TECHNICAL ENGLISH

2°

COLEGIO SALESIANO
SANTA CECILIA

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Webliography

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Introduction

The goal of the language and communication programs at Santa Cecilia School is to provide students with the communication skills they need to become and remain competitive. Because English is used so extensively in science and international business, the English program aims to build comprehensive language competence by developing the key skills - listening, speaking, reading, and writing - in a rounded way.

Our goal is to enable students to work with English-language materials and to interact with classmates in both formal and informal contexts, ranging from small talk and casual written correspondence to presentations and technical reports. The Technical English modules are designed to improve both students' general English and their specialized knowledge of the language in order to help them to communicate more confidently and more effectively in a professional environment

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Unit 1 Presentation

Unit 4
Security

UNIT OBJECTIVES

This course is aimed at introducing students to the subject of computer security and identify the types of hacking that exist, including sone famous hackers.

Lesson 1. **Encryption**

ACHIEVEMENT INDICATORS

- Create interest of students in computing background.
- Get new technical vocabulary refering to Windows background.
- Identify the main elements a GUI must have at the time of developing a software.

Lesson 2. **Types of Hacking**

ACHIEVEMENT INDICATORS

- Identify basic vocabulary about programming.
- Describes and applies problem-solving processes when creating solutions.
- Understand the software life cycle and its importance to a programming project.

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Unit 5
Websites

UNIT OBJECTIVES

To complement the practical understanding of how networks of computers are structured, this lesson reviews basics of computer websites identifying the type of domains that are used not only for comercial purpose, but also for country code.

Lesson 3: **Type of Websites**

ACHIEVEMENT INDICATORS

- Identify and explain the two types of programing language
- Explain the two categories of low-level language
- Define 'compiler' and 'interpreter' and explain what each is
- Provide examples of interpreter and compiler language

Lesson 4: **Type of Domains**

ACHIEVEMENT INDICATORS

- To understand the basic architecture of computing networks.
- To conceptualize how computer hosts relate to web sites.
- To learn vocabulary and accronyms related to the topic.

Unit 3
Mobile Phones

UNIT OBJECTIVES

To learn and consolidate the basic technical vocabulary in the field of mobile phones and - application-oriented - grammatical structures. Furthermore, the receptive linguistic skills of listening and reading comprehension are trained.

Lesson 5: **Mobile Phones**

ACHIEVEMENT INDICATORS

- To understand the basic architecture of computing networks.
- To conceptualize how computer hosts relate to web sites.
- To learn vocabulary and accronyms related to the topic.

Lesson 6: **Mobile Programming**

ACHIEVEMENT INDICATORS

- Learn vocabulary about circuits, computers, and software coding.
- Learn the basics of using an Arduino by getting information from manuals.
- Identify the hardware used in a circuit.

Lesson 7: **Mobile Applications**

ACHIEVEMENT INDICATORS

- Identify the parts o fan Arduino.
- Learn vocabulary about components of the Arduino.
- Define the functions of each part of the Arduino.

Competencies

1. Understand the main idea of technical texts and documentaries as well as the supporting information
2. Use critical thinking skills to describe, analyze, and evaluate a chosen text / documentary / topic and discuss their conclusions
3. Speak coherently on more complex technical topics using a wide range of vocabulary and grammar
4. Inform, persuade, and direct through speaking and writing in more complex contexts
5. Demonstrate familiarity with common document formats and follow standard layout and paragraphing conventions
6. Write a summary/abstract that conveys the main idea and relevant details of a technical documentary
7. Use critical thinking skills to provide peer feedback

Encryption

1 LESSON

Task 1. Vocabulary

Look up the following definitions and search on some examples on the internet.

- **Caesar Cipher** - a technique for encryption that shifts the alphabet by some number of characters.
- **Cipher** - the generic term for a technique (or algorithm) that performs encryption.
- **Cracking encryption -** When you attempt to decode a secret message without knowing all the specifics of the cipher, you are trying to "crack" the encryption.
- **Decryption -** a process that reverses encryption, taking a secret message and reproducing the original plain text.
- **Encryption -** a process of encoding messages to keep them secret, so only "authorized" parties can read it.
- **Random Substitution Cipher –** an encryption technique that maps each letter of the alphabet to a randomly chosen other letters of the alphabet.

Task 2. Introduction

What is encryption?

Encryption is a way of scrambling data so that only authorized parties can understand the information. In technical terms, it is the process of converting human-readable plaintext to incomprehensible text, also known as ciphertext. In simpler terms, encryption takes readable data and alters it so that it appears random. Encryption requires the use of a cryptographic key: a set of mathematical values that both the sender and the recipient of an encrypted message agree on.

Why is data encryption necessary?

Privacy: Encryption ensures that no one can read communications or data at rest except the intended recipient or the rightful data owner. This prevents attackers, ad networks, Internet service providers, and in some cases governments from intercepting and reading sensitive data, protecting user privacy.

Security: Encryption helps prevent data breaches, whether the data is in transit or at rest. If a corporate device is lost or stolen and its hard drive is properly encrypted, the data on that device will still be secure. Similarly, encrypted communications enable the communicating parties to exchange sensitive data without leaking the data.

Data integrity: Encryption also helps prevent malicious behavior such as on-path attacks. When data is transmitted across the Internet, encryption ensures that what the recipient receives has not been viewed or tampered with on the way.

Regulations: For all these reasons, many industry and government regulations require companies that handle user data to keep that data encrypted. Examples of regulatory and compliance standards that require encryption include HIPAA, PCI-DSS, and the GDPR.

What types of encryption are there?

There are two types of encryption in widespread use today: symmetric and asymmetric encryption. The name derives from whether or not the same key is used for encryption and decryption.

❖ What is symmetric encryption?

In symmetric encryption the same key is used for encryption and decryption. It is therefore critical that a secure method is considered to transfer the key between sender and recipient.

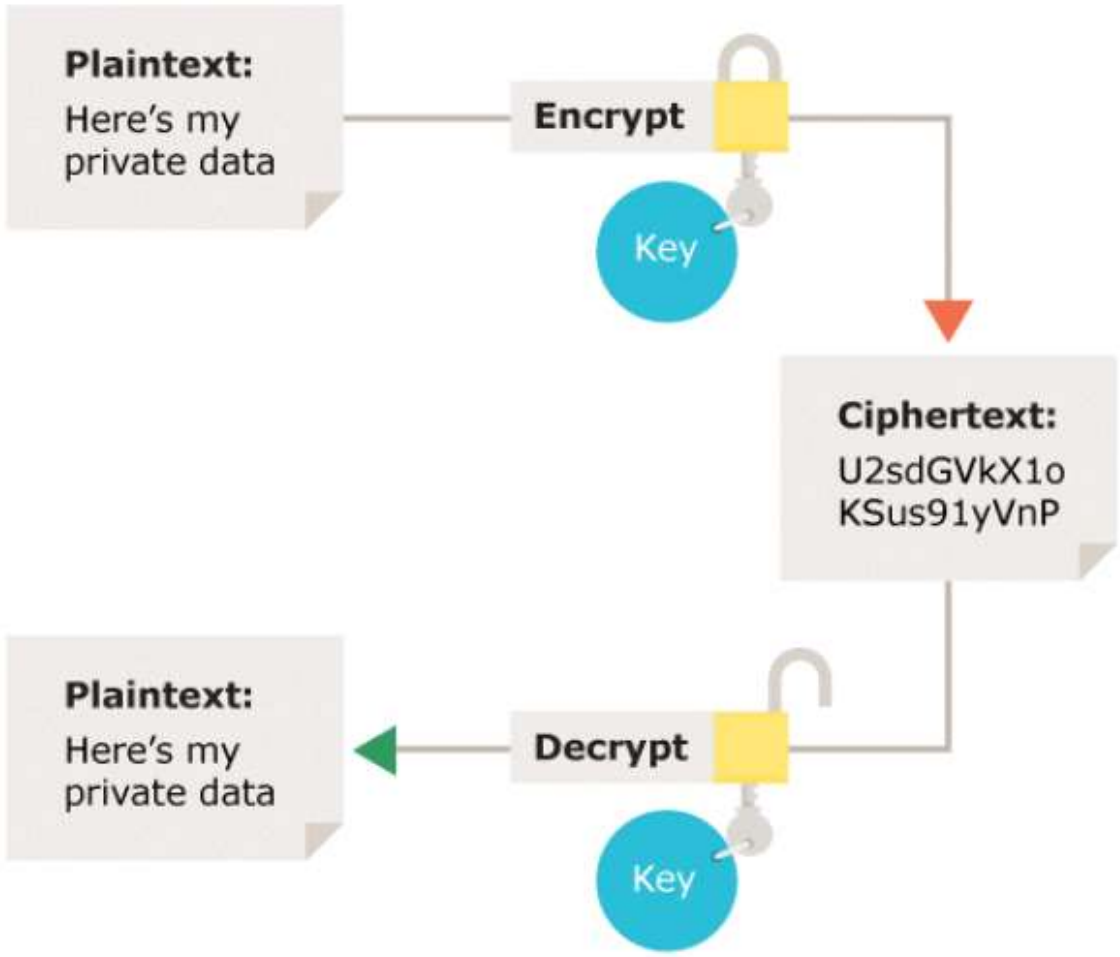


Figure 2: Symmetric encryption – Using the same key for encryption and decryption

What is asymmetric encryption?

