



UNIVERSITY
OF WOLLONGONG
AUSTRALIA

GOAL DRIVEN – ECOMMERCE TO FOCUS ON ADDING VALUE
FINAL PRODUCT AND DOCUMENTATION

A Thesis

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In Partial Fulfillment

of the Requirements for the Degree of

Bachelor of Computer Science (BCompSc)

by

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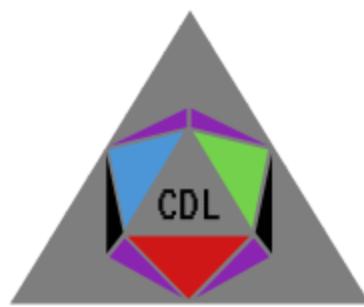
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Final Product and Documentation on Goal Driven eCommerce to Focus on Adding Value

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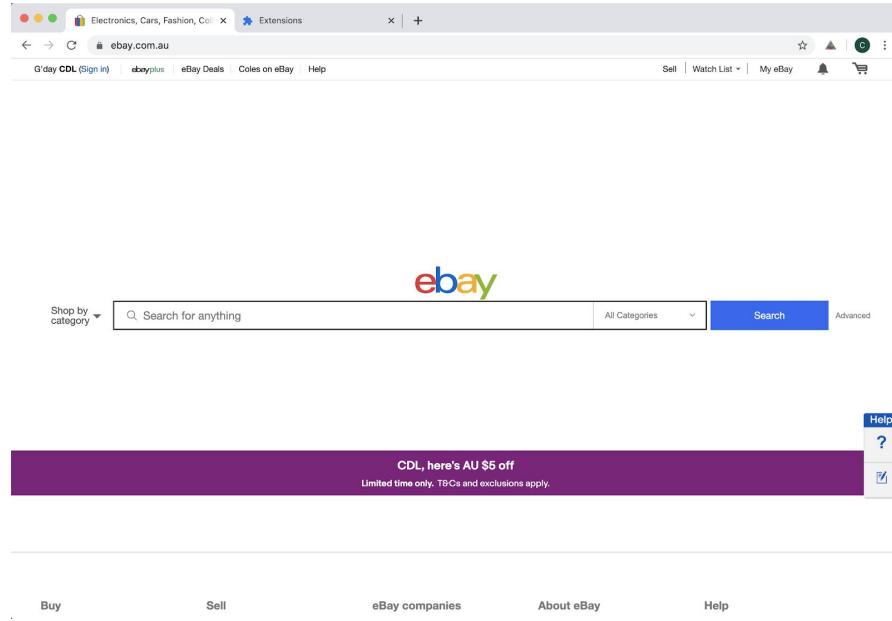
in
June, 2020

Table of Content

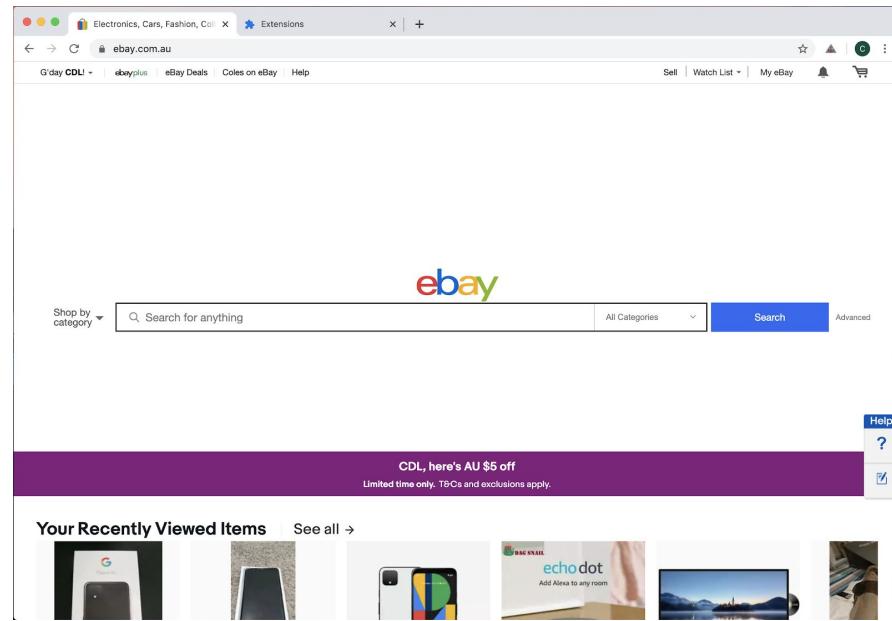
Table of Content	1
User Manual	2
Technical Report	6
System Requirements	6
Project Summary	7
Requirement Traceability Matrix	8
System Design	9
User interface design	9
Architecture	9
Project Closeout	10
Lessons Learned	10
Choosing the right tool for the task	10
Bug tracing should cover every file	11
Structuring a file directory at the beginning	11
Buffer time for development	11
Collaboration during Covid 19 situation	12
Post project review	12
Starting the project	12
Organizing and preparing	12
Carrying out the work	12
Closing the project	13
Project acceptance	13
Client	13
Project Supervisor	13
Team	13
Transition plan	14
Project specifications	14
Assets transfer	16
Development credentials	16
Deployment procedures	16
Resources for the maintenance	16
System installation process	17
Website	22
Group Meetings (Diaries)	23
References	24

User Manual

- Once loaded, the extension is by default already active and the homepage of ebay.com.au should look similar to the picture below. If by any chance the homepage looks significantly different, refreshing the page should solve it.



- Once you log in, you can see your recently viewed items from the homepage.



3. Browse ebay.com.au as you would do normally. Try searching for an item. You will see that all the upselling ads on the results page have been removed.

The screenshot shows the eBay search interface for 'volkswagen golf'. A purple banner at the top says 'CDL, here's AU \$5 off'. Below it, there are search filters for 'All Listings', 'Accepts offers', 'Auction', 'Buy It Now', 'Condition', 'Item location', 'Best Match', and 'Postage to: 2500'. The search bar shows 'volkswagen golf'. The results list two items:

- 2012 Volkswagen GOLF TSI - PERFECT RESTORATION PROJECT**
AU \$3,000.00
Buy It Now
19 watchers
AU \$3,000.00
- Volkswagen Golf R mk7 2017**
AU \$33,000.00
280 HP 206 Kw DSG 6 speed awesome car drives like new
Pre-owned - Volkswagen - Golf

4. Click on a listing that you are interested in. CDL extension also removes ads, sponsored items, and related items on the item page. The item page is now compact, showing only the usual buying buttons, listing images, description, and available reviews on the page.

The screenshot shows the eBay item page for a 'Volkswagen Golf Alltrack'. The top section includes delivery information ('Varies'), payment methods ('PayPal, VISA, MasterCard, American Express, Cash on pickup, Bank deposit'), and return policies ('No returns accepted'). The 'Item specifics' table contains detailed information about the car, such as its condition ('Used'), date of manufacture ('201700'), registration state ('NSW'), model ('Golf Alltrack TSIi32 Premium'), colour ('White'), and various features and options. The page also includes seller notes ('Immaculate condition') and a feedback section.

5. If you are curious about reviews other than those listed on the item page (or if the page does not have any), try clicking on the product review button. This opens a new tab on productreview.com.au. You do not have to retype your search. CDL extension handles that, and will automatically bring up relevant results.

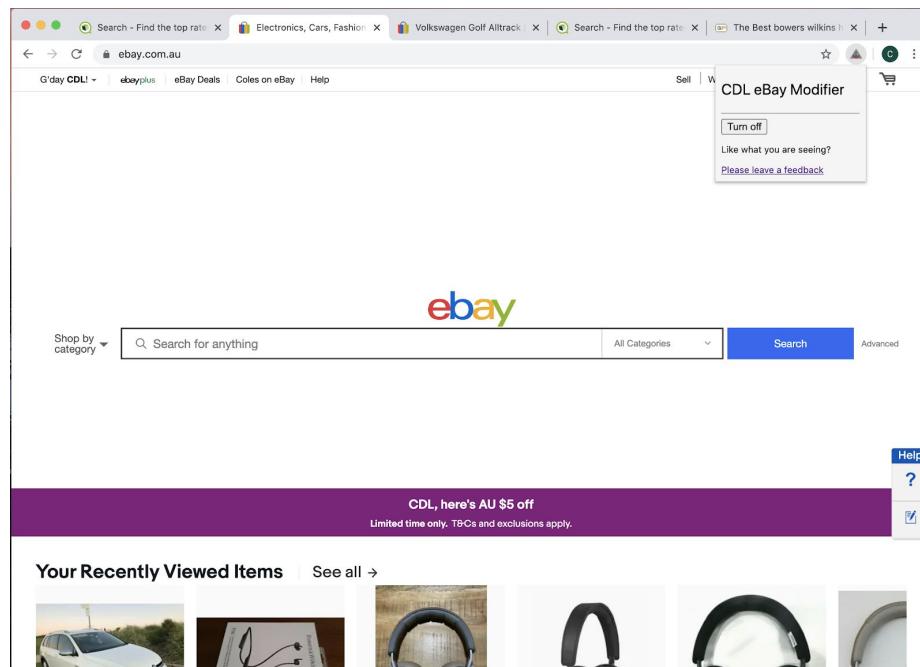
The screenshot shows a search results page for "volkswagen golf alltrack" on productreview.com.au. The results are sorted by relevance. The first listing is "Volkswagen Golf" with 21 reviews and a rating of 3.8. The second listing is "Volkswagen Amarok 2H (2011-Present)" with 124 reviews and a rating of 3.4. The third listing is "Aptamil Gold+" with 445 reviews and a rating of 4.1. The fourth listing is "Volkswagen Transporter" with 59 reviews and a rating of 3.3.

- If you want to compare the price of an item listing between merchants, even those selling outside of eBay, try clicking the 'Compare Price' button. In the example below, CDL extension lists prices of items similar to Amazon Echo Dot 3rd Generation from Amazon AU, JB Hi-Fi, The Good Guys, etc.

