IS2109 Information Systems Security - Practical 6

Secure Web Browsing

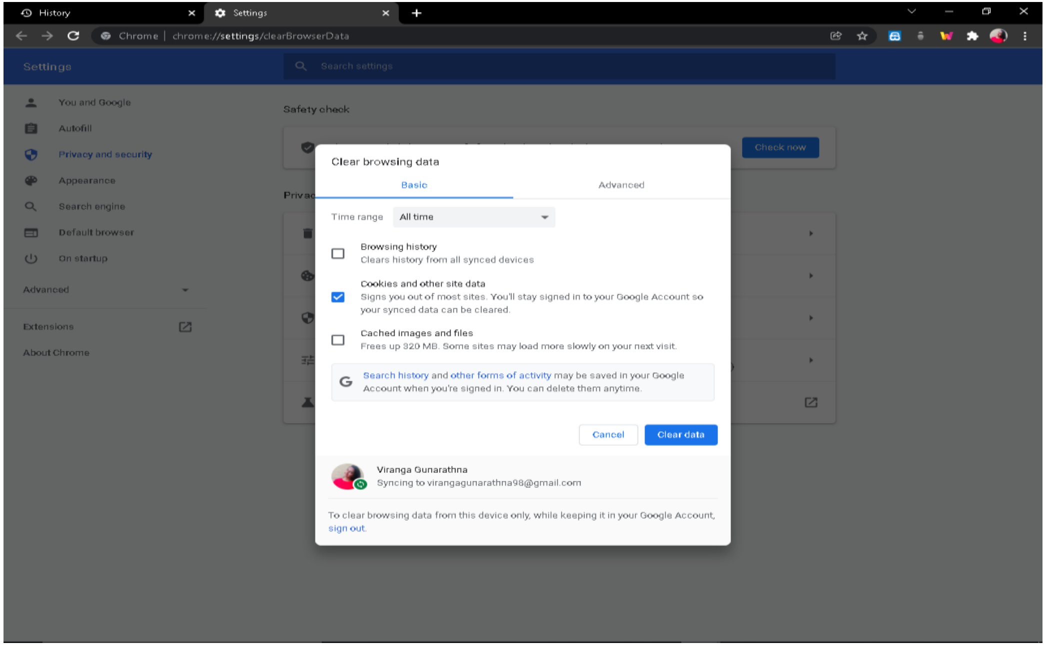
Group Number: 04

Group Members

Index Number	**Name**
19020031	ABEYWICKRAMA A.W.A.V.
19020155	BOTEJU W.S.J.
19020279	GUNARATHNA N.M.V.G.
19020392	JOSEPH K.C.
19020511	NINTHUKESAN P.
19020635	PREMNATH S.
19020759	SAMARAKOON S.A.
19020872	WEERASEKARA A.L.G.

1. Cookies (Include screenshots of each step you followed when answering the below questions)

Deleting cookies



Clear browsing data

Basic | Advanced

Time range: All time

□ Browsing history
Clears history from all synced devices

☑ Cookies and other site data
Signs you out of most sites. You'll stay signed in to your Google Account so your synced data can be cleared.

□ Cached images and files
Frees up 320 MB. Some sites may load more slowly on your next visit.

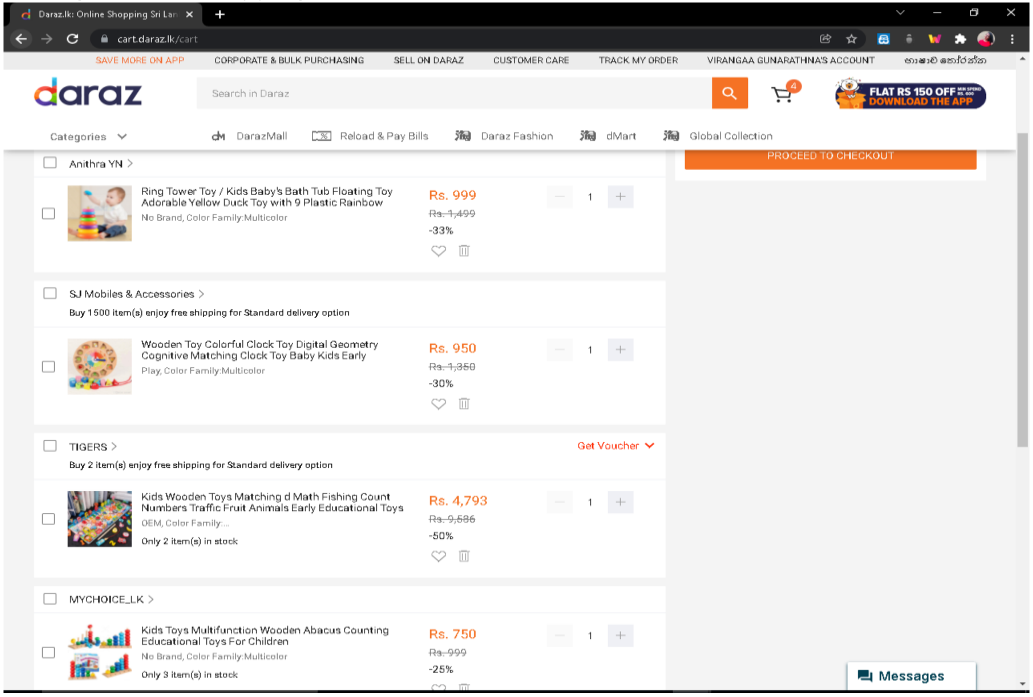
Search history and other forms of activity may be saved in your Google Account when you're signed in. You can delete them anytime.

