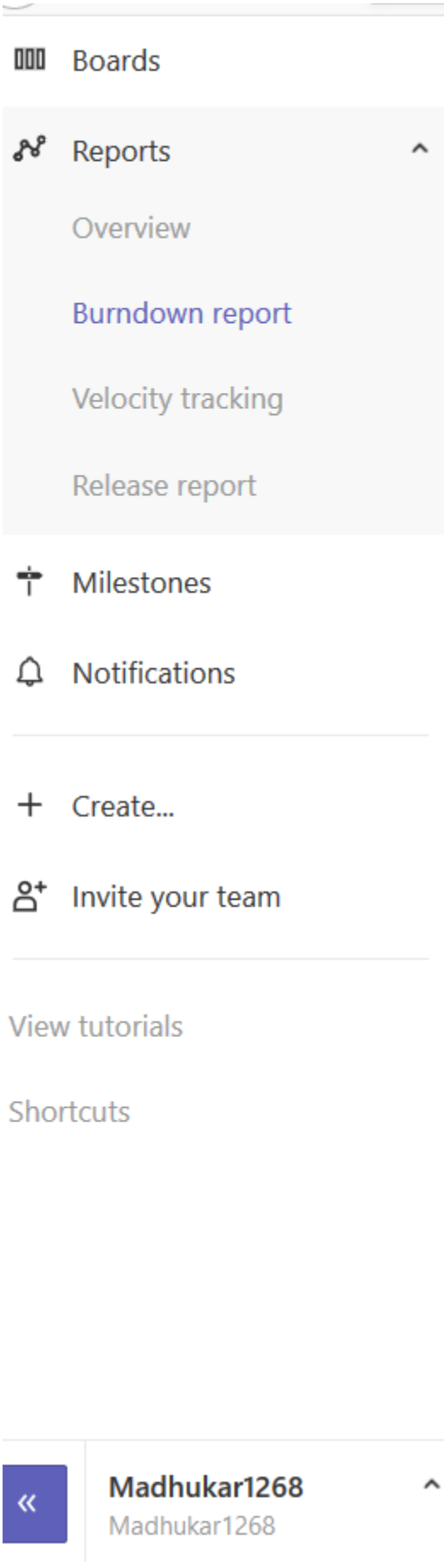
Labels

Show Pull

Burndown report

Weekends





35 Total Story Points

35 Completed / **0** Remaini

Completed Issues

Activate links on 3d obj
ASE-PROJECT **#10** Ne

Activate link on 3D obje
ASE-PROJECT **#11** Ne

Explore web services fo
ASE-PROJECT **#12** Ne

Read accessories cost ar
ASE-PROJECT **#13** Ne

Create account to use w
ASE-PROJECT **#14** Ne

Display recommeneded
ASE-PROJECT **#15** Ne

Display recomended ite
ASE-PROJECT **#16** Ne

Document the entire flo
ASE-PROJECT **#17** Ne

Integrate and test funct
ASE-PROJECT **#18** Ne

Document the project s
ASE-PROJECT **#19** Ne

Host project on server a

Implementation Status report.

Work completed:

1. Activated links on 3D objects for Laptop

2.Activated Links on 3D objects for phone.

3.Explore Webservices for recomended objects.

4.Read accessories cost and display.

5.Create account to use webservices.

6.Display recomended items for the accessories of laptop

7.Display recomended items for the accessories of phone.

8.Document the entire flow and missing gaps

9.Integrate and test functionalities related to both phone and laptop.

10.Document the project setup instructions.

11.Host project on sever and test from android phone.

Description :

The work has equally shared between all the four memebers of the team for the completion of increment-3.

Resposnsibilites ,contribution and time allocated among team memebers.

1.MD USMAN GANI SYED (LabId: 3-1) - 25% of work with 25 hours

He did the following tasks of iteration-3

a.Activated Links on 3D objects for phone.

b.Integrate and test functionalities related to both phone and laptop.

c.Explore Webservices for recomended objects.

2. MADHUKAR REDDY VURADI (LabId: 3-1) - 25% of work with 25 hrs

a.Activated links on 3D objects for Laptop

b.Create account to use webservices.

c.Document the project setup instructions.

3.CHAITANYA SAILESH TONDEPU (LabId: 3-2) - 25% of work with 25 hrs

a.Display recomended items for the accessories of phone.

b.Host project on sever and test from android phone.

c.Read accessories cost and display.

4. SAI KRISHNA TEJA KUNISETTY (LabId: 3-2) - 25% of work with 25 hrs.

a.Display recomended items for the accessories of Laptop.

b.Host project on sever and test from android phone.

c.Document the entire flow and missing gaps

TESTING:

In the Augmented Reality Advertisement,Firstly we run an application on laptop by using camera and then we scanned the Hiro marker.By using this our team developed a code for our project to display the 3D objects in a mobile.We successfully executed the code and now we have to test it by opening our mobile camera.Now, we integrated the code into mobile and opened the mobile camera. we tested scanning the Hiro marker in the mobile camera and we get the 3D object as a mobile shape.

Now Every single application should be tested before the deployment to the server. Here, we will use Mocha as the test running framework, and Chai as the assertion library. User interface as well as functionality can be thoroughly tested. Media support detection, camera detection, multiple camera detection, image capture and upload, object detection, appropriate accessory display, navigation to ecommerce site are few of the subtasks that can be provided with unit tests.

Implementation:

We have developed a web application which will be hosted on a server. The client can access it from any browser either from laptop or phone and get the feel of our AR application. By developing a web application it becomes accessible to everyone instead of downloading and installing OS specific applications(like android/IOS). The user will open the application and scan objects using camera. If the scan results found any laptop/phone, then our application will recognize and show accessories for it. Now we activated links on 3d objects for both phone and laptops and explore the webservices to read the accessory cost and display. Then we create an account to use web service and display the recommended items for the accessories of phone and laptops integrate and test functionalities related to both phone and laptop.

PROJECT MANAGEMENT

Description:-

Web

We used AR.js to build the initial code base necessary for presenting different accessories relative to the product.

API We chose the IBM PowerAI Vision API for object detection in our project as it gives us scope to experience the typical work flow of machine learning i.e preprocessing dataset, training, validation and predicting. We captured the frame from the camera and uploaded it to power AI vision API through nodejs site. We are able to receive json output and parse it. We have made cosmetic changes for better UI.

Bibliography

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