The screenshot shows a search results page for "Amazon Echo Dot 3rd General" on eBay. The results page includes a comparison table for the "Amazon Echo Dot 3rd Generation Smart Speaker w/Alexa - Sandstone". The table lists several items with their names, prices, and sellers:

Name	Price	Seller
All-new Echo (3rd Gen) - Smart speaker with Alexa - Sandstone Fabric	149	Amazon AU
Echo Show 5 Smart Display with Alexa Sandstone	99	The Good Guys
Introducing Echo Show 8 - HD 8" smart display with Alexa - Sandstone Fabric	159	Amazon AU
Amazon Echo Plus with Alexa and Bonus Smart Bulb (2nd Generation) [Sandstone Fabric]	229	JB Hi-Fi
Amazon Echo Plus with Alexa and Bonus Smart Bulb (2nd Generation) [Sandstone Fabric]	229	JB Hi-Fi
Tasmaneco Tuscany Cot Sandstone	699	Baby Bunting

7. If you want to turn CDL extension off, click the CDL logo at the top left to bring up the on/off button and a link to a feedback form.



Technical Report

System Requirements

Based on specifications of the client, we were told to implement the Agile design methodology. Here are some of the reasons:

- A. The client does not put constraints and gives total liberty to implement any environment and tools felt appropriate, which might change along the way
- B. As the name of the project suggests, the client expects goals to be achieved, and may be done incrementally. As per client request, measuring goal achievement in small steps is preferred
- C. Measuring goal achievement should be done after every new iteration (update), with the feedback to be used for future iterations

Aside from that, the client has also given suggestions for gathering feedback to measure goal achievement. This can be done with questionnaires or scoreboards, in which we need to determine the number of respondents and should consider other factors as well, such as holidays. The questions may differ between each survey as updates may have different goals. The client also gave references for community meetups involving web development, most of which are based in Sydney. Furthermore, he has given some website links that may help with the project's needs.

The client reminded us to always set a goal for every two weeks and that meetings in Sydney are second to delivering results, so even if the team cannot make it to said meeting, any progress must still be sent to the client for review.

After considering the suggestions from the client we conclude that we need the following features need to be included in our project:

1. Remove all upselling and cross-selling
2. Remove all advertisements on page
3. Comparing item's price from other websites
4. Give third party review of the product
5. Modify UI to be more customer-friendly

These key features are the result of our discussion and compromises made after we started the project. There are many ideas that we wanted to put in the key features but after long discussions those ideas were reassigned to a low priority list. Below are some low priority features:

1. Hamburger menu on search page

2. Horizontal slider to search for items
3. Three different sorted items on one search page

Project Summary

Originally there were no explicit requirements that were given by the client. The client agreed on any requirements that were given to him after brainstorming and discussions. In our opinion, the project was very challenging. Below are some of the obstacles:

1. None of the team members have had any experience with making a plugin before. Some of us have made websites before, either just front-ended or full-stack, but not a plugin particularly
2. The client is based in Sydney and is only available for face-to-face meetings on every other Tuesday, although provides time for Zoom conferences every Sunday
3. The client has provided very vague technical details in regards to building the plugin
4. We felt that there was a conflict of interest between the client and the class study (syllabus). According to the syllabus, we were expected to present the interface in week 12 of the first session, so we had many reports and presentations in class. On the other hand the client wanted a working plugin ASAP.
5. On the second half of the subject, we tried to reach out to the client for more details and explanation of the system requirements but the client seemed to forget about our project. After several failed attempts, we concluded that we were on our own and we ourselves should decide the course of the project.
6. One of our team members was stuck in China due to Covid-19 travel restrictions and he was very hard to be contacted as a result. We lost resources which slowed our progress. Although we finished on time, there was some tension and confusion between group members on what to do during Covid-19.

In the second session, we realized that we were a bit behind the schedule and changed the pace a little bit. We also agreed on doing only the key features for our project as we knew that we did not have the resources and the time to finish all the low priority.

Our prototype, which covered 4 of the key features, were working as expected. Although there were some features that needed upgrading, overall the prototype result was in our expectation. One of the problems in our prototype was the on/off button on our extension popup which was not properly working, only sometimes. In addition, the compare price button, which shows the prices of the item from other websites, only works sometimes too.

After more features were added, namely the product review, we tried to do debugging and also improve on our program, especially how the new feature relies heavily on the closeness of title match. We tried to improve our program but we were too caught up by other assignments and projects. In the end, we submitted our source code which we thought was appropriate for the system requirement.

Our submitted program has the following features (requirements) working as intended:

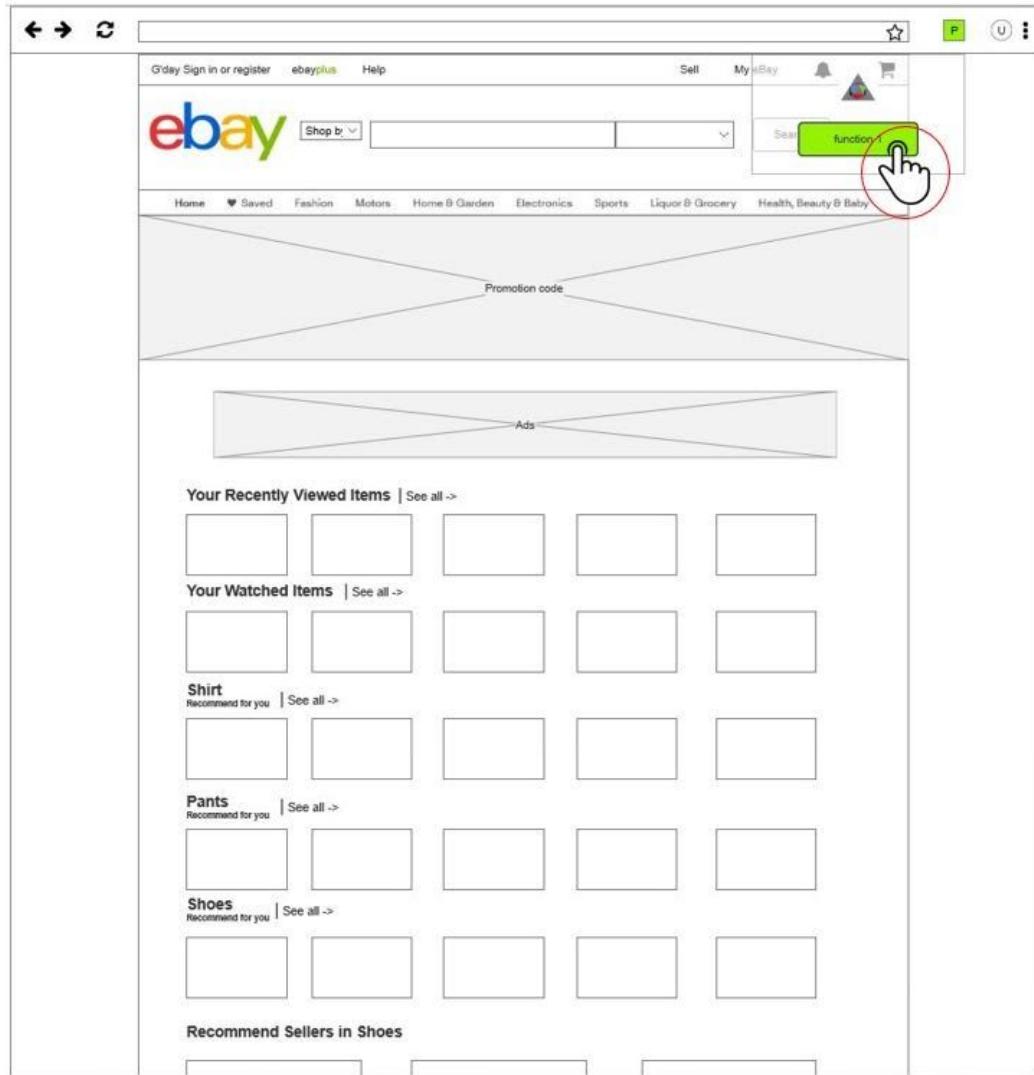
1. Remove all upselling and cross-selling
2. Remove all advertisements on page
3. Comparing item's price from other websites
4. Give third party review of the product
5. Modify UI to be more customer-friendly
6. On and off button in extension popup
7. Feedback form from user

Requirement Traceability Matrix

RTM	ID	TC_01	TC_02	TC_03	TC_04	TC_05	TC_06	TC_07
ID	count	1	2	3	3	3	3	3
Req_01	7	X	X	X	X	X	X	X
Req_02	6		X	X	X	X	X	X
Req_03	1			X				
Req_04	1				X			
Req_05	1					X		
Req_06	1						X	
Req_07	1							X

