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Project #1

             Many people live in the digital age with their heads and thoughts buried deep into a screen on a smart device. Although many users interact daily with the internet and technology, several are oblivious to just how sophisticated the software they use is. Facebook, Amazon, and Google are among the top website applications used by millions daily. Each of these applications has a unique set of data it collects. Often, this data is translated into an attractive graphical user interface for the end-user. Beyond the data and user interface, is the programming language that runs to make everything function seamlessly.

             Facebook currently ranks amongst the top social media platforms used internationally. Over two million users are active monthly. Like all social media sites, Facebook can be used with malice or without. You cannot browse Facebook without creating a user profile. With that being said, Facebook collects specific data. Facebook receives a variety of personal data via user input. This information includes name, gender, date of birth, email, phone number, location, and more. This personal data is later used to target the Facebook user with ads that are pertinent to their political clubs, groups, alumni associations, and more. In addition to personal information, Facebook keeps track of the user’s activity, which is essentially a log of every click, comment, and other action taken on the platform. Facebook also collects data from third-party apps that users connect to. For example, if an application gives the option to sign up via Facebook, the user must authorize the application to make read and write changes. The two platforms then exchange data. Beyond the data collected is Facebook’s graphical user interface. This means that the UI allows the user to be interactive. This application is known for using visual hierarchy to organize and streamline photos and posts the Facebook users upload or share. The UI also allows the user to add, delete, and block other profiles as they please.

On the other hand, it uses data analytics to recommend friends he/she may want to add or request. People of all walks of life use Facebook, and part of what allows so many diverse users to utilize the same application is the easy readability and navigation of the GUI. For example, the white background and black text make the text appear more vivid. This allows for better visibility and legibility. One of the final dimensions of Facebook is the logic it uses. Facebook is built on Linux, Apache, SQL, and PHP. The front end of Facebook uses JavaScript, and the backend utilizes C++, java, and python. It also utilizes Memcached in an effort to cache a layer between the web server and MySQL servers. In order to retrieve photos, it uses software called Haystack. The logic behind the programming of Facebook begins with the user creating a profile. The user inputs their personal information, adjusts their own settings, uploads a phone, and begins to build their network by adding and requesting other profiles. If you want to access a third party app or an application within Facebook, you send a request to the server, which will then verify that data and return the data. Additionally, Facebook uses an application programming interface based on a representational state transfer (REST) interface. This interface uses independent components to maximize the efficiency of data transfers. Facebook continues to dominate in the social realms by continually updating its interface and features. Alongside social media is the online domination of commerce.

             Amazon has become a one-stop-shop for many end-users. It uses big data to cater to its users. It collects data on its customers s they use the site. For example, many people use Amazon to order from. In order to have an item shipped from Amazon’s warehouse, the user must create a profile with their shipping address. This will actually give Amazon geolocational data that can then be used to analyze the average income in that area. This is why some people get selected to receive free products and review it while others don’t. Amazon also stores financial information, phone numbers, and email addresses. Amazon is unique in that it not only collects data from its users but from its retailers as well. This site allows shops to upload information about a product they are selling, whether it be food, books, or toys. The programming logic used to handle amazon’s business intelligence consists of Hewlett-Packard servers that run Oracle on Linux. Any user that utilizes Amazon must connect to a browser. The cookies, HTTP headers along with other browser and device information are stored and collected by Amazon’s servers. There is additional information that is collected as the user navigates the user interface. In order to place an order on Amazon, the individual must create an account utilizing their phone number, email address, and name. If the user decides to order groceries or any sort of item, then he/she will need to provide their card information and physical shipping address. Once the user creates an account, Amazon will display an interactive screen with various tabs and links. This is essentially the homepage where the user can jump from category to category. Amazon offers several services and products. The user can opt to order a product by searching it into the search field, placing the item in the cart, and requesting it. The user can also choose to subscribe to a service such as Amazon’s FRESH grocery delivery program. The information that is selected will then be used by Amazon to help recommend similar products and services that match that user’s tastes. Furthermore, Amazon allows users to post on forum boards, post reviews, and ask questions. Information such as the ratings are used to recommend similar items. Amazon utilizes customer and retailer information to tailor recommendations. This helps increase sales. Amazon’s programming logic and processing are dependent on the programming language used. Amazon.com tends to use javascript and C++. Other services that are used are python and ruby. Amazon is the leader in online commerce. The processing logic for this begins once an individual logs onto the website via browser. Once you have created an account, the site will change product recommendations based on previous searches and purchases. Once you find a product you want, you add it to the shopping cart. You then enter billing and shipping information. Amazon’s database then processes this order through a backend system. Orders from third-party sellers are routed to Amazon, which takes a percentage of sales. Amazon uses algorithms, which is a set of instructions made from code. Amazon’s fulfillment center will get this order and then get them ready for delivery. Amazon backend routes the order to the nearest fulfillment center, where a picker finds it. In order to secure customer payment, Amazon uses a secure sockets layer, or SSL, which offers protection information from third-party sources. Amazon is currently in the process of moving all its services to Amazon Web Services platforms. Amazon shows excellent promise to maintain its ranks amongst online businesses.

             Google is one of the world’s top search engines. Google’s safety center is transparent about what data it collects. When you use Google to either watch videos or get directions, it collects a variety of data. This includes video history, clicked ads, locations, cookies, websites you visit, search history, apps, browsers, and devices used to access Google services. Google does not require that you create a count but does offer email and other services. This user profile data is also collected. For example, name, birthday, gender, and phone number are all collected. This also includes contacts you add, photos, videos, and documents you interact with, whether it is accessing them or creating those documents. The google graphical interface is very streamlined and straightforward. First, you access the website by typing in [www.Google.comc](http://www.Google.comc) into a browser. This address is then translated to an IP address that hits DNS port 53. DNS port 53 then translates the characters to an IP address that the computer and routers will understand. Once this connection is made, you will be on Google’s homepage. Google’s home page consists of several hyperlinked categories at the top, such as 'shopping,' 'flights,' and 'mail.' At the center of the page is Google in large colorful letters with a simple search bar underneath. Google sometimes changes the aesthetics of the word “Google” based on holidays, weather, and people. Google has a variety of processing logic, depending on what services you are using. For example, when you use Google maps on your phone, your phone sends anonymous geolocational data back to Google. This data is then combined with data from people around you to pick up traffic patterns. Additional data such as detection of slow speeds, streets, and heavy traffic are all used to keep the maps up to date. When it comes to search services, Google uses spelling correction data from people who have made typos to autocorrect and search based on whatever words you type- all this information is stored on servers in databases. Google uses five main programming languages. These are C++, Python, Java, Javascript, and GoLong. Nonetheless, there are other search engines that exist. These include Bing and Yahoo but still lag behind Google’s popularity.

             Many people worry about websites collecting information, but the reality is that data utilization is necessary to cater to the wants and needs of consumers. Google, Amazon, and Facebook all have a privacy page that the average person can access. There is a lot that goes on behind the scenes of applications. This begins in the programming languages used and the scripts utilized to bring the website applications to life. Much like an assembly line in a factor, programming utilizes certain processing logic to communicate between the code and the end-user. The future of technology is held in the average person’s hand; they just may be unaware of just how much software and power they are truly interacting with.