Asymmetric encryption uses the notion of a key pair: a different key is used for the encryption and decryption process. One of the keys is typically known as the private key and the other is known as the public key.

The private key is kept secret by the owner and the public key is either shared amongst authorised recipients or made available to the public at large.

Data encrypted with the recipient's public key can only be decrypted with the corresponding private key. Data can therefore be transferred without the risk of unauthorised or unlawful access to the data.

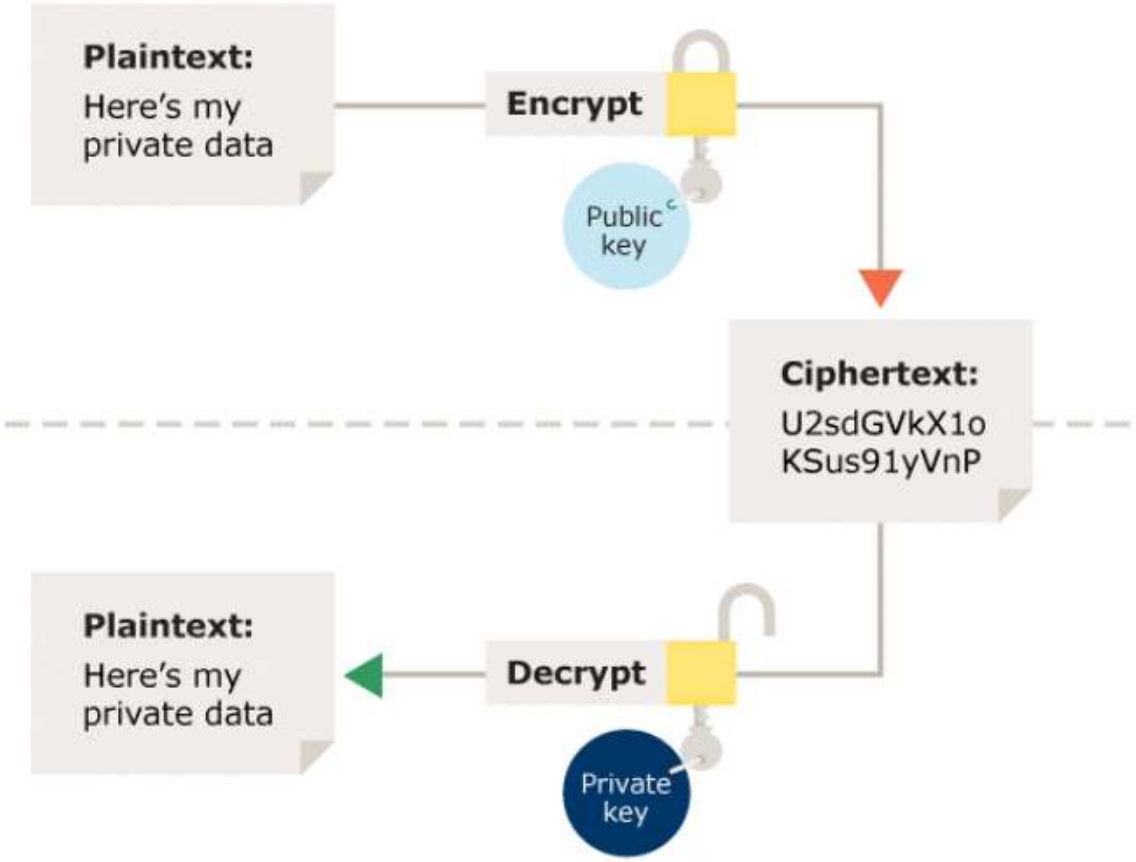


Figure 3: Asymmetric encryption – Using a different key for the encryption and decryption process

Task 3. Listening

Watch and listen the video and answer the following questions. For watching the video click the link below.

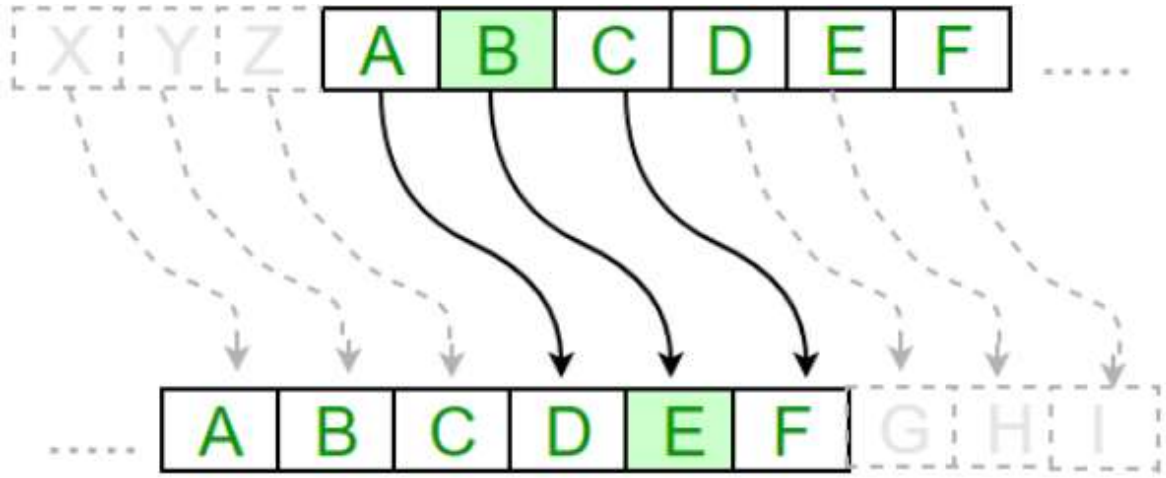
https://www.youtube.com/watch?v=ZghMPWGXexs

1. How the infomation keeps secret?
2. What is Caesar's Cypher characteristic?
3. How can you cypher messages so securely to be too hard to crack?
4. What happens when the sender and the reciver share the same key?

Task 4. Explanation

➢ Caesar Cypher

The Caesar Cipher technique is one of the earliest and simplest methods of encryption technique. It's simply a type of substitution cipher, i.e., each letter of a given text is replaced by a letter with a fixed number of positions down the alphabet. For example with a shift of 1, A would be replaced by B, B would become C, and so on. The method is apparently named after Julius Caesar, who apparently used it to communicate with his officials.



Examples

```
Text : ABCDEFGHIJKLMNOPQRSTUVWXYZ
Shift: 23
Cipher: XYZABCDEFGHIJKLMNOPQRSTUVW

Text : ATTACKATONCE
Shift: 4
Cipher: EXXEGOEXSRGI
```

ADVANTAGES

- Easy to implement and use thus, making suitable for beginners to learn about encryption.
- Can be physically implemented, such as with a set of rotating disks or a set of cards, known as a scytale, which can be useful in certain situations.
- Requires only a small set of pre-shared information.
- Can be modified easily to create a more secure variant, such as by using a multiple shift values or keywords.

DISADVANTAGES

- It is not secure against modern decryption methods.
- Vulnerable to known-plaintext attacks, where an attacker has access to both the encrypted and unencrypted versions of the same messages.
- The small number of possible keys means that an attacker can easily try all possible keys until the correct one is found, making it vulnerable to a brute force attack.
- It is not suitable for long text encryption as it would be easy to crack.
- It is not suitable for secure communication as it is easily broken.
- Does not provide confidentiality, integrity, and authenticity in a message.

Task 5. Practice

Using Caesar's Cypher decoding, discover which are the keys for the following passwords.

1. SERR CVMMN VA GUR PNSRGREVN (Each letter shifted by: 13)

2. OHWWF ZHMLY PUALYULA KHF (Each letter shifted by: 7)

3. WKDR SC DRO LOCD (Each letter shifted by: 10)

4. GMTLIVW EVI E TMIGI SJ GEOI (Each letter shifted by: 4)

5. NGBK G MXKGZ CKKQKTJ (Each letter shifted by: 6)

Types of Hacking

2 LESSON

Task 1. Tuning-In

Scan the QR code for introducing yourself to the topic; here is explained what are the differences by Programming and Coding. Based on the information provided answer the following questions. https://www.youtube.com/watch?v=rbSvetpuqWE

1. What is a cyber attack?
2. Enlist the types of cyber attacks mentioned on the video?
3. Is there any way of preventing cyber attacks?
4. What the users should do for avoiding a cyber attack?

Task 2. Explanation

A **cyber attack** is the process of attempting to steal data or gaining unauthorized access to computers and networks using one or more computers. A cyber attack is often the first step an attacker takes in gaining unauthorized access to individual or business computers or networks before carrying out a data breach.