Cancel | Clear data

Viranga Gunarathna
Syncing to virangagunarathna98@gmail.com

To clear browsing data from this device only, while keeping it in your Google Account, sign out.

Adding items to shopping cart



□ Anithra YN >

□ Ring Tower Toy / Kids Baby's Bath Tub Floating Toy Adorable Yellow Duck Toy with 9 Plastic Rainbow
No Brand, Color Family:Multicolor
Rs. 999 ~~Rs. 1,499~~ -33% | 1

□ SJ Mobiles & Accessories >
Buy 1500 item(s) enjoy free shipping for Standard delivery option

□ Wooden Toy Colorful Clock Toy Digital Geometry Cognitive Matching Clock Toy Baby Kids Early
Play, Color Family:Multicolor
Rs. 950 ~~Rs. 1,350~~ -30% | 1

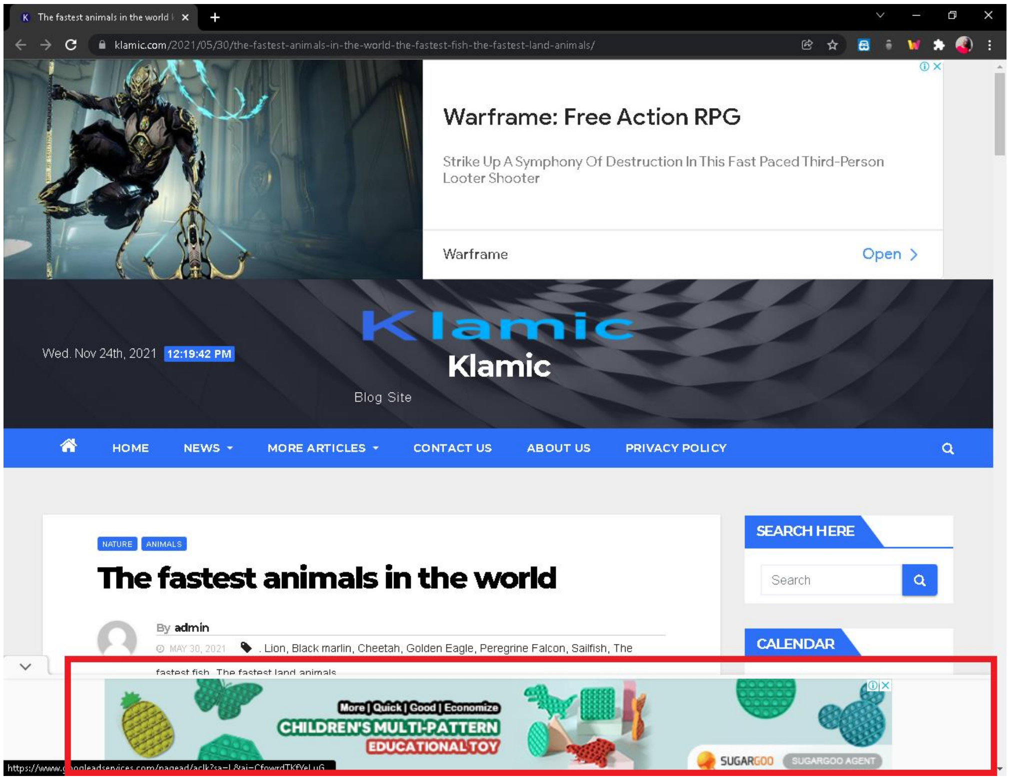
□ TIGERS > Get Voucher
Buy 2 item(s) enjoy free shipping for Standard delivery option

□ Kids Wooden Toys Matching d Math Fishing Count Numbers Traffic Fruit Animals Early Educational Toys
OEM, Color Family:...
Only 2 item(s) in stock
Rs. 4,793 ~~Rs. 9,586~~ -50% | 1

□ MYCHOICE_LK >

□ Kids Toys Multifunction Wooden Abacus Counting Educational Toys For Children
No Brand, Color Family:Multicolor
Only 3 item(s) in stock
Rs. 750 ~~Rs. 999~~ -25% | 1