System Design

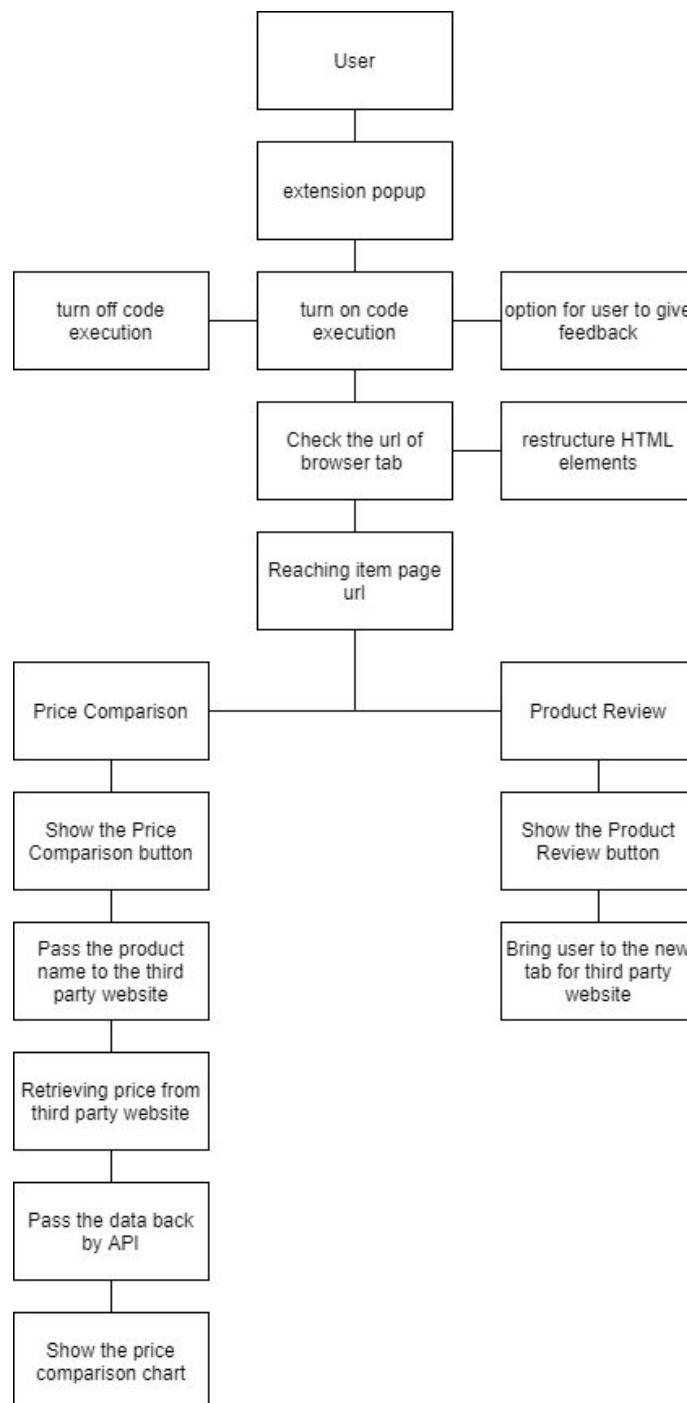
User interface design



For the chrome extension popup interface that we have designed since the wireframe, we want to make this part as clean as possible by just implementing only useful functions such as to allow the user to turn on/off the chrome extension and allowing the user to give the feedback on the provided url.

Architecture

The user can take action on the extension popup, then other features will launch in the browser tab based on the feature we have added including hiding ads, price comparison and product review.



Project Closeout

Lessons Learned

There were several hard times we went through along this project. This part gives some examples of the situation and challenges that we faced.

Choosing the right tool for the task

- At the start of the project in 2019, the requirement allowed us to develop on a chromium-based browser which revolved around Mozilla Firefox, Google Chrome and Microsoft Edge Chromium (Beta). The reason why Google Chrome was selected was that there were well-organised documents available from Google itself and several self-study resources on the Internet.
- At some point after implementing JavaScript along the task, we found some codes (to restructure HTML) that we had developed were too wordy to solve just a simple task on HTML. There were too many lines just for editing a single HTML element and if we

continued this might add more complexity. We started to look for other solutions for this task and found that there is a library named jQuery that is reliable and well known in the industry. Then we started to research and implement some of the useful jQuery functions into our codes which later become the part of our product today.

Bug tracing should cover every file

There are 4 main parts to work around in the beginning of Chrome Extension development as a newbie. This includes Manifest, HTML, CSS and all other JS. There were cases when we just worked on a single JS file and we ignored checking the other files. In this situation, we found the bug in the CSS on defining ambiguous class names. In other words, the CSS code is confused as to which class with that particular name is being referred to: HTML defined in Manifest, HTML of the website that appears in the browser tab, or the HTML of the extension pop-up itself. This was the main bug and the only one that froze our project progress during the summer break. This bug was solved in early 2020 when one of our developers started to trace around all the files and notified this to the team. If this bug was not solved, the only approach that can make the JS code execution to work was to use executeScript technique which acts as code injection into the browser tab in any website, but this technique can add more complexity into the code rather than just using the simple JS code. This can also cost more time to develop and test.

Structuring a file directory at the beginning

After working along and planning to add more features, we noticed that there were a lot of JS files in the Chrome Extension folder. Then we started to create a directory based on the programming language of each file so that the files can be more organised, but after that we found many errors in the file path settings, which were mostly in the HTML and JS files. We took almost one week to refactor file path settings. This is one of the problems that we can learn from, especially when there are plenty of files in the project, that there should be a predefined solution to organize the directory since the beginning of development.

Buffer time for development

Uncertainties can cause delay in the project and the developer may not know the exact amount of time they should allocate, especially when developing a new system or the developers themselves are not experienced enough. Reading the Chrome Extension document and trying out all of the stated browser functions was just one part of what we had to achieve. In short, the buffer time in this project is researching and debugging; how to plan and organize our tasks, the challenging work and looming deadlines, and working with all these new environments. As this project timeframe is 2 study sessions, we were performing quite well on researching, solving, debugging and delivering all the tasks before the project deadline.

Collaboration during Covid 19 situation

- This is a real situation that happened around the world. We think this was force-majeure and we did not have any preparation for a disruption this big. In the above we mentioned buffer time, but this is another step beyond the buffer as at that time we never knew what to come after the pandemic. When we faced this situation and the university announced delivering classes remotely, we held an urgent meeting before the quarantine began. We started to find a collaboration platform that can solve our remote activities. In the end, we found Discord to be the main platform for group meetings and file delivery. Actually Discord had been in our contingency plan since the beginning and we just used this platform along with Facebook Messenger for redundancy. Later, we found that the platform itself has several useful features such as privacy settings, then we moved entirely to Discord.
- The cross country collaboration during Covid 19 might be one of the new experiences for university students to face during this time. Our group had one member that could not come back to Australia as a result of his country's lockdown. We expected that communication with the person would change for sure such as different timezone, the internet accessibility and collaboration tool. As the internet accessibility or VPN might be required and at the same time can be illegal in some countries, the solution that our group had done is back to the traditional approach of collaboration by email. Then, we set a time buffer for the task in concurrent with all other tasks in Australia. In this part we can solve the problem without losing our members to the situation and all the tasks are finished by the project deadline.

Post project review

Starting the project

After selecting this project, we were rushing to do research for trying the extension. There was several misleading communication in the beginning because we lacked Chrome Extension development at that time and focused more on finding the tools and programming language to work with. However, the client meeting guided us to know some techniques and platforms that we could use. We then settled and had more confidence in researching.

Organizing and preparing

Looking back to 2019 when we started to gather some initial resources for development, we noticed that some of our team members' fields of study were not related much in web development. We started to divide the task based on each individual's confidence. There were 3 categories on the working roles: web designer, programmer and documentation. We also made the team leader to be the only one who is performing the role of project manager.

Carrying out the work

There were 3 different phases which are based on the sessions in Australia. First is in Spring 2019, when we did most of the project planning and wireframe designing of the interface. There are 2 main working roles at that time on web designing and documentation. The team

leader also coordinated with the client to clarify most of the issue in that time. In the summer break between 2019/2020, most of our team members had traveled to other countries. Before leaving Australia we had planned to use this time for researching and developing the initial product because it could be difficult to concentrate on developing the whole product during break. At the start of the autumn 2020 session, we too were affected by Covid 19, but before that we had made a big progress on programming. We had set a face to face meeting before the quarantine lockdown began which mostly discussed how to transfer all the for remote collaboration. Also, one of our team members could come back as Australia shut its borders. We and the supervisor tried to solve this by bringing all of us to work together by defining what tasks the stuck member could achieve remotely.

Closing the project

We had run all the manual tests before submitting the code and we found our product working impressively. We then moved on to do this documentation. Based on the changed circumstances, some of the project delivering had been changed from the requirement. We tried to solve the project delivery issue by keeping contact with our project supervisor..

Project acceptance

Client

We received a clear system requirement specification since the first day and our client gave freedom to create the features for the Chrome Extension. We followed this up with the client in the initial stages and negotiated on the main feature, which later was settled to be a hiding ads feature. After we reached the finishing point of the main feature, we received further recommendations from the client about a new feature that can add more value to the product which was the product item price comparison. While we were at it, we also chose to present item reviews from outside of eBay.

Project Supervisor

Although the project requirements relied on our client, in 2019 we only followed the university syllabus on the presentations and documentations which we normally received feedback from, regarding the planning and design. Later in 2020, we got the support from a lecturer acting as a supervisor for the project. The discussions with our supervisor were more related to the internal management issues rather than the technical issues as we could progress the programming. However, to reach the project acceptance, our supervisor encouraged us to solve the issue between management and technical members to do remote collaboration on programming. This was related to one of our members working remotely from foreign country.

Team

Our main goal since the first day is to finish every task before the deadline. We were quite successful in this part, as we delivered all the tasks on time.

Transition plan

Project specifications

The latest version of this project has the main directory as the image below:

 css	25-May-20 1:00 AM	File folder
 img	25-May-20 1:00 AM	File folder
 js	25-May-20 1:00 AM	File folder
 lib	25-May-20 1:00 AM	File folder
 manifest	13-May-20 11:16 PM	JSON File
 popup	31-May-20 6:35 PM	HTML File

The main structure of the file in this project is including

1. manifest.JSON - This file is used for defining all the activities and all of the files that are covered in Google Chrome extension.
2. popup.html - This is the popup HTML that shows when clicking our product icon at the top right of Google Chrome browser.
3. popup.JS - The file will take action on an activity that the developer can program on what needs to take place.
4. background.JS - The file that will work in the background of the extension which normally supports other JS files to take action.
5. Other JS files - These are not the main structure of the Google Chrome extension, but are added to improve the features we implemented.
6. CSS file - This is dependent on the designer, but this part needs to be debugged and tested along with other code execution.
7. Icons and other images - This is to specify the logo and size that fit in with the browser.