The goal of a cyber attack is either to disable the target computer and take it offline or gain access to the computer's data and infiltrate connected networks and systems. Cyber attacks also differ broadly in their sophistication, with cyber criminals launching both random and targeted attacks on businesses. Attackers deploy a wide range of methods to begin a cyber attack, such as denial of service, malware, phishing, and ransomware.

Types of Cyber Attacks

1. Malware

Is malicious software designed to cause damage to computers, networks, and servers. There are different forms of malware, including Trojans, viruses, and worms, and they all reproduce and spread through a computer or network. This allows the hacker to gain deeper access into the target network to steal data, cause damage to devices, render networks inoperable, or take control of systems.

2. Phishing

Tricks a target into downloading malware or entering sensitive information into spoofed websites. These cyber attack methods are typically launched via email, with the attacker creating messages that look legitimate and may appear to be from a trusted sender. However, they will contain malware within an attachment or a malicious hyperlink that takes the recipient to a fake website that asks them to enter their login credentials or banking details.

3. Ransomware

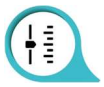
Are a financially fueled form of malware attack. Attackers send messages containing a malicious attachment that, when downloaded, encrypts specific data and files or entire computers. The attacker will then demand a ransom fee from the victim and will only release or restore access to the data upon payment.

4. Denial of Service

Is designed to prevent online services from working efficiently, also known as a brute-force attack. It is typically caused by an attacker flooding a website with huge amounts of

traffic or requests, in an attempt to overwhelm its systems and take them offline. A more advanced DoS form is a distributed denial-of-service (DDoS) attack, through which an attacker takes control of several computers to overload its target.

5. Man-in-the-Middle (MITM)

 Enable a malicious actor to position themselves between the target victim and an online service the user accesses. An example of this is an attacker creating a spoofed, free-to-access Wi-Fi network. When the user connects to or signs in to the network, the attacker can steal the login credentials and data they use while on it.

6. Cryptojacking

 Occurs when a bad actor takes control of a computer, mobile device, or server to mine for online currency or cryptocurrency. The attack either begins with malware being installed on a computer or by running code in JavaScript to infiltrate the user's browser.
Cryptojacking is financially motivated, and the method is designed to remain hidden from the target while using their computing resources to mine cryptocurrency. Often, the only sign of cryptojacking is a loss or reduction in computer performance or overactive cooling fans.

7. SQL Injection

 Use Structured Query Language (SQL) injection to exploit vulnerabilities and seize control of a database. Many websites and web applications store data in SQL and use it to share user data with databases. If an attacker spots a vulnerability in a webpage, they can perform an SQL injection to discover user credentials and mount a cyber attack.

8. Zero-day Exploits


target vulnerabilities in software code that businesses have not yet discovered, and as a result, have not been able to fix or patch. Once an attacker spots a code vulnerability, they create an exploit that enables them to infiltrate the business before it realizes there is a problem. They are then free to collect data, steal user credentials, and enhance their access rights within an organization.

Task 3. Listening

*Try the online excercise, reading, listening, and activities on grammar, spelling and vocabulary for this lesson on **Cyber Crime**. Fill in the blanks with the correct information*

https://listenaminute.com/c/cyber_crime.html

I don't think people understand cyber-crime. It's only _____ . In the future, it's going _____ problem. There have already been a few amazing examples. A few years _____ Internet in Latvia was attacked by another country. Cyberspace has _____ battleground. Countries _____ other. If there's a war, it's possible one country could attack the other country's Internet. This _____ communication, transport, etc would stop. It would cause _____ to hospitals and other important buildings. But cyber-crime is happening _____ people. Have you _____ phishing? That's with a 'ph' not 'f'. You really need to be very careful about what information _____ .

Task 4. Grammar

➢ Phrasal Verbs

Phrasal verbs are multi-word verbs that, like single-word verbs, convey action of the body or mind (e.g., speak up, figure out) or occurrences (e.g., turn up).

Phrasal verbs consist of a basic verb + another word or words, usually a preposition or adverb.

Example: speak (basic verb) + up (preposition)

Some phrasal verbs require direct objects (someone or something).

Example: call (basic verb) + Lorenzo (direct object) + back (adverb)

There are many phrasal verbs in English, each with a different meaning. Rather than trying to memorize them all at once, study them as you find them in your everyday work. For reference, the table below lists several phrasal verbs, their meaning, and examples of their context within a sentence.

Phrasal Verb	Meaning	Example
ask *someone* out	invite on a date	Jesse *asked Andrea out* to dinner.
ask around	ask many people the same question	Walt *asked around,* but no one had seen his money.
break down	stop functioning (vehicle/motor)	Bill's truck *broke down* near the train tracks.
break down	get upset	Skyler *broke down* when her husband left the room.
fall apart	break into pieces	Holly's dress *fell apart* in the washing machine.
give in	reluctantly stop fighting or arguing	Mike did not want to go on a trip to Belize, but he eventually *gave in*.
go over	go visit	I have not seen Jesse in several weeks, so I will *go over* later today.
pay for *something*	be punished for doing something bad	Walt will *pay for being mean* to Jesse.

Task 5. Demonstration

5.1 Complete the sentences with the correct forms of the phrasal verbs in the box.

CALM DOWN - FIGURE OUT - GIVE IN - INSIST ON - MESS UP - POINT OUT - REMIND OF - SETTLE DOWN - TALK INTO - TURN TO

- In the end he _____ and allowed the chairman to prepare the document.
- I_____ paying for this meal. You paid for the last one.
- The Prime Minister _____ that it was a historic day for the country.
- My boyfriend always _____ me smoking a cigarette with him, but I don't want to.
- I'm sorry I _____ the meeting. But it wasn't all my fault.
- It took the teacher a few minutes to get the class _____ .
- I _____ him for help after the incident had happened.
- They worked for a few hours on the problem but simple weren't able to _____ what had happened.
- He always me _____ a person I met at high school many years ago.
- The doctor told me to _____ and not get hysterical. It was only a minor injury I had.

Type of Websites

3 LESSON

Task 1. Tuning-In

1.1 What features make a Good website? Make a list of key features you look for.

1.2 You will come across the following terminology in this guide which you need to be familiar with:

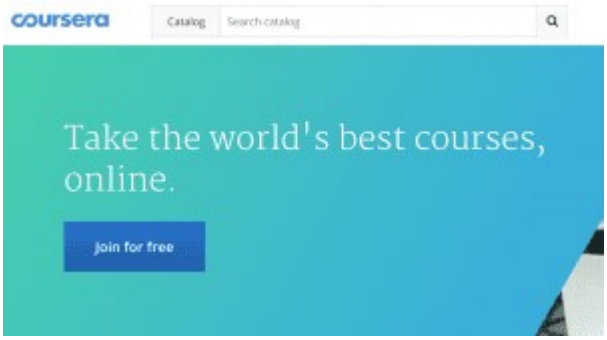
Term	Explanation
Web Browser	This is an application you use to view websites. There are many web browsers for example, Internet Explorer, Firefox and Safari.
Mobile web	Accessing the web through a browser on a mobile phone.
Search Engine	Software that helps you find what you are looking for on the web. Google uses a search engine to find relevant results.
Hyperlink	Pages on the web are linked together via clickable links. These are called hyperlinks.
Broadband	A faster way of accessing content on the web. You generally pay a telecom operator a fee to get broadband
WiFi	WiFi is a way of accessing the web without any physical connection. So you can have a laptop, for example, connected to the web but not plugged in and no network cable connected.
Wireless hotspot	A place where you can get access to a wireless network.

Task 2. Explanation

When you look at the internet as a whole, most sites fall into one of these neat, clearly defined categories, each with its own guidelines and recommended features—and that makes it easier to hit the mark when designing your own site to fit the mold.

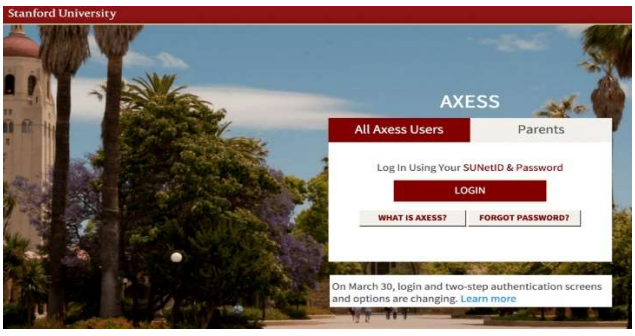
Below, are presented the 8 most common website types and purposes (with the exception of social media sites, which are not as common to start from scratch):

1. Educational websites



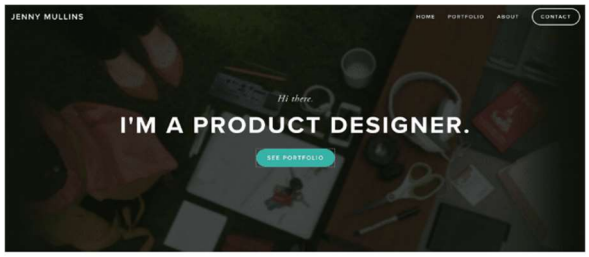
They are primarily used by educational institutions such as schools or businesses offering online courses. **More advanced educational websites will have user subscriptions, and an (LMS) Learning management system installed on the backend.** The LMS allows for control, monitoring, and allowing users access and participation in courses offered.