Google ads shown for shopping cart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NATURE
ANIMALS
More | Quick | Good | Economize
CHILDREN'S MULTI-PATTERN EDUCATIONAL TOY
SUGARGOO
SUGARGOO AGENT

Warframe: Free Action RPG

Strike Up A Symphony Of Destruction In This Fast Paced Third-Person Looter Shooter

Warframe

Wed. Nov 24th, 2021 12:19:42 PM

Klamic

Blog Site

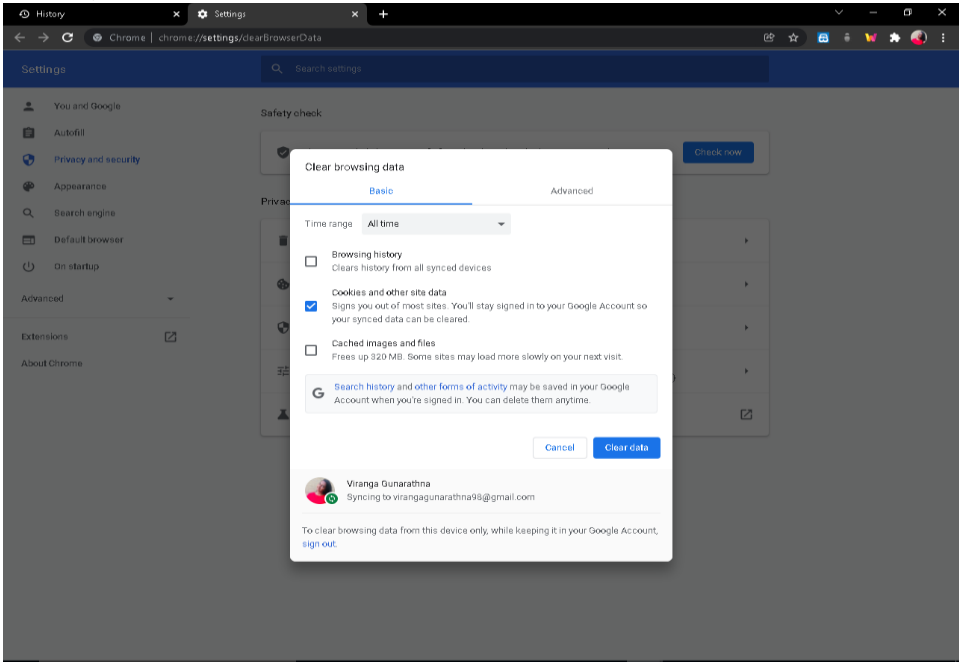
The fastest animals in the world

By admin

MAY 30, 2021 . Lion, Black marlin, Cheetah, Golden Eagle, Peregrine Falcon, Sailfish, The fastest fish, The fastest land animals

https://www.googleadservices.com/pagead/aclk?sa=L&ai=CfowzdTKfYeLuG...

Clearing cookies



Clear browsing data

Time range: All time

☐ Browsing history
Clears history from all synced devices

☑ Cookies and other site data
Signs you out of most sites. You'll stay signed in to your Google Account so your synced data can be cleared.

☐ Cached images and files
Frees up 320 MB. Some sites may load more slowly on your next visit.

Search history and other forms of activity may be saved in your Google Account when you're signed in. You can delete them anytime.

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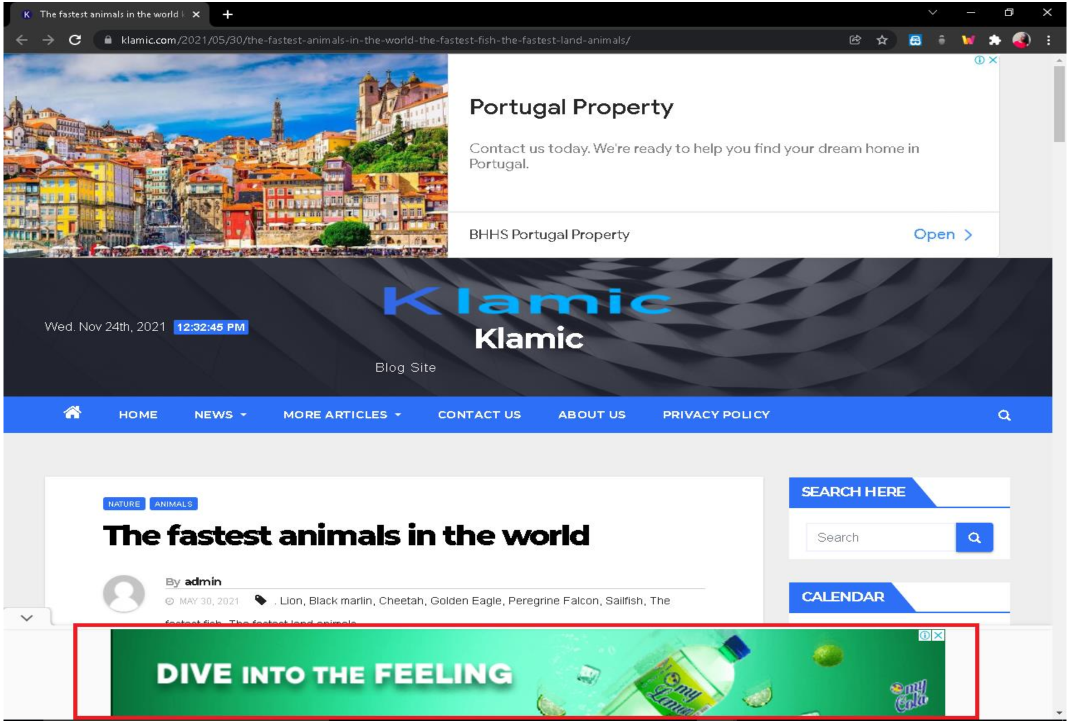
To clear browsing data from this device only, while keeping it in your Google Account, sign out.