The example case below is to show what to consider after adding a new feature into the extension by defining new code in JS/jQuery and what needs to be performed by developer (as manual testing)

```

$(document).ready(function () {
    if (disabled) {
        //home page
        if ( url.match( /^((https?|chrome):\/\/(www)\.(ebay)\.(com)\.(au)\// ) )
    {
        //alert('home page works');

        var recentlyviewed;
        //try to find the exact text and edit on condition
        //if($('h2.hl-card-header__headline').find('a').text().includes("Your Recently Viewed Items"))
        if($('div#items_list1').find('a').text().includes("Your Recently Viewed Items"))
        {
            //var id_viewed = $('h2.hl-card-header__headline').closest('div').attr('id');
            //alert($('h2.hl-card-header__headline < div').first().closest('div').attr('id'));
            //alert($('h2.hl-card-header__headline < div').first('div').attr('id'));
            //$('.modal-header > h2').attr("id");
            //alert('have it');
            recentlyviewed = $('div#items_list1').contents();
        }

        try{
            $('div.hl-pushdown').detach();
            $('#mainContent').detach();
            $('#gh-hsi').detach();
            $('table.gh-tbl').find('tr').addClass('tr02');
            $('table.gh-tbl').prepend('<tr></tr>');
            $('table.gh-tbl').find('tr:empty').addClass('tr01');
            $('tr.tr01').append('<td>');
            $('tr.tr01').find('td:empty').addClass('td02');
            $('td.td02').append($('td.gh-td:first').contents());
            $('td.td02').attr('style','vertical-align:bottom');
            $('td.td02').attr('colspan','2');
            $('tr.tr01').prepend('<td>');
            $('tr.tr01').find('td:empty').addClass('td01');
            $('tr.tr01').attr('align','center');
            $('tr.tr01').attr('vertical-align','bottom');
            $('tr.tr01').attr('height','300');
            $('table.gh-tbl').append('<tr></tr>');
            $('table.gh-tbl').find('tr:empty').addClass('tr03');
            $('tr.tr03').attr('height','150');
            $('#hlGlobalFooter').before($('div></div>').addClass('recentview'));
            $('div.recentview').append($('recentlyviewed').contents());
            $('div.recentview').addClass('hl-module hl-standard-carousel off-card hl-atf-module-js');
            $('#hlGlobalFooter').before($('div></div>').addClass('watchproduct'));
            //$('#div.watchproduct').append($('watchedproduct').contents());
            //$('#div.watchproduct').addClass('hl-module hl-standard-carousel off-card hl-atf-module-js');
        }catch(err){
            console.log(err);
        }
    }
}

```

This part is using text editor Notepad++. In the popup.js, we have set this file to be working along with popup.html, controlling the browser tab code execution (can also do code injection). The easiest way to test especially if the developers are working with JS/jQuery is to use alert to see that the condition is executed or not. The other part that is supported by the browser is using console.log to trace the error which we performed under JS *try-catch*. The debugging should cover every file and this is not finished yet, as there may be bugs that are ignored by the other files.

The first step is to trace back to popup.html first and check for the HTML attributes including id/name/value. Next, check the Manifest.json on what has been specified and not, including further condition settings and restrictions that might occur during code execution. The last step is to manually check the external CSS to see if the class was implemented in the code, which, if not, could become a problem later. The checking should recognize whether the specified CSS performs along the project requirement or not, if not then that CSS class may not be useful or needs to be changed. For other JS files that implement the feature, the testing and debugging should also perform according to these mentioned strategies. If the feature has more complexity, this should also take in concern on does this still fit and solve the project requirement or not.

Assets transfer

As the file size of this project is 308 KB when compressed. The transferring of files among the development team should not be of concern. If the project file is deployed for public download, this project can benefit from the base file size of the main feature that most modern endpoints can handle for further development.

Development credentials

About the tools for development, there is no concern on the credentials at the moment. The traditional text editor that can support working with web development is enough for the base case. Further modern IDE can be useful for debugging. The only part that needs to take credentials will be when attempting to launch this project into Chrome Web Store, which will require the credentials of the publisher. As per the client's instructions, we have no plan to publish for public users at the moment.

Deployment procedures

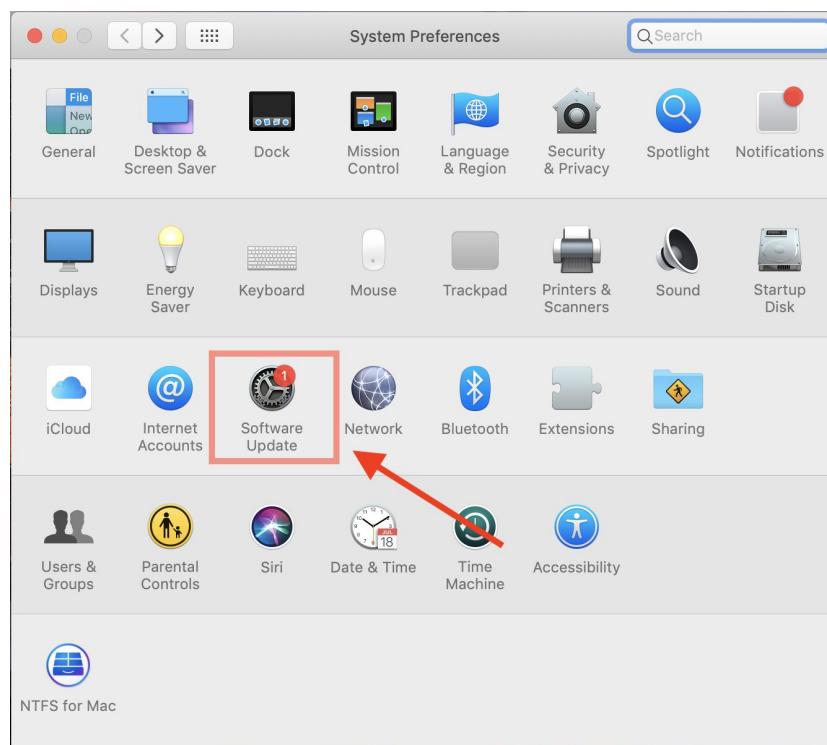
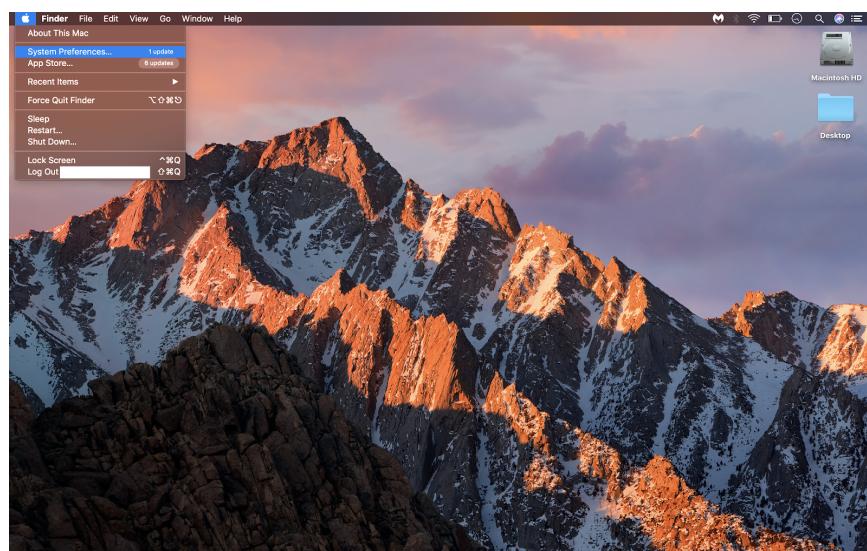
As we worked on this project for the purpose of education and internal use, the public deployment is not yet tested. When talking about public deployment, the key concern is the main feature because eBay can rapidly change their HTML without our notice. There can be two approaches to deliver this task: to create partnership with the website or to find a better solution that can automate detect the change of HTML for further continuous deployment.

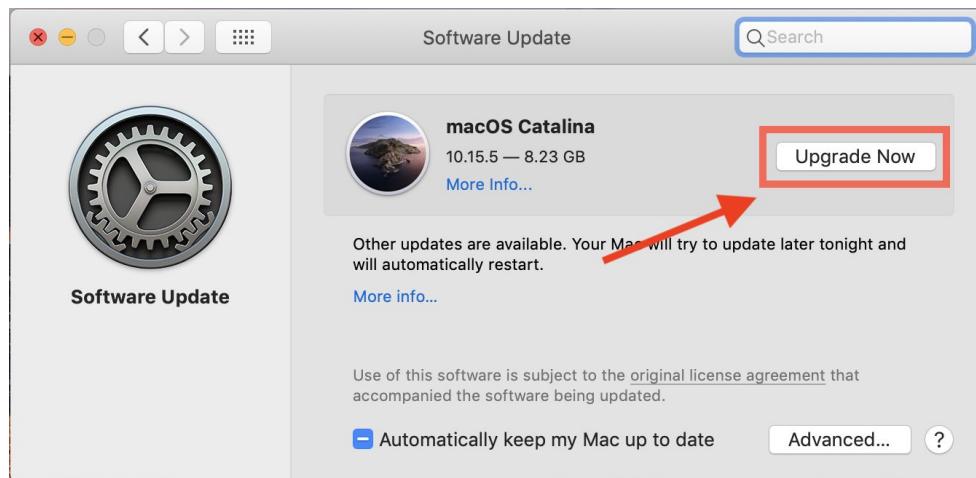
Resources for the maintenance

The main part that requires maintenance will be the JS files. This part will need to have dedicated maintenance along its lifetime. The debugging after JS files manipulation should take place in every file. As a recommendation, we have imported a jQuery library to solve restructuring HTML elements. If there are further use of external libraries or frameworks, the maintenance needs to cover all the aspects that each library is working with. Otherwise, using just only a meaningful library is better and less complex for the system.