2. Directory listing/portal websites



Web portals can be internal websites for organizations like schools, or big businesses. It's a centralized place to share news, training, and updates, and for students or employees to access their emails and files.

3. Portfolio websites



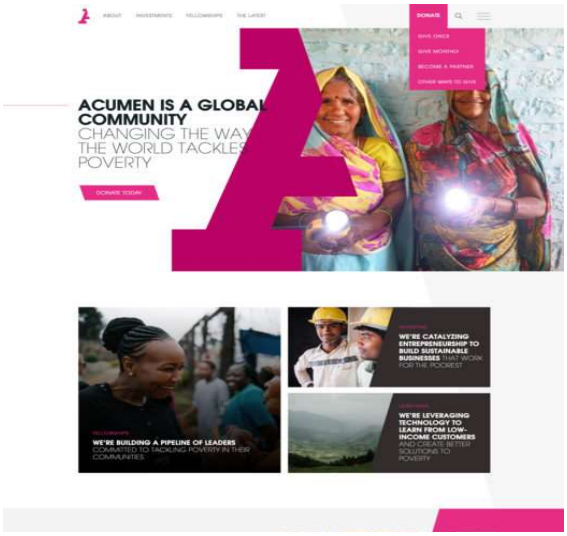
Hi, there. I'm a product designer.

Portfolio websites are sites devoted to showing examples of past work. Service providers who want to show potential clients the quality of the work they provide can use a portfolio website to collect some of the best samples of past work they've done. Portfolio sites can be stand-alone but often you will see portfolio pages integrated into business or brochure-type websites.

4. Personal websites

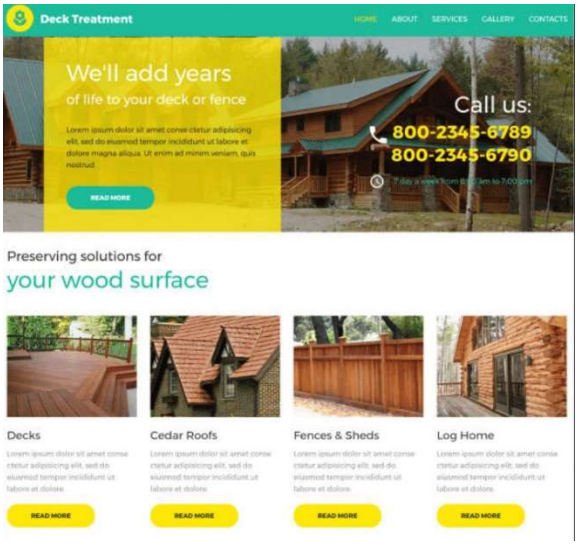
Personal websites as the name suggests, are websites where people can share their stories, thoughts, and feelings via blogs videos, and other content types, about specific on non-specific topics. Webmasters can also choose to only publish blog posts, or they can expand and sell merchandise, create a community, and more. Personal websites can also be used as business websites main advantage is you can really create a powerful personal brand.

5. Non Profit websites



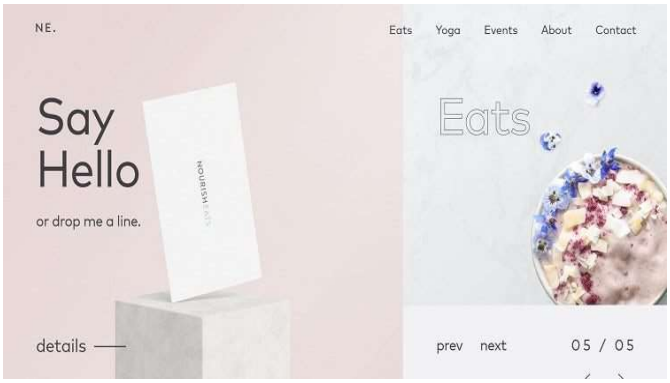
Almost all nonprofit websites have a top-level domain name of .org. These websites usually have information about nonprofit organizations. **Their pages tend to focus on current projects or causes that they are working towards. In most cases forms or donation functionalities allow users to donate to the cause or volunteer for a cause.**

6. Business Brochure websites



Brochure websites are very popular with small businesses that don't have much time to update pages. Generally speaking, a brochure website will list the services or products, contact details, about and other necessary information about the company it represents. See our 10 elements every small business website needs a guide.

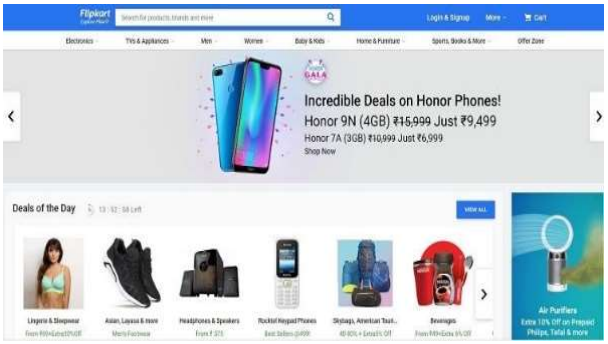
7. Blog Websites



A blog is a website that's regularly updated, run by one person or a small group, and is normally written in a laid-back style. A blog may not necessarily be incorporated on its own but can work in conjunction with other website types such as this list.

Blog-type websites are helpful in creating new content, be it news, events, or articles such as this one to broaden the number of topics your website covers.

8. Eccomercce websites



With an eCommerce store, you can sell products and services online. These types of websites contain components like product pages with buttons that either leads directly to the checkout page to process the payment or items that can be placed in a virtual shopping cart.

e-commerce websites usually contain a lot of functionality. They are integrated with a payment gateway, they can offer coupon discounts, purchase discounts, purchase reward points, or even referral discounts.

Task 3. Reading Comprehension

25 Years of the Internet

The internet is a marvel of technology. It is only 25 years old but it has completely changed the world. So what on earth is the internet? Who invented it? How has it changed the world so quickly? Find the answers to these questions and more as you keep reading! What is the internet? The internet is an enormous and complex network which carries information all around the world. It is like a web which links lots of things together. Computers, televisions, mobile phones and tablets are all joined to each other by a gigantic system of huge cables, tiny wires and even wireless connections. Millions upon millions of signals and messages are sent zipping around this system 24 hours a day, 365 days a year. We use the internet for an increasingly wide variety things, such as viewing websites, watching our favourite Youtube videos and sending emails. Who made it? Smaller networks which were similar in design to the modern internet were created 50 years ago, but they were relatively tiny and quite tricky to use. They were mainly made for universities and the military, so very few people outside these fields used them. Then in 1990, a man called Tim Berners-Lee invented something he called the World Wide Web, which connected networks all over the world and was simple enough for normal people to use and add content to. In 1991, he shared it with the planet and now anybody can use the internet easily! Changing the World Tim Berners-Lee only created the first website in 1990, but now half the population on Earth use the World Wide Web regularly! Once people had access to it, they very quickly realised that 'the Web', as it became known, let people do things they had previously thought were impossible. Millions of websites were created with all sorts of information and features.

The internet is so revolutionary because it connects people almost instantly and is capable of so many functions. Using the internet, a person in China can easily speak to somebody in America about a visit or a business deal; it is just as quick and simple as talking to someone across a desk! The internet also offers people a much bigger choice of things to buy than a local shop ever could; for example, someone in Britain can buy a car from Australia with a few clicks of their computer mouse! The amount of new things added to the internet is showing no signs of slowing down; if anything, it is speeding up! The possibilities seem to only be limited by people's imaginations! Nowadays, people meet and fall in love on the internet. They can store all their precious photos and record memories on the internet. They can spread new ideas far and wide on the internet. Many people have become millionaires simply by making videos in their house which they share online! New websites, new technology and new ideas are constantly being added. The internet has made progress happen faster than anyone would have believed 25 years ago. Tim Berners-Lee's invention has completely changed the world.

1. Write down one way you use the internet. Then write down one way an adult you know might use the internet.
2. The title says '25 Years of the Internet'. Find and copy the sentence which shows that this is a good choice for the title.
3. 'It links lots of things together.' Think of a word which you could use instead of 'links'.
4. Not many people remember when things like the modern internet were made 50 years ago. Why does the world remember the start of the World Wide Web?
5. Tara says 'This piece of writing is about how the internet has changed the world'. Explain how the first and last paragraphs show Tara is right.