No ads shown regarding shopping items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The fastest animals in the world

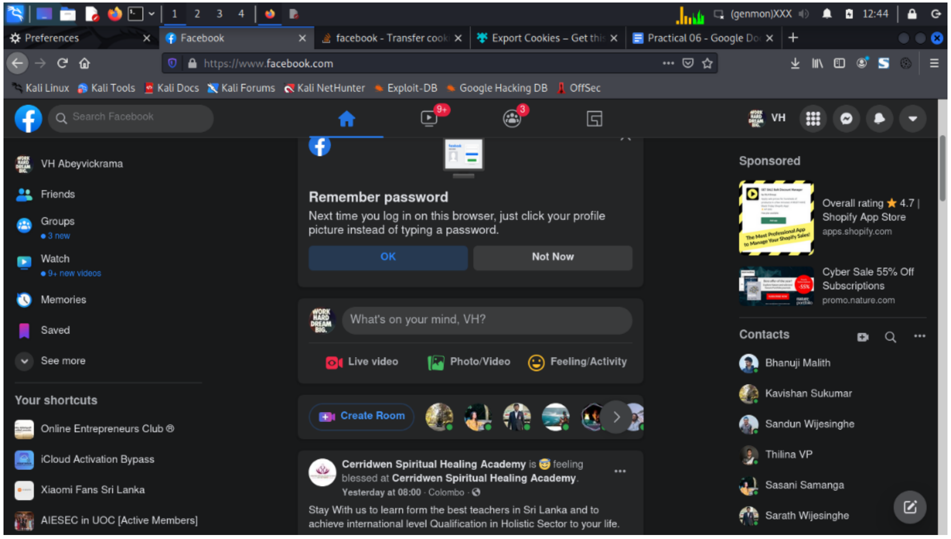
By admin

MAY 30, 2021 . Lion, Black marlin, Cheetah, Golden Eagle, Peregrine Falcon, Sailfish, The fastest fish, The fastest land animals

DIVE INTO THE FEELING

Ii.

Login to facebook



Remember password

Next time you log in on this browser, just click your profile picture instead of typing a password.

OK Not Now

What's on your mind, VH?

