**Inspiration - Bar tap:**

**-description: a corded drink dispenser system that pumps out liquid**

**-benefits: controllable amount, ease of use(trigger), reach (cord)**

**-corresponding inspired features**

Development motivation

Learning to cook could be a tedious and dispiriting experience. One could struggle to identify different condiments and follow precise servings instructions from recipes. These hurdles could seriously disrupt the learning flow of beginner chefs and hinder their progress.

Our team envision a battery-powered multi-functional condiment dispenser targeted at beginner cooks to help this population tackle the mentioned inconvenience by mechanising the selection, measurement, and dispensing procedures, making them controllable with a few buttons. Multiple condiments stored would be dispensed independently upon selection, saving the time and effort in identifying and emptying individual canisters.

Inspiration

Drawing inspiration from hosed taps in bars, where drinks are dispensed out of a shower head system, we formulated some major features of our product. The ability to control the amount dispensed, combined with the intuitive trigger control made the taps easy to use. We wish to replicate this in our product with a comprehensive UI, where users would be able to select the condiment and its respective volume to be dispensed with ease.

We observed that the operable area of bar taps is limited by the hose joining the storage container and showerhead, which is not ideal in our circumstances. To improve on this aspect, our device would be cordless, powered by an onboard battery, allowing more freedom for beginner cooks.

**Why develop?**

* **existing problems:**
* **planned solutions:**
  + **fine powder only**
  + **Target audience: beginner cooks following recipes**

 One of the biggest inconveniences for beginner cooks when following recipes is to identify and add the precise amount of condiment to a dish. Not only is this a time-consuming process, condiments, which usually come in small bottles, often clutter up the kitchen space and bring nuisance to the cooking process, as users can often confuse the condiments with one another.

The aim of this project is to provide an automated method for beginner cooks to control the amount of condiment added while following a recipe. Inspired by drink taps in pubs, our product is an all-in one condiment dispenser which is capable of housing multiple condiments in powder form and allowing users to input and dispense precise amounts of condiment all at once through a userfriendly interface. Designed with portability in mind, the device is lightweight and battery-powered so that the user can use it around the kitchen. The device can be refilled with condiments via a docking station, which stores the condiment supplies. When the device is docked, condiments are refilled through a gravity feed and the batteries are recharged at the same time.

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1. **UI F**
   1. **1.8”LCD screen, buttons**
   2. **Select condiment, assign amount, press dispense**
2. **Dispensing mechanism M**
   1. **Servo pushes channel, tip opens up valve**
   2. **Clog-free (clog prevention coating, geometry)**
3. **Measurement (control amount) M**
   1. **Flowrate consideration, control by dispensing time**
   2. **High accuracy**
4. **Channel selection M**
   1. **Rotating cartridge by high accuracy motor**
5. **Food safety F**
   1. **Air-tight seals, anti-microbial surface coating**
   2. **No cross contamination (individual compartments)**
   3. **Humidity control sachet**
   4. **Ease of disassembly/cleaning**
6. **Aesthetic/ Ergonomics/User-friendly features F**
   1. **Lightweight**
   2. **Battery-powered and rechargeable**
   3. **Refillable - gravity-fed at docking station**
   4. **Nice looking**

Features

Mechanism

<iframe src="https://www.google.com/maps/embed?pb=!1m14!1m8!1m3!1d9931.960753778316!2d-0.2251247!3d51.513396!3m2!1i1024!2i768!4f13.1!3m3!1m2!1s0x0%3A0x7b0b5a36965f1853!2sThe%20Invention%20Rooms!5e0!3m2!1szh-TW <li>!1szh-TW!2suk"

List

<ul>  
  <li>Coffee</li>  
  <li>Tea</li>  
  <li>Milk</li>  
</ul>

Ordered list

<ol>  
  <li>Coffee</li>  
  <li>Tea</li>  
  <li>Milk</li>  
</ol>

**The tools used for website design and why they were selected**

* **Atom** (text editor)
  + [Free and open-source](https://en.wikipedia.org/wiki/Free_and_open-source_software), developed by and integrated with [GitHub](https://en.wikipedia.org/wiki/GitHub)
  + modular, hackable, allowing users to install third-party packages and themes to customize the features and looks.
* **Bootstrap** (design theme)
  + responsive web design framework
  + Good community support and documentation
* **Github** (upload to the internet)
  + free private repositories
  + High free storage limit (100GB)

**b.      A description of the steps taken to register and setup the domain name for the website**

Once you’ve signed in, you’ll create a new repository to get started.