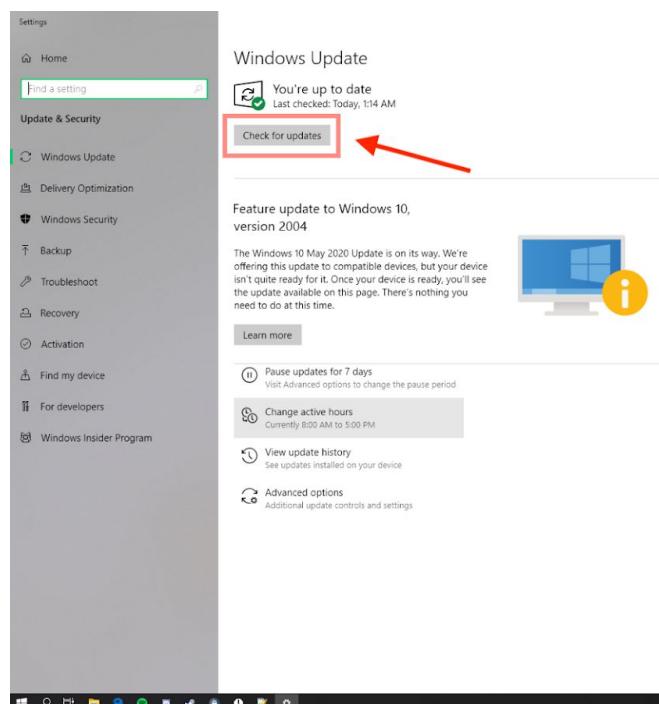
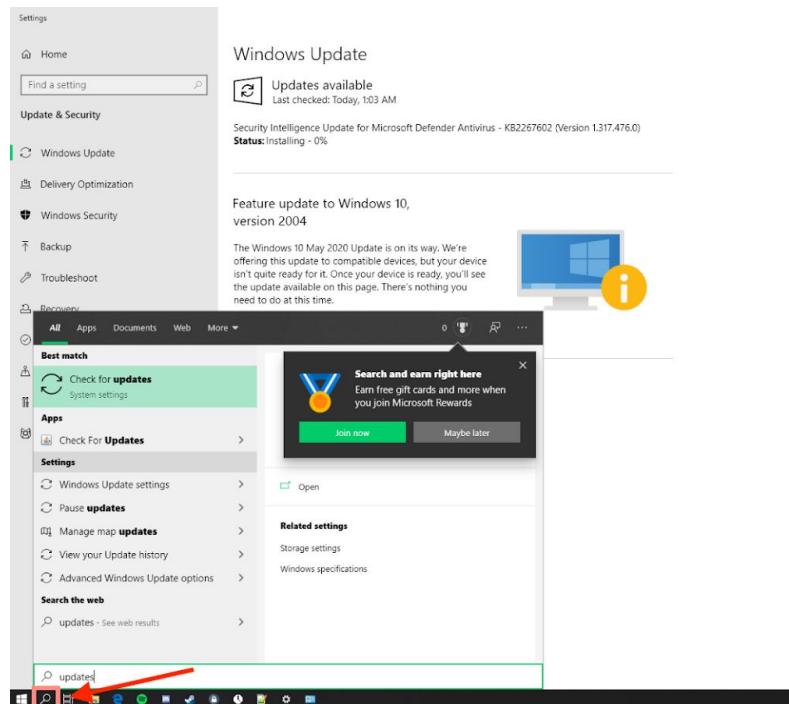
System installation process

1. **CDL extension for Google Chrome only works on the Desktop version.** First, boot up your desktop machine, then connect it to the Internet
2. Check if your operating system is up to date. **If your operating system is up to date, skip ahead to step 4.** In MacOS, click on the Apple Logo at the top right of the screen, then click the 'System Preferences'. This will open the System Preferences app, then click the 'Software Update'. If the MacOS is not up to date, the new version will be shown and then click the 'Upgrade Now'. Follow the prompted procedures



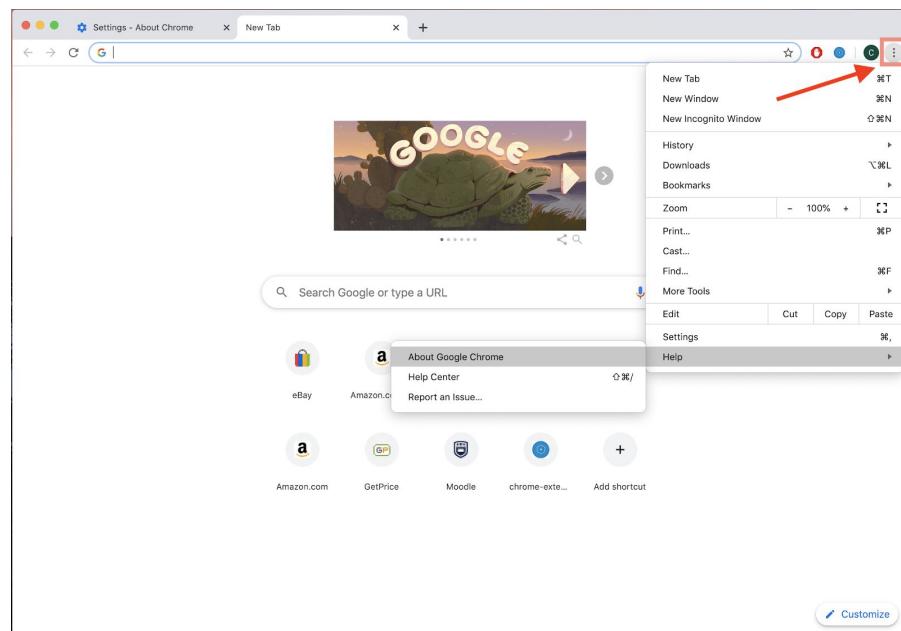


In Windows, click on the Magnification Icon at the bottom left of the screen, then type 'updates'. Click 'Check for updates' and this will open a new application. If there is no text saying 'You're up to date', click on the 'Check for updates'. Wait until the loading process is done, and if there is an update it will be installed. Follow the prompted procedures

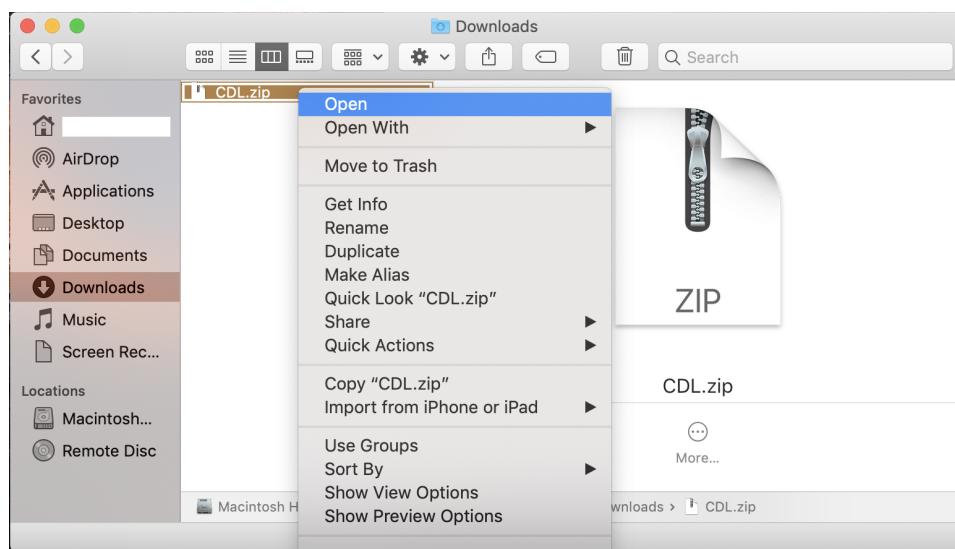


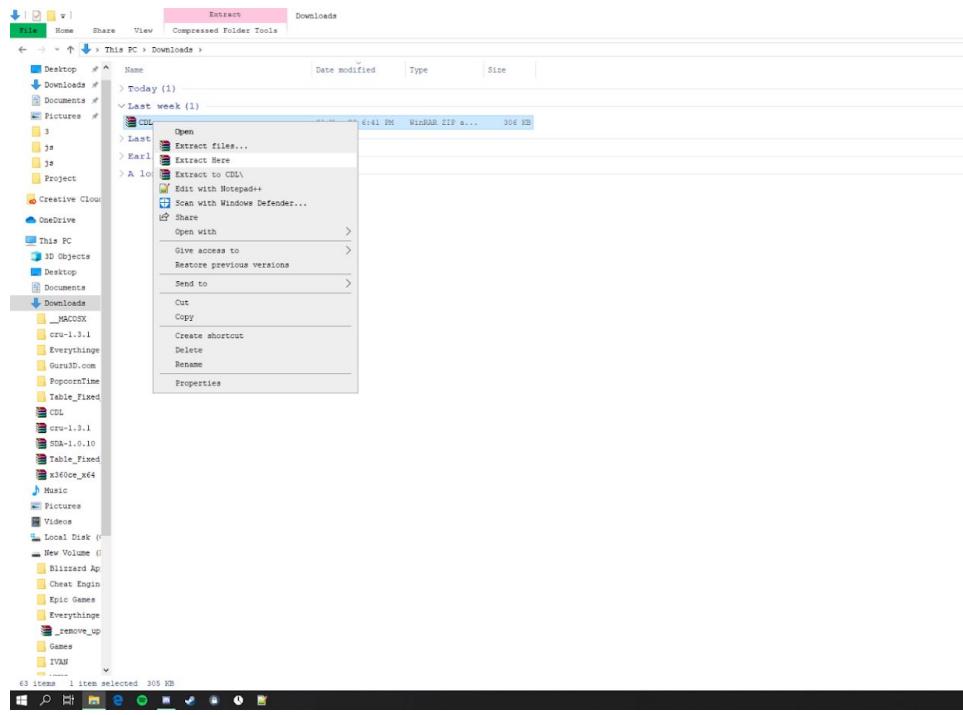
3. Once your machine restarts, make sure it is connected to the Internet
4. Open the Google Chrome application, and we want to make sure that it is up to date too, although it usually updates automatically. Click on the three vertical buttons at the top right of the Google Chrome window, then click the 'Settings'. This will open a page, then click 'About Chrome'. If the page shows 'Updating Google Chrome', wait until it finishes.