Overall rating ★ 4.7 | Shopify App Store
apps.shopify.com

Cyber Sale 55% Off Subscriptions
promo.nature.com

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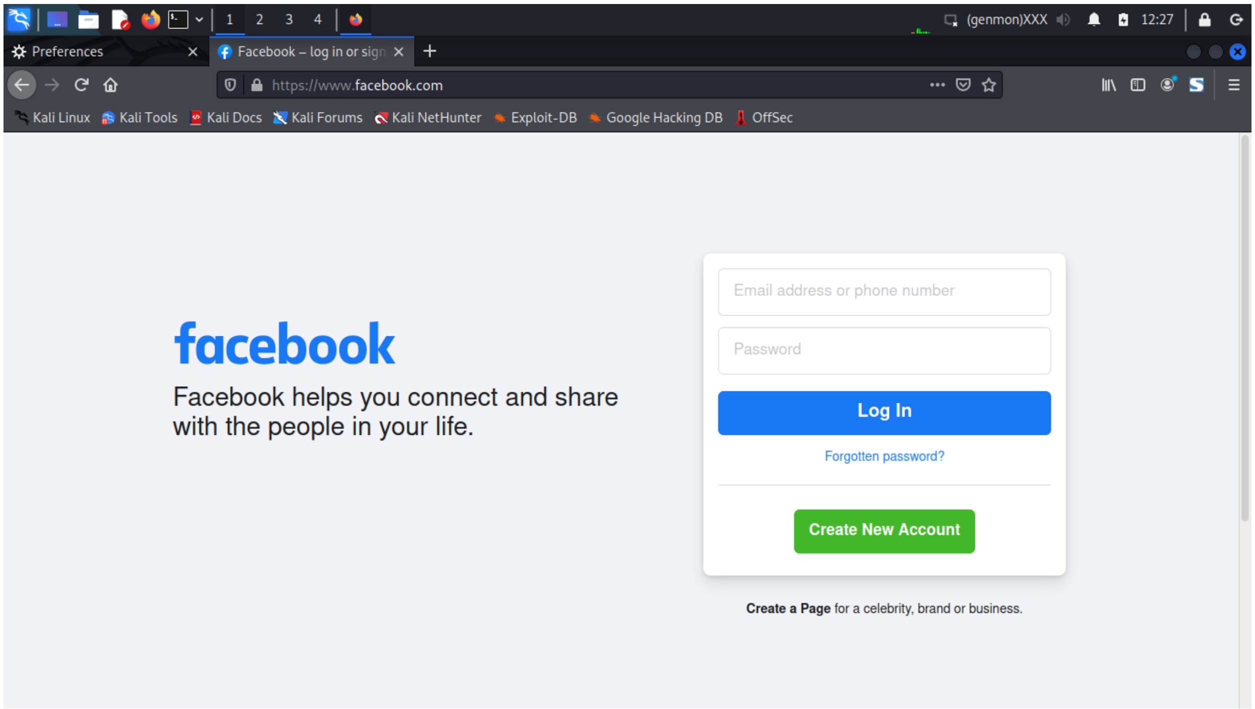
Delete the cookie history and try to log in to FB. Can you log in without re-entering your username and password?

NO



https://www.facebook.com

facebook

Facebook helps you connect and share with the people in your life.

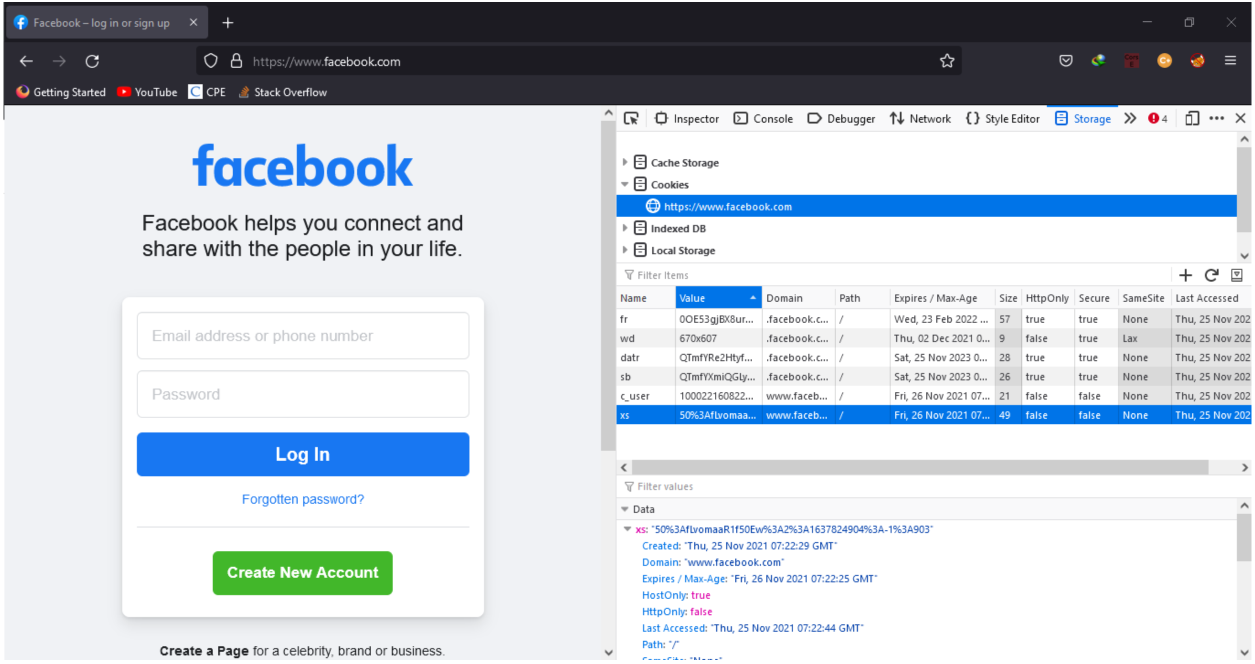
Email address or phone number

Password

Create a Page for a celebrity, brand or business.

Copy the cookie and use that cookie on another machine to login to your FB account again

Adding the cookies without loggin in and refreshing the page after



https://www.facebook.com

facebook

Facebook helps you connect and share with the people in your life.