Task 4. Grammar

Conditionals

Examples	Usage
Conditional 0 If I am late, my father takes me to school. She doesn't worry if Julian stays out after school.	Situations that are always true if something happens. **NOTE** This use is similiar to, and can usually be replaced by, a time clause using 'when' (example: When I am late, my father takes me to school.) -See note below-
Conditional 1 If it rains, we will stay at home. He will arrive late unless he hurries up. Simon will buy a new car if he gets his raise.	Often called the "real" conditional because it is used for real - or possible - situations. These situations take place if a certain condition is met. The first conditional is used to talk about the future or facts / situations which are true in the present and future. **NOTE** :In the conditional 1 we often use *unless* which means 'if ... not'. In other words, '...unless he hurries up.' could also be written, '...if he doesn't hurry up.'. “Provided” and “as long as” can also introduce a condition:*E.g. “Provided you leave now, you’ll catch the train”*
Conditional 2 If he studied more, he would pass the exam.	Often called the "unreal" conditional because it is used for unreal - impossible or improbable (hypothetical) – situations, (contrary to the present situation). It is also used to give advice and express hopes and ambitions.

I would lower taxes if I were the Prime Minister. They would buy a new house if they won the lottery.	This conditional provides an imaginary result for a given situation. **NOTE** The verb 'to be', when used in the 2nd conditional, is always conjugated as 'were'.
Conditional 3 If he had known that, he would have decided differently. Joanna would have found a new job if she had stayed in Gorzów.	Often referred to as the "past" conditional because it concerns only past situations with hypothetical results. Used to express a hypothetical result to a past given situation. They always refer to unfulfilled conditions in the past (contrary to what really happened).

Conditional Clause Variations Scheme:

	CONDITIONAL CLAUSE (If)	MAIN CLAUSE (Result)	EXAMPLES
THE FIRST CONDITIONAL* (probable)	**If / Unless + Present**	**will** **modal** **Present** **Imperative**	**If** you **exercise**, you **will feel** better. **Unless** you **change** your diet, you **can't lose** weight. **If** you **eat** less, you **lose** weight. **If** you **want** it, **take** it!
THE SECOND CONDITIONAL (improbable)	**If + Past**	**would / could / might** + **root of verb**	**If** I **were** you, I **would eat** less. **If** I **went** on a diet, I **would / could lose** weight.
THE THIRD CONDITIONAL (impossible)	**If + Past Perfect**	**would / could / might** + **have + past participle**	**If** you **had asked** me, I **would have cooked** you a meal. **If** you **had followed** a diet, you **could / might have lost** weight.

Choose the correct conditional form to complete the sentences below. Once you have decided on your answer, click on the arrow to check your answer.

1. If I _____(stay) in Barlinek, I would have found a new girlfriend.
2. He would do more to help the poor if he _____(be) the Pope.
3. If he goes to London on a business trip, he often _____(visit) Soho.
4. We won't go to the film unless they _____(arrive) in the next 5 minutes.
5. She _____(buy) a new car if she had had the money.
6. If Yoko were me, she _____(go) to Manchester immediately.
7. They will talk to Jacek if he _____(come).
8. Bożena comes to work 30 minutes late if her child _____(miss) the bus to school.
9. If Peter _____(think) twice, he wouldn't have made such a stupid mistake.
10. Kasia _____(become) a university lecturer if she studies hard.
11. If they _____(know) all the facts, they would have found the defendant guilty.
12. Unless you _____(hurry up), we will never arrive on time.
13. If I were in charge, I _____(change) the standard business routines.
14. He takes his daughter out to dinner, if she _____(come) to town.
15. If I hadn't known better, I _____(trust) him.

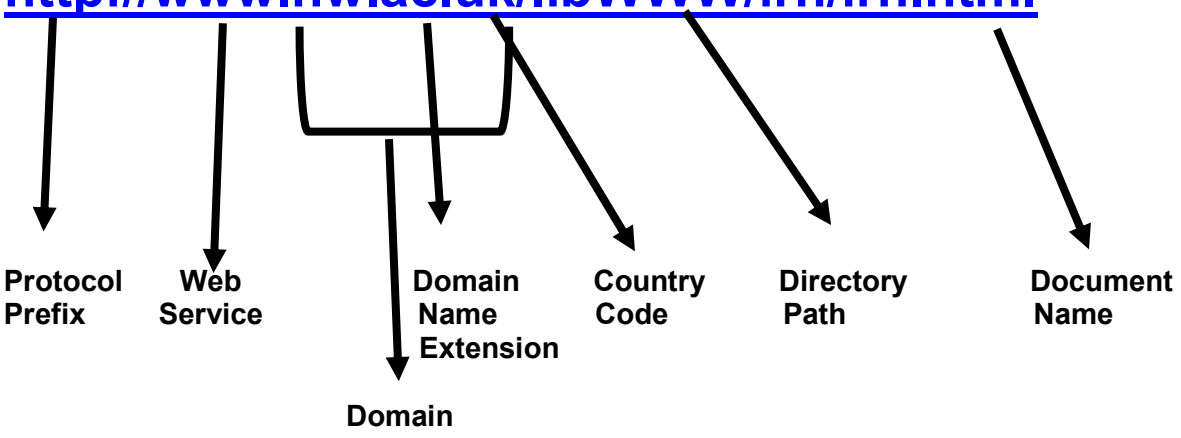
4 LESSON

Types of Domains

Task 1. Starter

Study this URL (Uniform Resource Locator)

http://www.hw.ac.uk/libWWW/irn/irn.html



Which part of the address tells you

1. The company is in the UK
2. This is the webpage
3. The type of transmisión standard your browser must use to access the data
4. This points to the computer where the webpage is stored
5. This is where the webpage is istored in the computer
6. This is a company
7. This is a web file

What do you use the Web for?

1. What is your favorite search engine to fin information on the web? Why?
2. Do you download music or video clips from the web? Do you pay for them?
3. Do you buy things online? Is it better to buy online or go to shop?
4. Have you ever listened to the radio or watched tv online?
5. Do you use the web to do school assignments or projects?

Task 2. Explanation

Study these approved domain name extensions and their meaning. Then match these suggestions for new extensions to their meanings.

Extension	Meaning
.aero	aviation industry
.biz	businesses
.com	commercial
.coop	cooperatives
.edu	educational and research
.gov	government
.info	general use
.int	international organization
.mil	military agency
.museum	museums
.name	individuals
.net	gateway or host
.org	non-profit organization
.pro	professionals

A top-level domain recognizes a certain element regarding the associated website, such as its objective (business, government, education), its owner, or the geographical area from which it originated.

Each TLD includes an independent registry controlled by a specific organization, which is managed under the guidance of the Internet Corporation for Assigned Names and Numbers (ICANN).

ICANN recognizes the following types of TLDs:

Generic Top-Level Domains (gTLD)

These are the most popular types of TDLs. Some examples include ".edu" for educational sites and."com" for commercial sites. These types of TLDs are available for registration.

Country-Code Top-Level Domains (ccTLD)

Every ccTLD recognizes a specific country and is generally two letters long. For example, the ccTLD for Australia is ".au".

Sponsored Top-Level Domains (sTLD)

These TLDs are supervised by private organizations.

Infrastructure Top-Level Domains

There is only one TLD in this category, which is ".arpa". The Internet Assigned Numbers Authority controls this TLD for the Internet Engineering Task Force (IETF).

In earlier times, the purpose of each TLD was specific, such as .com which was used only for commercial websites. Eventually, as the Internet kept growing and evolving, this restriction was abandoned, and now there's almost no distinction between most TLDs.

Task 3. Extra Information

The varied country codes, known as TLD's (Top Level Domains), also give web masters and designers a greater choice of name combinations to use for their sites, but it depends on which extension you want. Some country code administrators only allow local sites to utilize them. An example of a country code that has been released for general registration is .tv. It's the country code originally designed to be the official addressing for the tiny island nation of Tuvalu - population of around eleven thousand. The country code is probably one of its biggest exports!


.it


.es


.ar


.br


.cn


.jp


.uk


.us

Task 4. Reading Comprehension

Read the article and complete the task below.

Internet History

Many people believe one of the greatest inventions of all time has been the Internet and the World Wide Web. The **Internet** is a world-wide computer network and it provides a variety of information and communication services. It consists of interconnected networks using special communication **protocols**, or rules.

The Internet includes the **World Wide Web (WWW)**, which allows documents to be connected to other documents by things called **links**. The links enable a user of the WWW to search for information from one document to another. Many people believe the Internet and the World Wide Web is the same thing, but it is not. The WWW is a portion of the Internet and is the way of accessing information over the medium called the Internet.

One can think of it as television shows and broadcast networks. The broadcast networks carry the TV shows in the same way the Internet carries the web pages for people to browse through or use, just like when people browse and watch shows and movies on a TV.

The invention of the Internet took many years, but it can be traced back to the 1960s, when the USSR (Soviet Russia), launched a satellite into space called **Sputnik**. The launch motivated scientists and researchers in the United States to begin exploring new technology which led to the early beginnings of the Internet.