Quit Google Chrome and reopen it

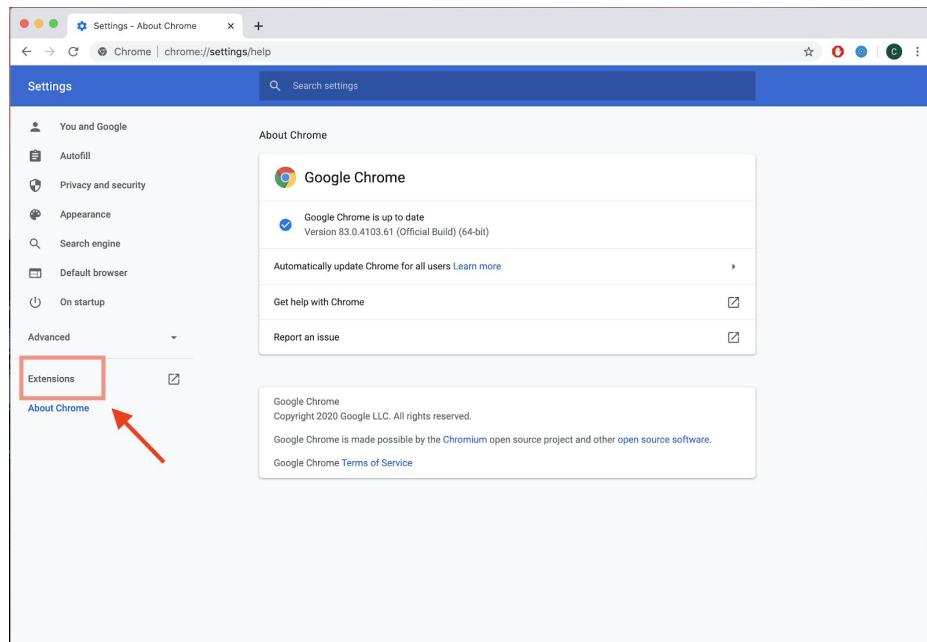


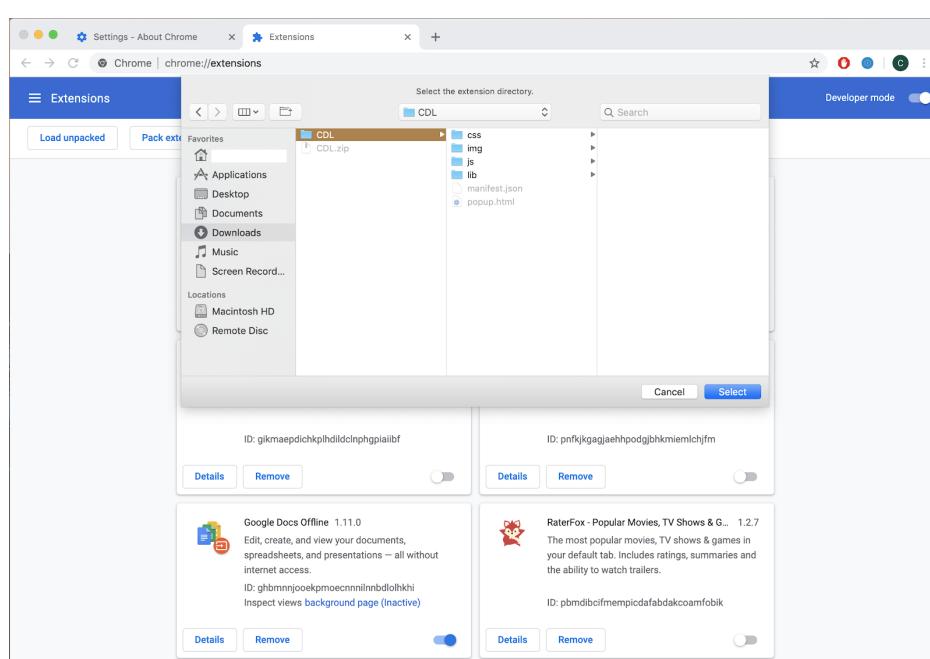
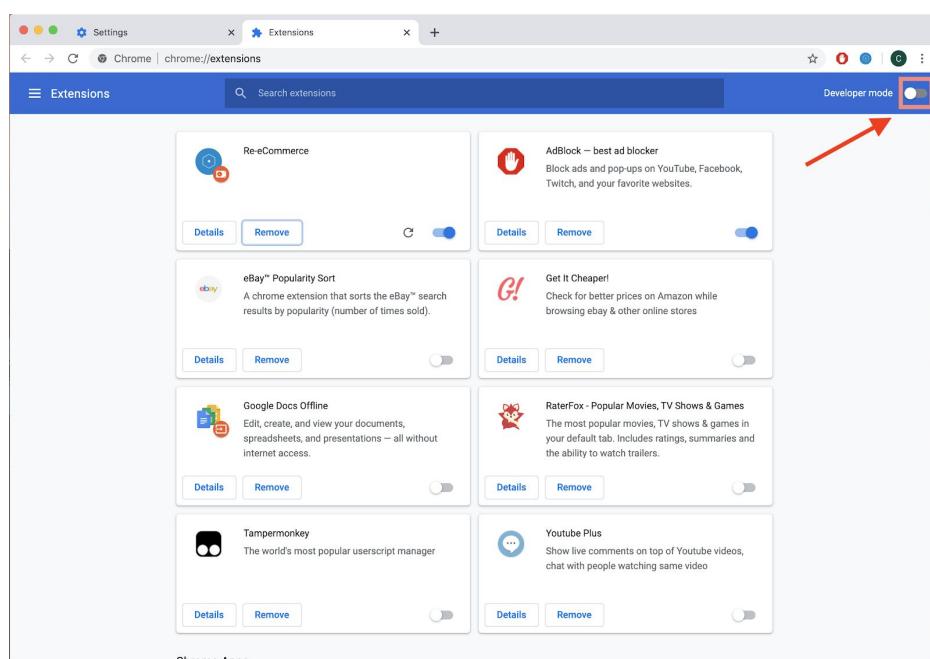
5. Download the **CDL Extension zip file**, and then unzip it. To unzip, right-click on the zip file and in MacOS click 'Open', or in Windows select 'Extract Here'.



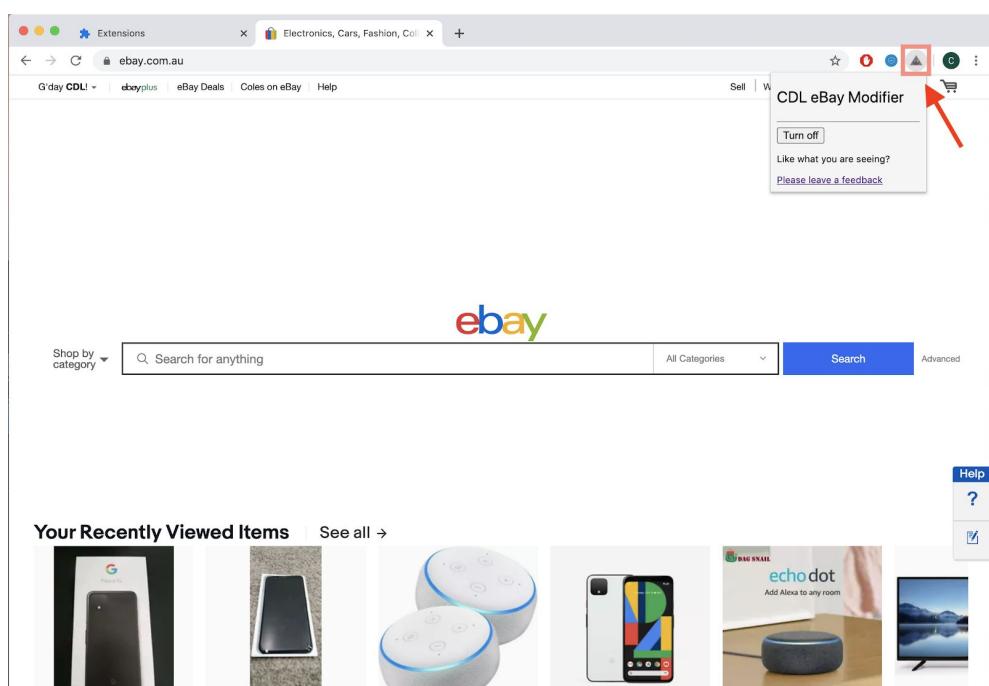


6. To load the extension, go back to the Settings, but this time click 'Extensions'. Toggle the Developer mode so that the 'Load unpacked' button appears at the top left of the new page, and then click it. Navigate to the unzipped CDL extension folder and click 'Select'





7. If everything is set up properly, the CDL logo will appear at the top right of the Google Chrome application. Clicking it will show the option to turn the extension on/off. Browse **ebay.com.au** and start using CDL extension!



Website

For our group website, we have included key points that are necessary and important to the client when browsing through the website. The key points are:

1. Home page: explaining the current issues of eBay. Highlighting the points on how our extension would solve the issues. Provide a brief idea on the development tool our group will be using.
2. Project aim: explaining our design approach and the Hi-Fi prototype done in Axure RP.
3. Marketing: explaining and identifying the target market.
4. Product: a youtube video showcasing our prototype.
5. About us: details on the group members and the client.
6. Contact us: a page that client or reader can send questions regarding the website

The link to our website: <https://teamcdl.constantcontactsites.com/>

Group Meetings (Diaries)

Week 1

Members in Australia had a short discussion, we have sent an email to two other members in China regarding all group discussion. The things we discussed during the meeting:

- Additional learning on JavaScript
- Removing all the advertisements and up-selling items present in all pages
- Further discussion on how to improve the UI making it more user friendly
- Integrate a new feedback form for our extension

Week 2

We had our group discussion on assessment 8 (presentation on progress review). After that, we also have a further discussion on the programming section. The things we discussed:

- Allocated all assessment 8 (presentation) tasks to all members
- Integration of jQuery library into our chrome extension
- Plan to add additional sections and make minor changes for the group website

Week 3

We had our group discussion and had a meeting with our supervisor on changes in the project functionality. The things we discussed:

- Decided to add two new features in our extension: price comparison and product review
- Planned to add additional section for recently view items in the home page
- Review of the second version of feedback form
- Finalized on the sections needed to add in the website

Week 4

We had a short group discussion to make sure everyone is on track. The things we discussed:

- Still conducting research on which price comparison and product review website to use in our extension
- Discussed a bug that cause our CSS to have a delay response
- Continue doing the programming section

Week 5

We had our group meeting on discord for the first time. The meeting content is nothing new as we continue where we left off last week, the things we discussed:

- Still conducting research on which price comparison and product review website to use in our extension
- Planned to add a pop-up message for our extension
- Continue doing the programming section

Week 6

We had a short group meeting on discord and started reading the assessment 9 marking requirements. The things we discussed:

- Found a way to make the file directory cleaner as in easier to navigate
- Still conducting research on which price comparison and product review website to use in our extension
- Continue doing the programming section

Week 7

This week, we had a Q&A session with our supervisor on the assignment submission (prototype) and had a short meeting after the session. The things we discussed:

- Finalized on what website to use for the price comparison and product review
- Highlighting the points and things to add in the prototype presentation
- Identifying the bug that causes random advertisement to appear on the “modified” eBay’s page
- Continue doing the programming section

Week 8

We had a group meeting on discord and the topic was the prototype presentation. The things we discussed:

- Identified the things needed to be present in the video presentation
- Allocated the tasks to each member
- Making sure all the necessary features are at least in working condition
- Continue doing the programming section

Week 9

We had a short group meeting and nothing much was discussed. We had this meeting to ensure everyone was on track.