Email address or phone number

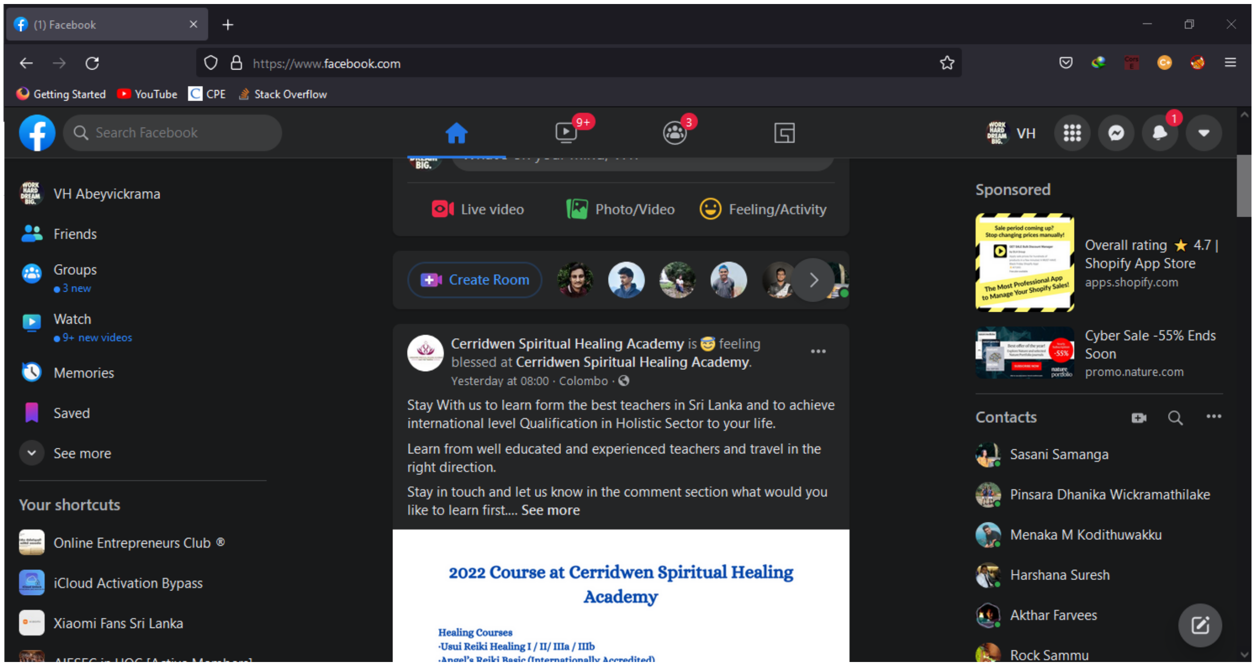
Password

Create a Page for a celebrity, brand or business.

Name	Value	Domain	Path	Expires / Max-Age	Size	HttpOnly	Secure	SameSite	Last Accessed
fr	0OE53gjBX8ur...	.facebook.c...	/	Wed, 23 Feb 2022 ...	57	true	true	None	Thu, 25 Nov 202
wd	670x607	.facebook.c...	/	Thu, 02 Dec 2021 0...	9	false	true	Lax	Thu, 25 Nov 202
datr	QTmfYRe2Htyf...	.facebook.c...	/	Sat, 25 Nov 2023 0...	28	true	true	None	Thu, 25 Nov 202
sb	QTmfYXmiQGLy...	.facebook.c...	/	Sat, 25 Nov 2023 0...	26	true	true	None	Thu, 25 Nov 202
c_user	100022160822...	www.faceb...	/	Fri, 26 Nov 2021 07...	21	false	false	None	Thu, 25 Nov 202
xs	50%3AfLvomaa...	www.faceb...	/	Fri, 26 Nov 2021 07...	49	false	false	None	Thu, 25 Nov 202

```
xs: "50%3AfLvomaaR1f50Ew%3A2%3A1637824904%3A-1%3A903"
  Created: "Thu, 25 Nov 2021 07:22:29 GMT"
  Domain: "www.facebook.com"
  Expires / Max-Age: "Fri, 26 Nov 2021 07:22:25 GMT"
  HostOnly: true
  HttpOnly: false
  Last Accessed: "Thu, 25 Nov 2021 07:22:44 GMT"
  Path: "/"
```

Can you do that?
Yes



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iii. The biggest problem that consumers have with third-party cookies is related to cookies and privacy. They feel their privacy is being invaded. How can cookies invade privacy? Cookies allow companies to track every website visited, marketers collect a lot of data about each person. This can be very uncomfortable for consumers, especially since this data can be accessed by almost anyone.

Even the cookies that allow for personalization aren't without risk. There are security problems in some of the software that can allow outside parties to access name, address, and even credit card information if it's stored in the browser. Marketers and software companies often point out that users can enable third-party cookies or disable third-party cookies in their browser depending on the level of their concerns and their personal preferences. However, that's not easy to do. Not only do many browsers make this option very hard to find, but many web users also don't have the technical expertise to figure out the process.