On the new repository screen, you need to give this repository a special name to generate your website.

**new-repo-screen**

Your website’s files will live in a repository named username.github.io (where “username” is your actual GitHub user name). To begin setting up your site, you have to open the Settings tab

**settings-tab**

If you scroll down on the settings page, you’ll see the GitHub Pages section near the bottom. Click the Choose a theme button to start the process of creating your site.

Once you’re finished editing, scroll down to the bottom of the page and click Commit changes.

**commit-edits**

GitHub does all the work to direct visitors to username.github.io to view your new website. This can take up to 10 minutes. After some time has passed, you can open a new tab in your browser to go to your site!

**A section titled “*Development*” that describes:**

**i.    What makes a good website?**

1. Performance:
   1. Fast loading pages
      1. optimizing image sizes, combing code into a central CSS or JavaScript file as it reduces HTTP requests. Also, compress HTML, JavaScript, and CSS for enhanced loading speed.
   2. Navigation
      1. creating a logical page hierarchy, using bread scrums, and designing clickable buttons. You should follow the “three-click-rule” so that visitors can get the required information within three clicks.
   3. Flexible visuals
      1. responsive and adaptive one for all screen sizes.
2. Visual design:
   1. Simplicity, Basic understanding of typography
      1. Clean and fresh design of your website not only makes the website appealing but also help the user to navigate from one page to another seamlessly
      2. Consistency in website design (fonts, sizes, headings, sub-headings, and button styles)(CSS)
      3. fonts that are easier to read
      4. keep your typography visually appealing and readable for visitors, along with the tricky use of keywords, meta-data, and other SEO-sensitive elements
   2. Good usage of negative space (breathing room)
   3. perfect color palette for your website which can create a pleasing atmosphere, thus leaving a good impact on visitors. Enhance users’ experience by selecting a complementary color palette to give a balanced-look to your website design.

**ii.      A description of accessibility and the considerations you have made for it**

1. Perceivable
   1. Provide text alternatives for any non-text content so that it can be changed into other forms people need, such as large print, braille, speech, symbols or simpler language.
   2. Provide alternatives for time-based media.
   3. Create content that can be presented in different ways (for example simpler layout) without losing information or structure.
   4. Make it easier for users to see and hear content including separating foreground from background.
2. Operable
   1. Make all functionality available from a keyboard.
   2. Provide users enough time to read and use content.
   3. Do not design content in a way that is known to cause seizures.
   4. Provide ways to help users navigate, find content, and determine where they are.
3. Understandable
   1. Make text content readable and understandable.

**iii.      A description of GDPR and the considerations you have made (or should make) for privacy on your website**

GDPR description

GDPR stands for General Data Protection Regulation. It’s a data privacy and protection regulation slated to officially begin on May 25, 2018.

GDPR is designed to provide better protection of personal data—or personally identifiable information (PII) —to people living in the EU. In order to do so, the regulation imposes new, specific obligations on “controllers” and “processors” of personal data, enforcing major fines if companies fail to be compliant.

When it comes to data privacy, GDPR is a massive step forward in eliminating personal data breaches and establishing a need to receive consent from a user before collecting and using their data.

The GDPR sets out seven key principles:

* + Lawfulness, fairness and transparency
  + Purpose limitation
  + Data minimisation
  + Accuracy
  + Storage limitation
  + Integrity and confidentiality (security)
  + Accountability

GDPR considerations

**DESIGN REQUIREMENTS**

**CONSENT AND SUBJECT ACCESS MECHANISMS**

We all need to be informed about the data flows containing our information, and our rights over them, in the most privacy-positive ways possible.

On the front end, this means providing better consent mechanisms and user controls. Your projects and applications should provide optimal control over consent settings through things like control panels, user dashboards, account settings, and privacy centers.