Week 10

The submission of the video prototype presentation was successful, and we had a group meeting. The things we discussed:

- The project is almost done, needed some additional refinement
- Price comparison and product review feature are working correctly as they intended
- All members started reading the upcoming submission requirement

Week 11

This week, we had a Q&A session with our supervisor clarifying the upcoming submissions and a short group meeting. The things we discussed:

- The group website is completed and published
- The programming part is completed, double checking if there are any errors on the codes
- Allocated the assessment tasks to all members (final documentation, presentations, and product demo)

Week 12

Submission of our final code was successful. We had a short group meeting and nothing much was discussed. We had this meeting to ensure everyone was on track with their tasks.

References

- Anon, How to Prepare for the Post-Project Evaluation. *Dummies*. Available at: <https://www.dummies.com/careers/project-management/how-to-prepare-for-the-post-project-evaluation/> [Accessed June 7, 2020].
- Anon, 2018. Project Transition – Transitioning from Implementation to Maintenance. *Reqtest*. Available at: <https://reqtest.com/blog/project-transition-plan-implementation-maintenance/> [Accessed June 7, 2020].
- Odhiambo, D., 2018. System Design in Software Development. Medium. Available at: <https://medium.com/the-andela-way/system-design-in-software-development-f360ce6fcbb9> [Accessed June 7, 2020].

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Marketing Presentation

Introduction

Knowledge of issue

Purpose of the product is to ensure every dollar spent on eBay is a dollar worth spending. Provide clarity, no regrets

1. Remove upselling and cross selling practices across eBay
2. Give users ability to read third-party reviews for better confidence before buying
3. Provide a way to view prices for similar items from outside eBay

Target Market Analysis

Primary target market:

- Reside in Australia, particularly NSW. English speaking
- Age 15 - 40 (born 1980 - 2005)
- White collar, pink collar, stay-at-homes, students
- Average/below-income families
- Fully adopted the Internet, uses Google Chrome for desktop (chrome users)
- Shops on ebay.com.au

Why this Demography?

- Age of target market is reachable. Interactive, simple, gradual learning curve
- Socially active, potential for strong word-of-mouth
- Saving money can be appreciated by the majority of people
- Extensions are inherently intuitive, but needs familiarity with using it
- Location-wise, extension only works on ebay Australia

Niche market/competition?

A lot of extensions for eBay on Google Chrome, but the market our extension fills is still quite niche, although we found at least two competitors with similar features.

1. Price Tabs - Amazon, eBay, Price Comparison
2. eBay & Amazon Adblocker No Ads & Sponsored Items

Electronics, Cars, Fashion X | Chrome Web Store - ebay X | iphone | eBay X | Alexa Echo Dot (3rd Gen) X | Extensions X | +

ebay.com.au

20% off* Lenovo on eBay

G'day CDL! ebayplus eBay Deals Coles on eBay Help

10% off* Coles on eBay

Sell Watch List My eBay Bell Cart

Open ▾

ebay Shop by category

Search for anything All Categories

Search Advanced

CDL, here's AU \$5 off
Limited time only. T&Cs and exclusions apply.

Home Saved Fashion Motors Home & Garden Electronics Sports Liquor & Grocery Health, Beauty & Baby Toys & Hobbies Collectables Deals & Sales

eBay Plus Month is Here
New members unlock 30 days of deals for free.*

Start Free Trial →

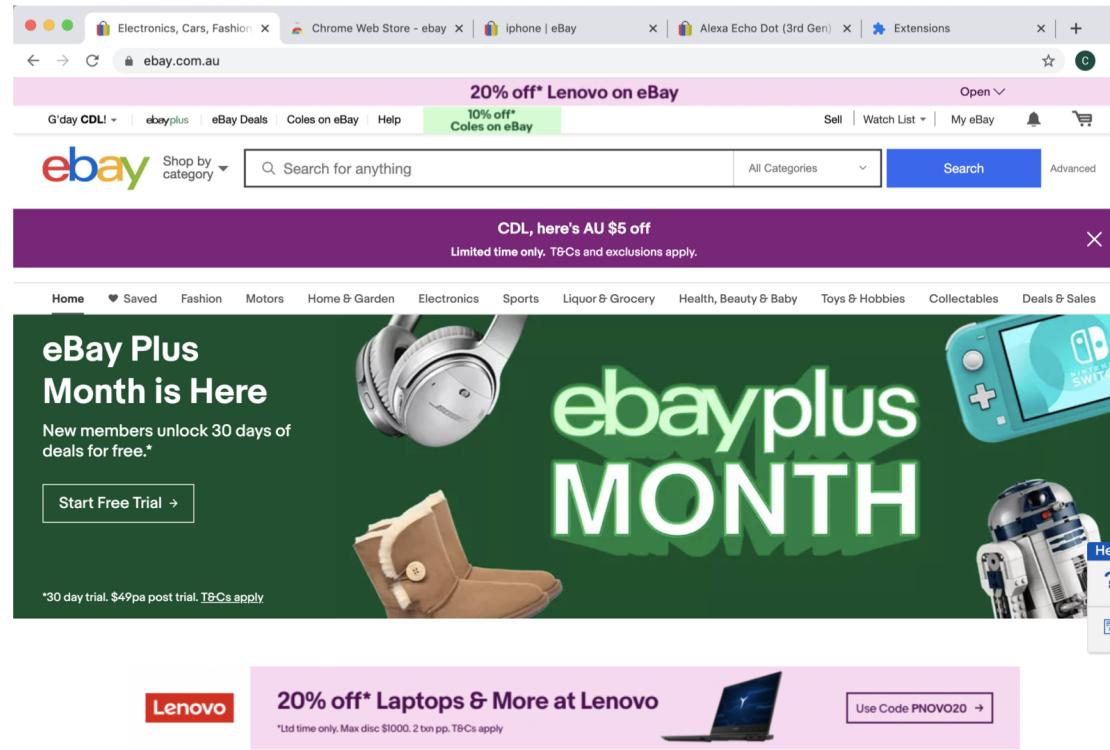
*30 day trial. \$49pa post trial. T&Cs apply

ebayplus MONTH

Lenovo 20% off* Laptops & More at Lenovo Use Code PNOVO20 →

*ltd time only. Max disc \$1000. 2 txn pp. T&Cs apply

This Week's eBay Plus Month Deals See all →



before

A screenshot of the eBay homepage. At the top, there's a navigation bar with tabs for 'Electronics, Cars, Fashion' and 'Chrome Web Store - ebay'. Below the navigation is a search bar with placeholder text 'Search for anything', a 'All Categories' dropdown, and a blue 'Search' button. A purple banner at the top of the main content area says 'CDL, here's AU \$5 off Limited time only. T&Cs and exclusions apply.' Below the banner, there's a 'Help' button with a question mark icon. The main content area features a 'Recently Viewed Items' section with thumbnails of a smartphone, a laptop, a car, headphones, and a pair of shoes. To the right, there's a 'This Week's eBay Plus Month Deals' section with circular icons representing various products.

CDL

eBay &

Amazon Adblocker

A screenshot of the eBay homepage. At the top, there's a navigation bar with tabs for 'Electronics, Cars, Fashion' and 'Chrome Web Store - ebay'. Below the navigation is a search bar with placeholder text 'Search for anything', a 'All Categories' dropdown, and a blue 'Search' button. A purple banner at the top of the main content area says 'CDL, here's AU \$5 off Limited time only. T&Cs and exclusions apply.' Below the banner, there's a 'Help' button with a question mark icon. The main content area features a '20% off* Lenovo' section with a thumbnail of a laptop and a red 'Lenovo' logo. To the right, there's a 'This Week's eBay Plus Month Deals' section with circular icons representing various products.

Apple iPhone X 64GB 256GB | Chrome Web Store - ebay | iphone | eBay | Alexa Echo Dot (3rd Gen) | Extensions

ebay.com.au/itm/Apple-iPhone-X-64GB-256GB-Silver-Grey-Unlocked/183796992616?hash=item2acb278a68:m:mCiQ4vmvSFOztWtWRQ8bFA

Have one to sell? Sell it yourself

Full Phone and Gadget Protection from XCover.com - AU \$106.43

I am over 18 and have read and agree to the policy terms (including the PDS and FSG). The policy is provided by XCover.com and underwritten by Pacific International Insurance Pty Ltd.

100% buyer satisfaction Click & Collect 140 sold

From only AU \$654.00 [Show me how]

Collection: Click & Collect - Select store at checkout.

Postage: FREE Express delivery [See details]
Get it FREE by Thu. 11 Jun. with ebayplus | Try it for free

Item location: Frenchs Forest, Australia
Posts to: Australia

Delivery: Estimated between Tue. 9 Jun. and Fri. 12 Jun. ⓘ

Payments:

Returns: 30-day buyer pays return postage [See details]

Similar sponsored items 1/2

AUSTRALIAN STOCK iPhone X
iPhone X 10

SALE 50% OFF U POST Express Post iPhone XS
iPhone XS 256GB

Express Post iPhone X 256GB 64GB
iPhone X Ten 10

iPhone X
iPhone X

AUSTRALIAN STOCK iPhone X
iPhone X 10 |

Mobile Federation Feedback
iPhone X Face ID

Feedback on our suggestions

before

Apple iPhone X 64GB 256GB-Silver-Grey-Unlocked/183796992616?hash=item2acb278a68:m:mCiqQ4vmvSFOztWtWR...

Add to Watchlist

100% buyer satisfaction Click & Collect 140 sold

From only AU \$654.00 [Show me how]

Collection: Click & Collect - Select store at checkout.