In 1965, two computers at MIT began to 'communicate' with each other using technology called **packet-switching**. In 1969, the United States Defense Department's **Advanced Research Projects Agency Network (ARAPNET)** became involved and funded research which developed many of the protocols used for Internet communication today.

On October 29, 1969, an attempt of sending the first message takes place from the Stanford Research Institute to several other universities, however, the first message was unable to be sent because the system crashed. Nevertheless, the second attempt was successful. The Internet was born, but it was mostly between universities which were part of the ARAPNET.

There is not one single person responsible for the 'invention' of the computer or the Internet. However, the idea of the Internet has been credited to **Leonard Kleinrock**, based on a paper he published in 1961. And when the Internet of today began to be developed in the late 1960s, the people credited with the invention of the Transmission Control Protocol (TCP) and the Internet Protocol (IP), (the rules for the Internet) was **Robert Kahn** and **Vint Cerf**. In addition, **Tim Berners-Lee** first introduced the World Wide Web (WWW) to the public on August 6, 1991, with a series of sites and pages related to the links.

The Internet **Domain Name System** was established in 1983 using address endings such as .edu, .com, .org, .gov, and many others. The first dot-com domain name was registered two years later, March 15, 1985 by **Symbolics.com**, which was a computer corporation in **Massachusetts**. In 1993 there were just 600 active

websites but 24 years later in 2017, the number of active websites reached nearly one billion.

The Internet and the World Wide Web, and the thousands of applications used by billions of people throughout the world today, would not be possible without the contributions of many, many people. The Internet and web continues to grow and change, but one thing is certain, it has changed the lives of people everywhere.

- **Underline the correct answer for each numeral.**

1) Which of the following was the first connected network which allowed computers to communicate with each other?

A: ARAPNET

B: WWW

C: TCP

D: IP

2) Which of the following groups was the first users of the Internet?

A: Hospitals

B: Universities

C: Businesses

D: Governments

3) Which of the following events occurred first in the history of the Internet?

A: World Wide Web introduced to the public

B: United Sates Defense Department funded research for Internet protocols

C: The Domain Name System was established

D: The number of active websites reached 1 billion

4) Which of the following domain name endings was most likely used first on the World Wide Web?

A: .com

B: .org

C: .edu

D: .gov

5) Which of the following was the first dot-com domain name registered on March 15, 1985?

A: Sputnik.com

B: Arapnet.gov

C: MIT.edu

D: Symbolics.com

6) Which of the following people is credited with having the idea of the Internet based on a paper he published in 1961?

A: Leonard Kleinrock

B: Robert Kahn

C: Vint Cerf

D: Tim Berners-Lee

Mobile Phones

5 LESSON

Task 1. Introduction

Make a summary based on the information given on the video.

https://www.youtube.com/watch?v=cueTzJAW1kU

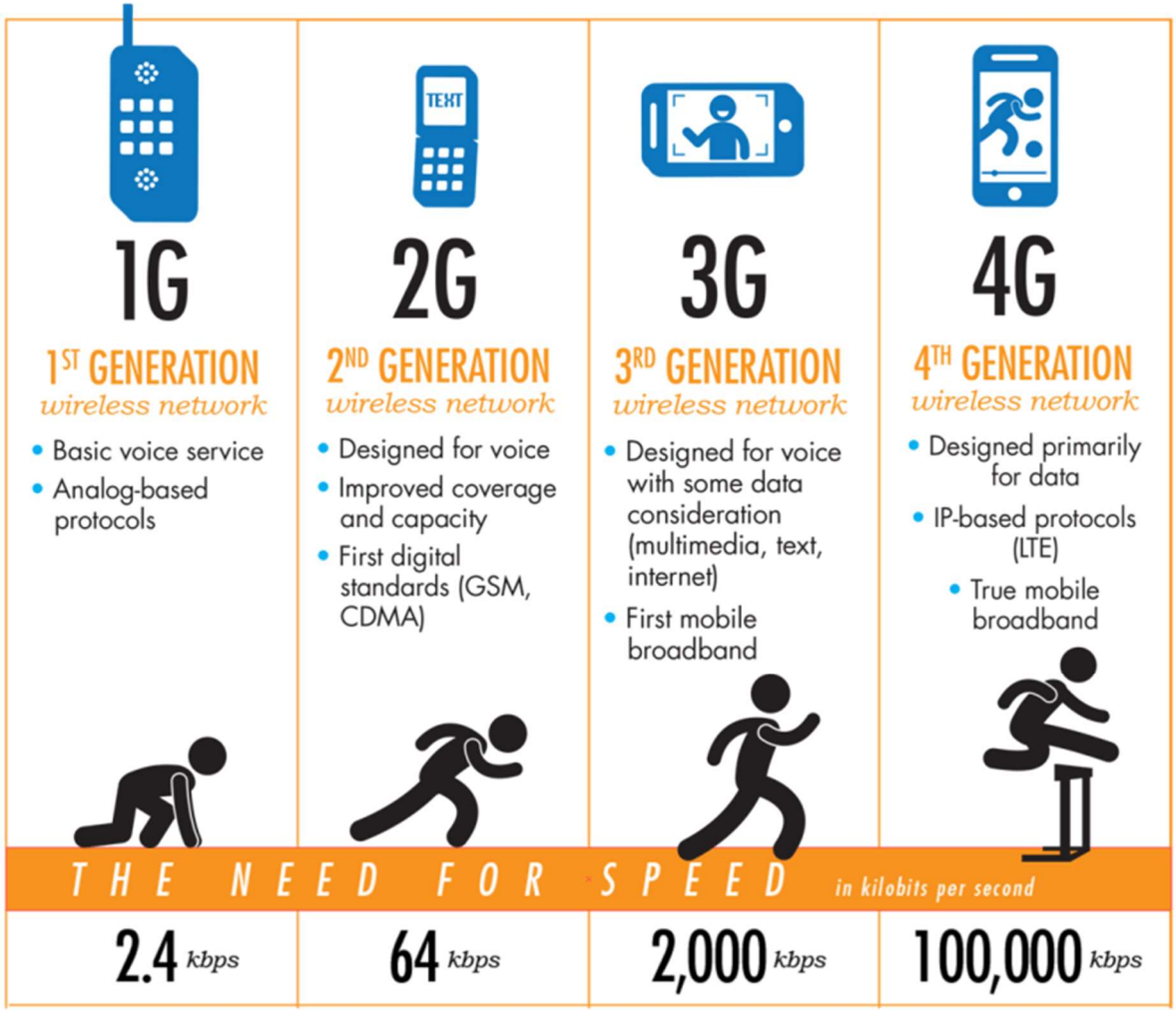
Task 2. Extra Information

Can you believe it's been nearly fifty years since the invention of the mobile phone? It's true! A prototype mobile handset developed by Motorola was used to make the world's first mobile phone call in 1973 – they called one of their competitors to let them know the good news.

However, while mobile phones existed way back in the 70s, it would be a long time before the average person owned one! In USA, the earliest mobile network wasn't built until 1981 with just three 500MHz base stations operating out of Melbourne, and 2G mobile networks didn't roll out in capital cities until 1993. It's fair to say that mobiles have gotten pretty popular in the decades that followed, with 75.8% of American owning a smartphone as of 2021.

Let’s take a walk down mobile memory lane and find out how our handsets got to be the way they are today.

LET’S TALK SPEED



Task 3. Explanation

Evolution of the Mobile Phone

From simple to smart, mobile phones have transformed dramatically to become information and communication hubs fundamental to modern life. But how did they get to be this advanced? Scroll through the timeline to see how and when phone technology evolved.

1983 - 1990

The First Ever Portable Mobile Phone

In 1983 the world got the first ever portable mobile phone in the shape of the Motorola DynaTAC 8000X. It cost an eye-watering $4000 USD and was a huge status symbol at the time. Two years later the first mobile phone call on UK soil was made, the then Vodafone Chairman Sir Ernest Harrison, the lucky recipient. In 1989 Motorola followed up the DynaTAC with the 9800X or MicroTAC, it came with a fold down keyboard cover and set the standard for the flip phone form factor seen throughout the 90's.

1991 - 1994

Dawn of Consumer Handsets

GSM first launched in Europe 1991 with the Orbitel TPU 900 first to market, but it wasn't until 1992 that mobiles were no longer restricted to business use. Mass production paved the way for cost-effective consumer handsets with digital displays. Nokia was one of the first to take advantage of this transition, with the Nokia 1011 arriving that year.

1995 – 1998

A Splash of Colour

Although it only offered four colours, the Siemens S10 brought mobile phone displays to life for the first time in 1997. The same year Hagenuk launched the GlobalHandy, the first device without an external aerial. Customisation also kicked off in a big way with Ericcson offering swappable coloured front keyboard panels. The following year Nokia launched a range of ‘Xpress-on’ interchangeable covers on the 5100 series, making it the first fashion orientated phone.