Additionally, consent must never be assumed through a lack of action, such as a failure to tick a box or the mere creation of an account, so you should develop ways to alert users to the fact that they have not yet granted opt-in consent to any applicable choices and options.

**TESTING AND MAINTENANCE**

penetration testing.

Your privacy testing procedures should predict the ways unauthorized users would access actual data on your system

Testing for data protection by default should also consider external alerts. Do you have a means for the public to alert you to data breaches, either potential or real? What about bug bounties and responsible disclosure programmes? And remember the golden rule of GDPR — document it, or it didn’t happen. Your testing results, and the methodologies you used to achieve them, need to be noted and actioned as living documents.

**iv.      The marketing steps you would take to drive people to your website**

1. Solidify your website SEO
2. Take advantage of email marketing
3. Try guest blogging
4. Harness the power of social media
5. Submit your site to online directories
6. Post on forums
7. Reach out with outreach marketing
8. Say it with your signature

<https://www.wix.com/blog/2018/06/promote-website-free>

**v.      Future steps you would take if given additional time. This should include steps required to expand and e-commerce.**

How to Set Up an Online Store

1. Find your perfect ecommerce website builder.
2. Choose the best plan for you.
3. Get a domain name for your store.
4. Pick your ecommerce template.
5. Customize your ecommerce template.
6. Add your products.
7. Set up payment methods.
8. Sort out your shipping settings.
9. Preview, test… and publish your online store.

<https://www.websitebuilderexpert.com/building-online-stores/>

8 steps (<https://www.freshegg.co.uk/blog/web-development/getting-started-with-e-commerce>)

**1.     Choose your domain name**

The first thing you will need to get started with e-commerce is a domain name for your website. Domain names can be purchased through hosting companies, or domain registrars. A point to consider is the target market for the new domain: will you be targeting just your local market or an international one? If you are targeting multiple regions or countries, do you need to purchase more than one domain name, or can you deliver everything through a single domain on a non-country specific top level domain (TLD)?

**2.     Obtain a secure (SSL) certificate**

If you are not using a pre-packaged e-commerce service, then alongside the domain name you will also need to obtain an SSL certificate. An SSL certificate is needed to secure communications between a visitor’s web browser and the web server hosting your website. There are many providers of SSL certificates (for example, [Thawte](https://www.thawte.com/) or [Symantec](http://www.symantec.com/en/uk/verisign/ssl-certificates)). Alternatively, some hosting companies will take care of the SSL for you, so you may be able to purchase through your web host. Costs vary between providers and you'll need your domain name registered before you can purchase an SSL certificate.

**3.     Choose the right hosting package**

All websites have to sit on a server somewhere. Choosing the right hosting package is important for more than one reason:

**Website speed**

Hosting your website in the same country that you’re selling to can have an impact on how quickly the website loads. If you’re selling to a multi-national market, then consider the use of a content delivery network (CDN) to help localise your site to different target countries.

Google has hinted that site speed is a ranking factor in its algorithms so there are SEO benefits to having a good host, as well as the obvious user benefits.

**Uptime and performance**

The reliability of the host to keep the website up and running is vital. If the website spends half the time offline, then you won’t be taking any orders.

At certain points of the year, such as Christmas, the demand on your website will (hopefully) increase significantly. It’s important to understand how the extra traffic will increase the load on your webserver and the impact that can have on the site’s performance. Too much traffic may even cause the server to trip over and crash, taking your site offline. Cloud hosting solutions are a good option for dealing with increasing demand, as it’s possible to scale the server capacity up in line with demand.

**Shared hosting environments**

If you are considering shared hosting as an option for your e-commerce site, then think again. As you have no way of controlling who is hosting on the same server as you, it's not a good idea to enter into shared hosting – you won’t be able to maintain control of the security of your site’s environment.

The other companies hosting their websites on a shared server may not be as diligent in their security procedures and could unwittingly provide a hacker with a backdoor into your website. A data breach can be highly disruptive to your business, destroy your online reputation and leave your customers’ personal details open to anyone who cares to look.

Most web hosts will be able to offer Payment Card Industry (PCI) compliant hosting for an e-commerce customer.