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Get it FREE by Thu, 11 Jun. with ebayplus | Try it for free

Item location: Frenchs Forest, Australia
Posts to: Australia

Delivery: Estimated between Tue, 9 Jun. and Fri, 12 Jun. ⓘ

Payments:

Returns: 30-day buyer pays return postage | See details

Compare Price **Product Review**

Description Postage and payments Report item

Seller assumes all responsibility for this listing.
Last updated on 04 Jun, 2020 20:38:06 AEST [View all revisions](#)

Item specifics

Condition:	Seller refurbished: An item that has been restored to working order by the eBay seller or a third party not approved by ... Read more	Camera Resolution:	12.0 MP
Processor:	Apple A11 Bionic	Contract:	Without Contract
Screen Size:	5.8-inch touchscreen	Features:	Bluetooth
Style:	Bar	Lock Status:	Network Unlocked
Camera:	12.0 MP	Model:	Apple iPhone X
Brand:	Apple	Network:	GSM Unlocked
MPN:	Does Not Apply	Operating System:	iOS
Manufacturer Part Number:	Does not apply		

Feedback

eBay item number: 183796992616

Apple iPhone X 64GB 256GB-Silver-Grey-Unlocked/183796992616?hash=item2acb278a68:m:mCiqQ4vmvSFOztWtWR...

Add to Watchlist

100% buyer satisfaction Click & Collect 140 sold

From only AU \$654.00 [Show me how]

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Get it FREE by Thu, 11 Jun. with ebayplus | Try it for free

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Screen Size:	5.8-inch touchscreen	Features:	Bluetooth
Style:	Bar	Lock Status:	Network Unlocked
Camera:	12.0 MP	Model:	Apple iPhone X
Brand:	Apple	Network:	GSM Unlocked
MPN:	Does Not Apply	Operating System:	iOS
Manufacturer Part Number:	Does not apply		

Feedback

eBay item number: 183796992616

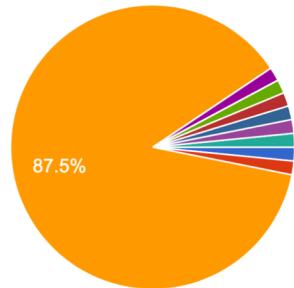
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Occupation

64 responses



● Civil servant / government employee

● Entrepreneur

● Student

● Teacher

● Blue-collar

● White-collar

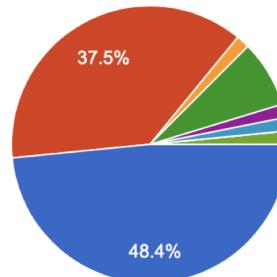
● Housewife / househusband

● A combination of many

▲ 1/2 ▼

Age

64 responses



● < 21

● 21 - 25

● 26 - 30

● 31 - 35

● 36 - 40

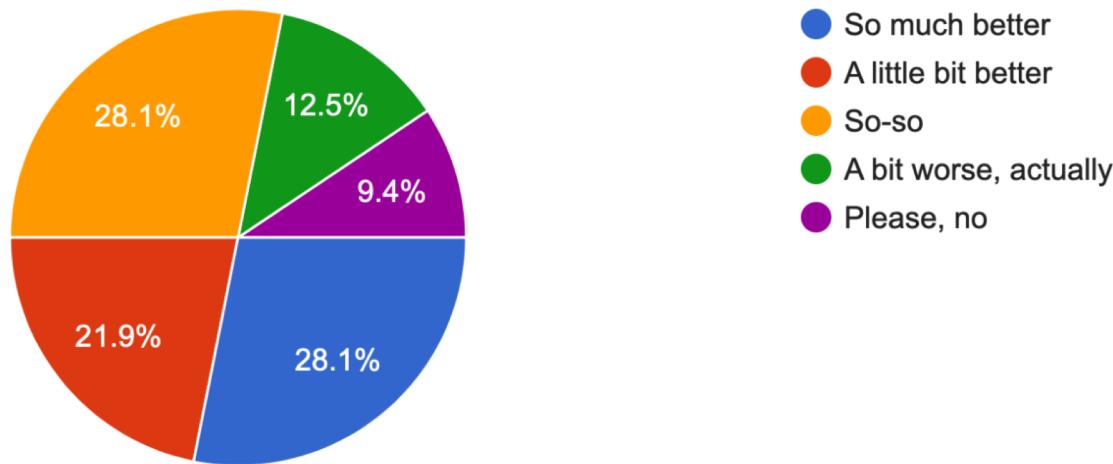
● 41 - 50

● 51 - 60

● > 60

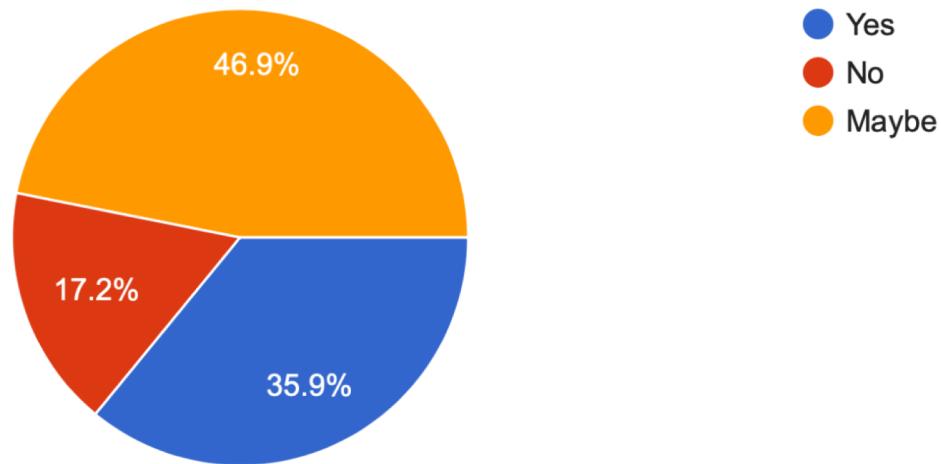
How would you feel if eBay's home page looked like Google's?

64 responses



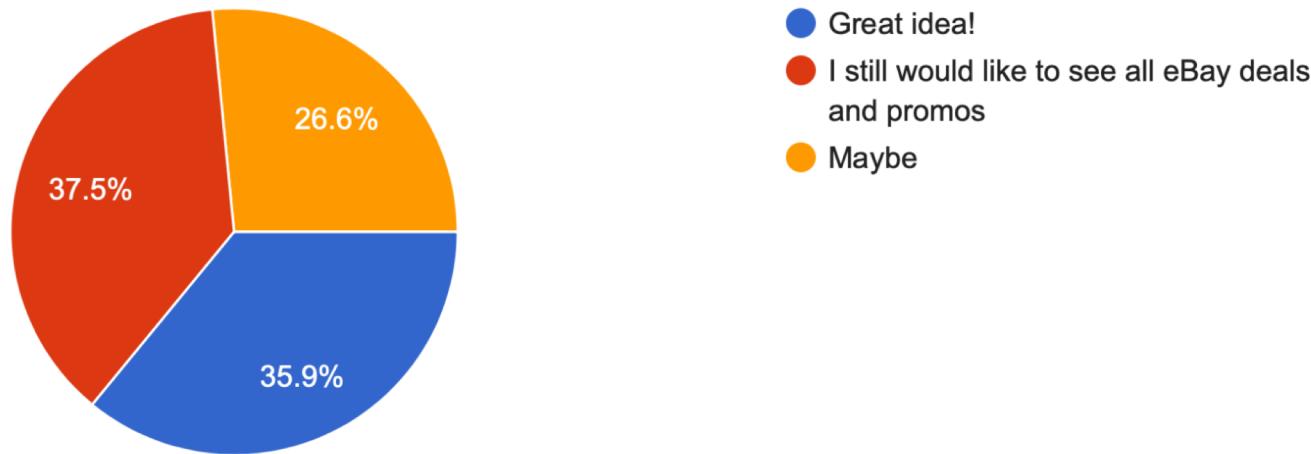
Do you think eBay's recommended, suggestion and promo items are attractive?

64 responses



How would you feel if suggestions, recommendations, and promos shown are reduced to hinder impulsive shopping?

64 responses



Advantages of our eBay's extension

After activating our extension:

- Users are able to compare item's price with third party price comparison website with a click of a button
- Users are able to read the product reviews before purchasing an item from eBay
- New users will have a better navigation experience as we decluttered the webpage space to improve user experience
- Has feedback form for further changes via Google Forms

Marketing mix

We have integrated marketing mix (7Ps) when developing the extension:

- **Price:** our eBay's extension will be free to download
- **Place:** will be available in all browsers (currently only available in Google Chrome)
- **Product:** our eBay's extension is developed based on the feedback and matching the requirement of the users (removal of ads, up-selling, price comparison and product review)
- **Promotion:** promotion via online communications
- **Physical Evidence:** our eBay's extension will be available on Google Chrome extension
- **People:** Developers (us) and the eBay users (consumers)
- **Process:** will provide a user manual on how to activate our extension

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Technical Presentation

Introduction

Knowledge of Issues

Purpose of the product is to ensure every dollar spent on eBay is a dollar worth spending. Provide clarity, no regrets

1. Impulsive buying, no value in purchase
2. Could buy at a cheaper price
3. Messy user interface, esp. Home page
4. Aggressive advertising
5. Lack of proper product reviews

Technology Used

Platform - Google Chrome (Windows 10, macOS)

Design - Axure RP

Tools - Chrome DevTools, Notepad++, TextMate

Programming - Javascript, jQuery, HTML, CSS

Collaboration - Discord, Facebook Messenger, Google Docs, UOW Mail

Client Meeting - Cisco Webex, Zoom

Development Process

Brainstorming

- Group name
- Client requirements
- Features
- Functionalities
- Extras
- Milestone
- Delegated task
- Weekly meeting
- Documentation

Set Up

- Files
- Library used
- Technology used
- Code sharing
- Testing environment

manifest.json

- Specify the base of this project
- Resources used
- Icons
- Background files
- Content script files

Features & Functionality

Main features:

- Remove Upselling and Cross-selling (noise)
- Compare Price
- Product review

Extras:

- UI changes

Removing Noise

- Look for possible object categorize as upselling and cross-selling
- Look for advertisement object
- Detach or remove

Compare Price

- New button
- New model
- Fetching data from third party website (getprice.com)
- Check similarity with the item name
- Give a list of similar product inside the modal

Product Review

- Fetch item name
- URL coded the item name
- Include in search page url in productreview.com.au
- Open in new tab to ensure it's the correct product

UI Changes

- Simple and Obvious
- Decluttering
- Easy to use