2. Digital Identity (Screenshots are not needed for this part)

i. What are the key differences between online and 'real life' identity?

Real life identity- A person's real identity is the sum of their qualities that may be used to identify them, such as their birthplace and birthday, the schools they attended, their shoe size, and so on. Some attributes, such as birthday, do not change with time, while others, such as hair color, do.

Online identity- Sum of a person's characteristics made-up with the help of the interactions done.

Real life identity	Online identity
Who you really are	Who you pretend to be/ Where your interest lies.
A true identity	Web sites you use has their own idea about who you are. So, they only have a partial identity about you
Can have only one true identity	There can be many partial identities depending on your exposers, interactions and interests.

ii. Discuss one's digital identity corresponding to a specific website of your choice. (eg: Amazon/ Your bank/ Your educational institute)

Amazon

Websites like Amazon has a system to create a partial identity or an online identity of their users based on the products a person buys or search on. Even if you or someone else used your account for this purpose it would be counted and added as a characteristic of your online identity in Amazon. The identifiers we provide when we sign up such as name, mobile number or email and password in Amazon are also used to create our online identity. Al most all the recommendation you view while shopping online are showing according to the identity they have created about your through this information they get. However they are unable to create a total identity about you because not all the details about you are provided to them.

iii. Differentiate between partial identity and persona.

Partial Identity

- A subset of the characteristics that make up your identity.
- There are different representations of a person.
- Doesn't have an audience.
- Any purchase history that stored in our account at a website can take as an example.

Persona

- A partial identity created by someone to represent himself/herself in a specific situation.
- In here we can take only one situation.
- In social media persona we can have an audience but you may or may not have control.
- A social network accounts such as facebook, instergram, twitter can take as an examples.

iv. Explain how a partial identity can be created.

When someone provide his or her personal information such as name, age, hometown to any online platform or to a website operator that person can create his or her partial identity. Different representations of a person can be referred to as partial identity, because nine of them has full and true picture of who you are.

v. What are digital identifiers?

A digital identity is an online or networked identity adopted or claimed in cyberspace by an individual, organization or electronic device.

A digital identity is linked to one or more digital identifiers, like an email address, URL or domain name.

vi. What is the purpose of a digital identifier?

Because identity theft is rampant on the Web, digital identity authentication and validation measures are critical to ensuring Web and network infrastructure security in the public and private sectors.

To put it simply, digital ID is a way to verify who we are online securely, in a manner that offers data protection and safeguards our personal information.

vii. Understand and explain the relationship between online identity and personal privacy.

Online privacy is the level of privacy protection an individual has while connected to the Internet. It covers the amount of online security available for personal and financial data, communications, and preferences. Not only do laws concerning the privacy of our personal information vary from country to country, but many of the world’s legal frameworks have not kept up with the rapid changes in information sharing brought on by the Internet, creating a regulatory gap. These two factors have created considerable uncertainty in the minds of many Internet users about how private their Internet experience really is, or should be.

viii. Identify the key concerns related to one’s online identity and privacy.

Internet users are naturally concerned about how their personal information is used. As more and more people use the Internet for e-commerce, criminals have stepped up their efforts to steal user identifiers, passwords, and associated information, information that makes it possible to impersonate other Internet users. The motivation for identity theft is often simple economic gain; by stealing your information and impersonating you, criminals may be able to order goods and services, redirect existing shipments, or transfer funds. While the technology has changed, the basic motivations and behaviors of these types of thieves are age-old, and there are many existing legal protections, such as consumer-protection laws, that may also apply to Internet users.

Beyond e-commerce, the simple act of sharing online information is a source of concern for many Internet users. Some of the sharing is voluntary, such as within social networks, and some is involuntary, such as when our information is traded by online advertising networks. For example, you may have willingly shared your location, age, gender, and personal interests on your Facebook page, but you did not intentionally disclose that information to anyone other than your Facebook friends. Yet, online advertising networks may have deduced much of this information, approximately, based on the trail of websites you visit and the searches you make.

ix. Recognise what kind of user information has a potential threat of steal and why.

Just by viewing or clicking through free information or services on a website, you are divulging information about yourself that can be used to determine what types of products or services might interest you. It is, in effect, a trade: you have given the website operator something of value in exchange for being able to view information you consider valuable. Of course, what you divulge about yourself on a Web page may have very little value on its own, but as information about you is accumulated, a fairly significant profile a partial identity can be created. If you combine that with the information you have shared with your trusted partners, such as a bank, insurance company, or healthcare provider, you will see that there is a lot of potentially valuable information about you on the Internet, even if the pieces of information are not connected.