**4.     Choose the right e-commerce platform**

Selecting the e-commerce platform that your website will run from is an incredibly important decision. Changing platform at a later date can be a very time consuming and expensive operation, if you have thousands of products to move.

There is a vast range of e-commerce platforms available, in the form of Software as a Service (SaaS) storefronts, off-the-shelf software, or bespoke solutions. Each has their own benefits and drawbacks.

**Software as a Service (SaaS)**

For a small monthly payment, an aspiring online retailer can set up a cheap and cheerful e-commerce business. Providers such as [Shopify.com](http://www.shopify.com/) or [Bigcommerce.com](http://www.bigcommerce.com/) offer mass market, template builds with a configurable front end presentation.

These solutions are great for dipping your toe in the water and finding out how the world of e-commerce works. It’s very quick to throw together a website that looks nice and functions. However, the platforms are heavily templated and making adjustments to your site to add in large-scale customisations is not an option. There’s little to differentiate between the different e-tailers on these platforms.

**Off-the-shelf software**

Off the shelf solutions are sold on the mass market basis, but tend to require a higher level of technical ability to set up and do allow for much more in the way of customisation to the platform. [Magento](http://magento.com/), [Zen Cart](https://www.zen-cart.com/), and [Kentico](http://www.kentico.com/) are examples of open source, off-the-shelf e-commerce software, all of which are highly feature-rich and extendable.

A major drawback to any off-the-shelf solution is the amount of unnecessary features that often come bundled into the platform. Tools that are designed to meet the needs of the mass market often end up over delivering to individual businesses that need only a small selection of the services on offer.

As with SaaS solutions, it’s not easy to differentiate your site from the competition. Hundreds of sites run on the Magento platform and all function in exactly the same way. It’s possible to add plugins to the sites, but those plugins are available to all. If a competitor sees that it’s working for you, it’s easy enough for them to copy.

**Bespoke software**

A bespoke solution will be able to give an e-tailer exactly what they are looking for from their e-commerce platform. However, there is no way around the fact that bespoke solutions tend to cost more than off-the-shelf software, as there is a much higher requirement for customisation to set the package up.

A bespoke solution can be a much leaner solution, optimised for the requirements of your build and without the excess baggage that can be included with off-the-shelf platforms.

**5.     Secure an internet merchant account (IMA)**

In order to take money online, you need to secure an internet ready bank account called an internet merchant account (IMA). High street banks can set these accounts up for you, although they have a number of requirements that you will need to meet to qualify for an account.

Internet merchant accounts differ from normal merchant accounts as you have no direct access to the funds collected until they are cleared by the bank. The amount of time it takes for the funds to clear will vary depending on the perceived risk associated with your business.

**6.     Choose a payment service provider (PSP)**

Once you have an IMA for your business, you will need to decide on a payment service provider (PSP), otherwise known as a payment processor or payment gateway. Some banks will suggest a PSP when issuing the merchant account, but if possible it pays to shop around as the charge rates differ between them: it’s nearly always possible to find a cheaper deal.

Most PSPs will allow you the choice of using their payment pages, or self-hosting the pages of your checkout. Self-hosting can give a more seamless checkout experience but can lead to increased risk for security and require different levels of compliance from the PCI.

There are a number of ongoing requirements for PCI compliance, such as running regular vulnerability assessments against your website. These scans can either require a qualified security assessor or an approved scanning vendor to periodically check your website for known vulnerabilities.

Meeting the standards for compliance helps to protect your business from being breached and keeps your customers’ data safe.

**8.     Ongoing digital marketing**

Once you’re up and running and ready to take orders, you need to drive visitors to the website. With a bricks and mortar establishment, some visitors will be attracted simply by walking past the shop, but not so with online marketing.

Although a well optimised platform will get noticed by search engines, it is necessary to actively promote your website to draw in relevant traffic that’s needed to drive orders. It’s important to plan your digital marketing activity and set aside some budget to help promote your website for the longer term.

*5.*  *Contact us* – this does not need to be real contact information. This should have all of the details for all forms of contact for your team including social media (you do not have to include functional links). **10 marks (10 functionality)**