1999 – 2002

Growth of the Feature Phone

1999 saw Nokia unveil the 7110 which was the first device to take advantage of WAP (a means of accessing information over a mobile wireless network).
A year later Sharp launched the world's very first camera phone, the J-SH04. It was only available in Japan but signalled the start of the public's obsession with phone photography. However, it wasn't until 2002 and the release of the Sony Ericsson T68i and its clip-on camera, that western markets started to take an interest in the camera phone.

2003 – 2006

Mobile Data Revolution

The implementation of 3G took download speeds up to 2MBS in March 2003 with "3" the first to offer the service in the UK. RIM brought mobile email to the masses with its range of popular BlackBerry devices like the 8100 Pearl. The advent of front facing cameras in 2003 on devices such as the Sony Ericsson Z1010 meant video calling became possible, but not popular.

2007 – 2010

Getting Smarter

Swiping and scrolling replaced the traditional button method of input. The LG Prada being the first touchscreen to market ahead of the Apple iPhone in May 2007. However, Apple proved to have both the stronger brand and superior knowledge of capacitive touchscreen's potential.

2011 – 2014

Life Companion

Smartphones became increasingly central to modern life, offering much more than just communication features. The UK's first 4G service launched in 11 cities by EE in 2012 taking download speeds up to 12mbps. Voice recognition became common place first with Google Voice before Apple launched Siri into the market. Samsung added a built-in heart rate monitor to their flagship Galaxy S5 to capitalise on growth in mobile health & fitness.

2015 - 2018

Size Matters

The global adoption of 4G vastly improves video streaming and video calling capabilities. Screen sizes continue to grow to maximise the experience of these features, with the iPhone 7 Plus display now 57% larger than the original iPhone from 2007. Mobile payments also emerge with Apple Pay and Android Pay offering users the possibility of buying things with their smartphone.

Present Day

The Superfast World

EE launches the UK's first 5G service in 6 cities throughout May 2019. The fifth-generation network promises vastly superior data speeds and reliability, boosting ultra-high-resolution video streaming and mobile gaming. Handset design trends continue to push for an all-screen experience, with OnePlus introducing the pop-up selfie camera to its flagship 7 Pro device to do away with the notch altogether.

Task 4. Reading Comprehension

Read the following Passage and answer the questions below.

Most of us nowadays carry the world in our pocket! It is amazing but true. A mobile phone can make us connected to the rest of the world within a second. Today, mothers do not have to remain in tension if their sons or daughters are late. Businessmen do not have to queue up before a telephone booth to make an important call. Apart from making calls and sending SMS, the mobile phone is used as a multipurpose gadget. It is a calculator, timepiece, calendar, voice recorder, media player, camera, gaming device, net browser and what not. Though the mobile phone is a giant step of technological advancement, its abuses cannot at all be overlooked. Talking or texting while driving may lead to accidents. Students misuse this tool in various ways and give way to social pollution. The invention of mobiles phones is a great achievement and plays an important part in our daily life. Its many aspects are beneficial but some are negative effects as well.

Its development brought convenience and advantages to the world. Communication between people has become quite easy and very fast. We can keep in contact with others from any place on the bus, in a street or in a meeting by sending a message for less than the price of a call. The Internet can be accessed through it and it is also used to click photos and shoot videos.

At the same time, parents can control their children and it is essential during emergencies. Business deals can be done on a single call through cell phone outside the office, in a park or in any shopping centre. This invention gets the world closer to a single point. The Internet is also available on the cell phone.

The radiations of mobile may be dangerous to health and may cause a headache, earache and blurring vision. These invisible radiations destroy the cells located in ear and head which cause damage to the brain and nephrons in the head region. Its use in certain places causes disturbance sometimes, such as in a classroom etc. Mobile phones with camera are causing —privacy problems such as using it as a hidden camera to take pictures and making videos.

EXERCISE

1.A mobile phone is like a world in our pockets as …….

2. The parents do not have to remain in tension if their sons and daughters are late because……

3. Some of the negative effects of a mobile phone are:

(a)……

(b)…….

(c)…….

(d) …….

4. Excessive use of mobile phones can be hazardous to one's health as……

5. A mobile phone is a threat to one's privacy as …….

Task 1. Introduction

1.1 Watch the video and complete the following questions.

https://www.youtube.com/watch?v=ZikVtdopsfY&t=18s

What are the characteristics of the thee types of Mobile Apps?

What is the difference by web apps and mobile websites?

Enlist web app advantages

Enlist web app disadvantages

Task 2. Concepts and Useful definitions

Types Of Mobile Apps

Mobile applications are on the rise, owing to the increasing demand for services and products within hand's reach. These apps are versatile and responsive, but they also pack the same features as the corresponding websites or web applications. There are three major types of mobile apps- native, hybrid, and web apps. In the below section, we have briefly discussed these categories for your better understanding and clarification.

1. Native App

When an app is created for a single platform such as Android or iOS with its features and functionality, it is referred to as a Native App. Native apps and unique coding in the operating system with a specific programming language. The native App attains the capability to use the hardware and software of the device simultaneously. This App is built with high-end optimized technology and is compatible with emerging technologies such as cloud app development on mobile, web app comparison, GPS, etc.

Advantages Of Native App

- These applications can perform offline also.
- It is easier to develop.
- The native apps improve user experience and customer retention.
- Codes are simpler and don't include too many diver features.

Disadvantages Of Native App

- Codes should be changed if the application is released for another OS.
- Specific skills are needed for developing the apps.

2. Hybrid App 

From the name itself, hybrid apps prove that they are meant to perform well on both iOS and Android OS without any glitches. Major languages used for developing these apps are HTML, JavaScript, ReactJS, and more. As they are cross-developed apps, the codes need to be written on a platform whose engine can convert snippets into native for depending on the OS.

Advantages Of Hybrid App

- These applications run on multiple platforms at a time.
- They require the least maintenance.
- You don't need any specific skills based on programming languages.
- These apps can be easily integrated with different web-based services.

Disadvantages Of Hybrid App

- Features are complex and hard to decode for defect identification.
- The applications need additional security features as per the OS.

3. Mobile web apps 

The mobile web applications need a web browser to install them. If there is no browser, you won't be able to install them. Some apps need web extensions for use as they will be hosted on internet servers. These apps can be classified into two types- responsive and progressive web applications.

Task 3. Explanation

❖ **Best Programming Language For Developing Mobile Apps For The Android Platform**

1. Java 

Java is one of the most popular programming platforms with which you can easily develop mobile applications for Android. Some of the main features due to which this programming language is popular for Android development are:

1. It comes with a huge library of functions that will help you easily modify the applications as per the requirements.
2. Being an open-source platform, you will have access to a huge talent pool.
3. Java can be used on some of the most popular development frameworks like Eclipse, Hackerrank, and NetBeans.
4. Java codes can be compiled and executed in any machine as the platform doesn't need any machine-specific engine.

2. Kotlin 

Kotlin has emerged as a powerful programming language for developing Android applications. Besides being feature-rich, it also comes with a huge talent pool that will help you to increase your knowledge.

- Kotlin can be integrated with Java to ensure higher efficiency of the codes written for Android applications.
- Thanks to the lazy loading feature, you can upload only the necessary features that need to be shown on the UI.
- Data classes are present in Kotlin, with which one can easily code according to Java minus the long length of codes.

❖ **Best Programming Language For Developing Mobile Apps For The iOS Platform**

For developing programs on iOS, the two most important programming languages used are Swift and Objective-C. Objective-C is the modern version of C++, while Swift is introduced to tackle the challenges of Objective.

1. Objective-C

- With the help of Objective-C, you will be able to interoperate C++ codes for the development of iOS applications.
- To ensure that no additional memory is consumed, Objective-C comes with a garbage collector. It will allocate memory dynamically and ensure that code compilation and execution time can be reduced.
- As it comes with a stack, you can use it to pile up multiple threads so that different actions can be performed with ease. Its stack overflow feature will tell you when to stop the threads.

2. Swift

Swift is comparatively a new programming language with which you can easily develop iOS applications. Its smoother learning curve will help you grab the concepts and ensure you won't have to wait for long to ensure that the codes written are of top-notch quality.

❖ Best Programming Language For Developing mobile apps for both the iOS and Android platforms

Applications developed for operating on both the Android and iOS platforms need special programming languages that are cross-platform in nature. This section below has discussed some of the best languages used to build hybrid apps.

1. HTML5 and Apache Cordova

Apache Cordova is one of the best open-source platforms where you can write codes for iOS and Android OS based on HTML5 and CSS web technologies. Here, you will find a data wrapper with which the codes can be encapsulated to give the same feel as native applications.

2. C# and Xamarin

Xamarin has grown in popularity in recent years as it allows developers to make hybrid applications using the C# technology. It is a XAML UI language loaded with a myriad of features like data binding, styling and font effects, and more.