The more information about you that can be pulled together, the more complete and the more valuable is your profile. This creates incentives for operators of commercial websites to work together to connect large portions of your online life. As the Electronic Privacy Information Center writes: “Search terms entered into search engines may reveal a plethora of personal information such as an individual’s medical issues, religious beliefs, political preferences, sexual orientation, and investments. Opaque industry practices result in consumers remaining largely unaware of the monitoring of their online behavior, the security of this information and the extent to which this information is kept confidential.”

x. What type of information would one share on the internet voluntarily and involuntarily? Give examples for each.

The simple act of sharing online information is a source of concern for many Internet users. Some of the sharing is voluntary, such as within social networks, and some is involuntary, such as when your information is traded by online advertising networks. For example, you may have willingly shared your location, age, gender, and personal interests on your Facebook page, but you did not intentionally disclose that information to anyone other than your Facebook friends.

xi. How easy is it to have control over shared information? Elaborate your answer.

Privacy concerns were different before the Internet made it easier to acquire and share data. The topic of who controls private personal information is generating substantial public interest now that numerous corporations have control over enormous volumes of information about Internet users (and share that information among themselves for commercial purposes).

Three factions are working together to reclaim control of your personal information. To begin with, several nations are contemplating changing or enacting new legislation requiring user consent for the collection and use of personal data. Second, corporations and organizations see a financial benefit in providing you greater control over your personal information since it improves data integrity and lowers the costs of collecting and maintaining it. Third, new technologies are being developed (as detailed below) that will allow firms to securely communicate information about users' identities while giving consumers more control over who has access to their data and what sorts of data may be shared.

xii. To whom does your identity be valuable, and what are the reasons?

The firms' business is based on gathering considerable amounts of personal information from various sources and then selling it on to others, including the same organizations from which they drew the data in the first place and those people who have become records in their systems. They have access to many data sources that describe our lives, such as banking records, our home address, bills with various utility companies and the like. However, there are many other digital pieces of information about us which yet are not shared with credit checking companies. The picture of an identity is constructed through an accumulation of actions that reveal habits, interests, preferences, and priorities.

xiii. Identify the ways of controlling the privacy of your online identity

1) Limit the personal information you share on social media.
2) Browse in incognito or private mode.
3) Use a different search engine.
4) Use a virtual private network.
5) Be careful where you click.
6) Secure your mobile devices as well.
7) Use quality antivirus software.
8) Ask questions before giving out your Social Security number.
9) Protect documents that have personal information.
10) Update your software and devices more often.

xiv. Discuss below topics

a. Social Engineering attack
Social Engineering attack is an attack vector that relies heavily on human interaction and often involves manipulating people into breaking normal security procedures and best practices to gain unauthorized access to systems, networks or physical locations or for financial gain.
Baiting, phishing, spear phishing, vishing, whaling, water hole, Quid pro quo, Diversion theft, Honey trap, Tailgating, Rogue security software, Dumpster diving and Pharming are types of social engineering attacks.

b. Electronic Eavesdropping
Electronic eavesdropping is the act of electronically intercepting conversations without the knowledge or consent of at least one of the participants. Historically, the most common form of electronic eavesdropping has been wiretapping, which monitors telephonic and telegraphic communication.
Great controversy has evolved over the use of this technique to detect crime or to gather evidence for criminal prosecution. Opponents assert that the legitimate governmental interest in curtailing crime does not outweigh the great potential for infringing upon constitutional or fundamental guarantees of citizenship, such as individual privacy and freedom from unreasonable searches and seizures.

c. Mass Data Compromise
   Implement a Mass Data Compromise Plan (MDCP) to provide a strategy for addressing the dynamics of a critical incident. A critical incident is one that threatens confidentiality, integrity or availability of Postal Service information assets with high impact, high threat involving high risk and great vulnerability. The MDCP defines the roles and responsibilities for critical incident response team members, defines critical incident severity levels, outlines a process flow for critical incident management, and includes methodologies for conducting response activities.

d. Parallel Lives
   A social identity that an Internet user establishes in online communities and websites. It can also be considered as an actively constructed presentation of oneself. Although some people choose to use their real names online, some Internet users prefer to be anonymous, identifying themselves by means of pseudonyms, which reveal varying amounts of personally identifiable information. An online identity may even be determined by a user's relationship to a certain social group they are a part of online. Some can even be deceptive about their identity.

xv. Is it okay to have multiple identities online? Give reasons for your answer.

I think it is okay to have multiple identities online depending on what the digital user uses the internet for.

For example brands have different identities that help them in marketing and establishing their brand essence to their target audience. This is where its useful to have multiple identities.

Multiple identities can also be beneficial for those looking for a way to communicate in a safe haven. Individuals with depression, anxiety disorder, abuse history can easily communicate in online platforms specific to their concern through multiple identities.

But sometimes individuals can use multiple identities to do fraud in different sectors such as the banking, health and immigration. This can cause the issue of lack of privacy and trust with the users who have a real identitiy in the internet.