3. JavaScript and React Native

Nothing can ever outsmart the excellence of React Native as it is a JavaScript-based cross-platform where you can develop hybrid applications having features similar to that of the native apps.

4. Dart and Flutter

Another great platform that you can use for hybrid app development is the Flutter. Even though it is a recent platform, it has gained large popularity.

Mobile Applications

7 LESSON

Task 1. Introduction

Watch the video and make a list about the frameworks mention on it.
https://www.youtube.com/watch?v=EXGFQl86now

Task 2. General Information

Top Mobile App Development Frameworks

Mobile app development no longer requires you to learn complex programming languages. Knowledge of web-based languages like HTML, CSS, and JavaScript is enough to build awesome-looking high performing native applications.

If you are running on limited resources and time, there are some great cross-platform app development frameworks available that can help you build cross-platform mobile apps using a single codebase.

Best Mobile App Development Frameworks

Frameworks	Release Year	Repository	Code Based On	Examples
React Native	2015		• JavaScript • Python	• Shopify • Facebook
Ionic Framework	2013		• Angular JS • Apache Cordova	• MarketWatch • ChefSteps
Flutter	2017		• Dart	• eBay Motors • PostMuse
Xamarin	2014		• .Net • C#	• Aussie Weather • Tube Mate
PhoneGap	2009		• HTML5 • CSS3	• TripCase • HealthTap
Corona	2009		• Lua	• PKT Ball • Designer City

 Appcelerator	2009		• JavaScript	• MIT • Skydrops • Pulse
 NativeScript	2014		• JavaScript	• Clubhouse • Lakeside Fitness
 Mobile Angular UI	2017		• HTML5 • Bootstrap • AngularJS	• PayPal • Forbes Magazine App

1. React Native Intro

React Native is one of the most popular mobile app and best framework for web development. The JavaScript framework is used for cross-platform app development. It's open source and allows you to build apps for Android and iOS platforms simultaneously.

React Native is developed by Facebook and gaining a lot of traction in recent years. This is the best framework for mobile app development that significantly reduces the mobile application development time and helps you build reliable, powerful, and quality applications in less time.

React Native Features

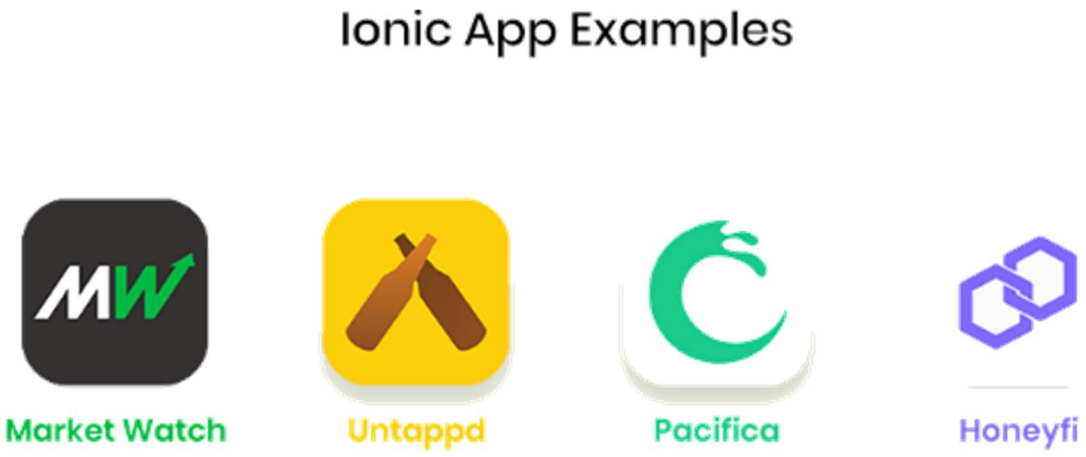
- **Cross Platform App Development:** React Native was initially available for iOS platform only. However, due to its great performance, now, it supports both platforms. In this mobile app development framework, instead of using Swift, Kotlin, or Java, you will be putting those building blocks together using JavaScript and React. Hence, it allows the developers to build apps for Android and iOS platforms simultaneously. This reduces the mobile app development cost to a greater extent.
- **Reusable Components:** React Native allows the developers to reuse the components. Using it one they directly compile the blocks with the native app. Both Android and iOS are having their counterparts in React, which delivers fast and consistent results across all the platforms.
- **Ease of Maintenance:** When it comes to maintenance of React Native projects, there's nothing difficult or to be worried about. As React Native requires you to only maintain a single code base for both the platform, companies can assign a single team for both versions of apps.

2. Ionic Intro

Ionic is another popular open-source framework for developing cross-platform mobile applications using web technologies like HTML, CSS and JavaScript. This is the best mobile app development framework that has always shown great results. Talking about the latest version, it's using minimal DOM for better performance efficiency. It provides mobile optimised components as well as native APIs using Cordova and Ionic Native. It has its own command line interface tool which makes mobile app development quite easier and faster.

Ionic Features

- **Platform Independent Framework:** Ionic is capable of recognizing the platform-specific advanced CSS that is proportional to the native look and feel on different mobile operating systems. It reduces the code changing requirements and it gives the codes of mobile-optimized HTML, JS, and CSS components. Apart from this, it incorporates into AngularJS and provides a robust structure with a more manageable code.
- **Cross Platform Mobile App Development:** Ionic takes less time, resources and efforts to build an application for multiple mobile platforms simultaneously. It helps deploys standard tools with a solitary code base.
- **Based on AngularJS:** It's is the best framework for mobile apps and web applications. The Ionic framework utilizes AngularJS to offer a bunch of center functionalities to the designer. They can easily incorporate alluring components into the application.
- **Utilizes Cordova Plugins:** Plugins play an important role in Ionic mobile app development. Ionic framework application development utilizes Cordova plugins and helps developers accessing different components of the framework such as camera, GPS, etc easily.



3. Flutter Intro

Flutter is the portable user interface framework and one of the most popular mobile app development frameworks that used for building beautiful, natively-compiled applications for mobile, desktop and web. It's developed by the search giant Google who allows you to target a wide range of users with a single code base.

Flutter Features

- **Native Performance:** Flutter strives to provide full native performance by incorporating all critical platform challenges such as scrolling, navigation, icons and fonts as widgets.
- **Fast Development:** Flutter comes with Stateful Hot Reload feature that makes mobile app development really fast. You don't need to build everything from scratch. It has a rich set of fully-customizable widgets to create native interfaces in very less time.
- **Expressive and Flexible UI:** Flutter is already popular for making mobile app development fast. It allows you to add features focusing on the native end-user experiences. The layered architecture allows you to customize the application in almost every possible ways which further speed ups the rendering and result in results in expressive and flexible designs.

4. Xamarin Intro

Xamarin is also among the popular open source names for developing cross-platform mobile applications. It was founded in 2011 and acquired by Microsoft in 2016 with an aim to make mobile app development simpler and easier. It comes with almost all the essential tools required to build apps with native features.

Just like other mobile app development frameworks, the application shares the common codebase and thus reduces the development time and cost.

Xamarin is available to download with Visual Studio. A large amount of code is already written in C#. Hence, there's no need to learn Java, Objective-C, or Swift to build apps.

Xamarin Features

- **Native User Interfaces:** Xamarin is equipped with native user interface controls. Apps built on this platform look standard and behaves just like other apps built on other platforms.
- **Native API Access:** Xamarin allows apps to have access to all the functionality available in the underlying platform and device. This also includes platform-specific features like ARKit and Android Multi-Window mode.
- **Native Performance:** Hardware acceleration is like a magic which helps your application to come out from critical situations. As the apps are compiled for native performance, they can easily leverage platform-specific hardware acceleration.
- **Target All Platforms:** Xamarin allows you to use a single codebase for Android, iOS and Windows. You can use the same language, data structures, API for more than 75% parts of your app code. This helps a lot in the maintenance of the code.

Xamarin App Examples

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5. Mobile Angular Intro

Mobile Angular UI is a mobile UI framework that combines the implementation of the Bootstrap and Angular framework. It simplifies the mobile app development process so that you can build the apps using HTML5.

If you know already know AngularJS and Twitter Bootstrap, you won't face any difficulty in using this framework. Mobile Angular UI is available under MIT License and so you are free to use it in your projects.

Mobile Angular Features

- **LightWeight:** It doesn't require you to add jQuery dependencies or bootstrap js or any other heavy dependencies. Just use a few angular.js directives and you're good to go.
- **Beautiful Mobile Components:** Mobile Angular UI comes with all the awesome mobile components missing in Bootstrap 3: sidebars, scrollable areas, overlays, switches, etc. It relies on popular JavaScript libraries like overthrow.js and fastclick.js to provide a better mobile experience.
- **Move from Desktop to Mobile or vice versa with smallest efforts:** Mobile Angular UI retains most of the Bootstrap 3 syntax. This makes it quite easy to convert an existing desktop or web app to mobile.

COLEGIO SALESIANO
SANTA CECILIA