***In this WORD , you’ll find the content of the final exam***

ICT

What is ICT about ?



University of Science and Technology Houari Boumediene

Computer Science Faculty

Final Project TIC

Report on TIC (Information and Communication Technologies) and technologies related to TIC

TEAM 14

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***Today, we will delve into the fascinating world of Information and Communication Technology, commonly known as ICT. These technologies play a crucial role in our daily lives, influencing various aspects, from communication to education, business, and entertainment.***

1. ***WHAT IS ICT ?***

**Information and Communication Technology (ICT) refers to the integration of telecommunications, computing, and multimedia technologies for processing, storing, and sharing information. It is a vital component of our interconnected world, influencing various aspects of modern life such as communication, education, business, healthcare, and entertainment.**

***COMPONENTS OF ICT***

**1*.Hardware:***

**Includes computers, servers, network devices, and other physical equipment.**

**2.*Software:***

**Encompasses applications, operating systems, and other programs enabling the functioning of ICT systems.**

**3.*Networks:***

**Connects hardware components and facilitates communication and data transfer.**

**4.*Data*:**

**Involves the information processed and stored by ICT systems.**

**5.*People:***

**Users and professionals who interact with ICT systems.**

***Role of ICT in Society***

**1.*Communication*:**

**Facilitates real-time communication through email, instant messaging, and social media platforms.**

**2*.Education*:**

**Enhances learning through e-learning platforms, educational software, and online resources.**

**3.*Business*:**

**Enables efficient business operations, communication, and collaboration through tools like video conferencing and project management software.**

**4.*Healthcare*:**

**Supports electronic health records, telemedicine, and medical imaging. *Emerging Technologies in ICT***

**1.*Artificial Intelligence (AI)*:**

**Enhances data analysis, automation, and decision-making processes.**

**2.*5G Technology*:**

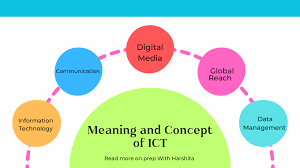
**Provides faster and more reliable wireless communication.**

**3.*Internet of Things (IoT)*:**

**Connects devices and enables data exchange in various applications.**

**4*.Blockchain*:**

**Secures and verifies transactions in a decentralized manner.**

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**Information and Communication Technology play a central role in our modern society. From transforming businesses to improving education and healthcare, ICT shapes our digital future. However, addressing challenges related to security, privacy, and ethics is crucial for ensuring sustainable technological development.**

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1. ***Google Services***

**In the ever-expanding landscape of Information and Communication Technologies (TIC), Google stands as a pioneer, offering an extensive suite of tools that have become indispensable to users worldwide. This report provides an enhanced overview of key Google services, shedding light on their functionalities, impact, and the pivotal role they play in shaping our digital interactions.**

***1- Google Search: Gateway to Information***

**Google Search is the beating heart of the internet, allowing users to delve into the vast expanse of online information. Since its inception in 1997, this search engine has continually evolved, employing advanced algorithms to deliver precise and relevant results. The simple yet powerful interface, adorned with quick links, epitomizes Google's commitment to a seamless search experience.**

***2- Google Chrome: Navigating the Web with Precision***

**Introduced in 2008, Google Chrome swiftly became the browser of choice for millions. Beyond its speed and user-friendly interface, Chrome boasts cross-platform compatibility, ensuring a consistent experience across various devices. The innovative feature of synchronizing settings elevates user convenience, underlining Google's dedication to a personalized web experience.**

***3- Google Maps: Beyond Navigation***

**Google Maps transcends conventional mapping services, offering not just navigation but a comprehensive exploration of geographical areas. The incorporation of aerial and satellite images, coupled with the immersive Google Street View, provides users with a visual tour of the world. Additionally, businesses find a spotlight on Google Maps, enhancing its utility for both individuals and enterprises.**

***4- Google Translate: Bridging Linguistic Divides***

**Google Translate has become a linguistic ally for users worldwide. Its sophisticated translation algorithms support nearly a hundred languages, facilitating seamless communication across borders. The tool's versatility extends to translating various file formats, from documents to presentations, solidifying its role as a global communication enabler.**

***5- Google Drive: Redefining File Management***

**Google Drive represents the pinnacle of cloud storage, offering users a secure space to store and access diverse file types. With 15 GB of free storage and subscription options for more extensive needs, Google Drive seamlessly integrates with other Google services, ensuring accessibility and collaboration from anywhere.**

***6- Gmail: The Email Powerhouse***

**With over 1.5 billion active users in 2020, Gmail has emerged as a dominant force in email communication. Beyond its expansive storage, Gmail stands out for its intuitive interface, support for attachments, and the ability to link external email accounts. It has transformed email into a dynamic communication hub for personal and professional use.**

***7- Google Docs: Collaborative Excellence***

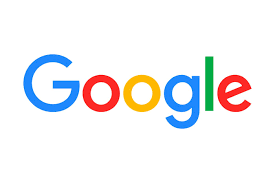
**Google Docs revolutionizes collaborative document creation. Multiple users can edit documents simultaneously, fostering real-time teamwork. The integration with Google's cloud service ensures that documents are securely stored and easily accessible, epitomizing the collaborative spirit that defines Google's suite of services.**

***8- Google Play: Unifying the Android Experience***

**Google Play serves as the epicenter of the Android ecosystem, hosting millions of apps and games. Its consolidation of various app markets ensures a unified platform, accessible across diverse Android devices. The categorization into Google Play Books, Movies and TV, and more adds a layer of organization, simplifying app discovery for users.**

***Other Google Services***

**Beyond these core services, Google offers a diverse array of tools and platforms. Google Ads and AdSense cater to the advertising needs of businesses, while Google Assistant introduces an interactive, voice-controlled element to user interactions. Services like Google Calendar, Classroom, Earth, Keep, Photos, and Shopping cater to specific needs, rounding out Google's comprehensive ecosystem.**

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1. ***MICROSOFT***

**Microsoft is a multinational technology company founded on April 4, 1975 by Bill Gates and Paul Allen. Headquartered in Redmond, Washington,it is one of the largest and most influential technology companies in the world. The company is famous for its tools that have greatly contributed to the development of ICT.**

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***MICROSOFT TOOLS’s PURPOSES:***

* ***Microsoft Windows* is a dominant operating system used in personal computers and servers, providing a platform for various ICT applications.**
* ***Microsoft Office suite*, including applications like Word, Excel, and PowerPoint, is extensively used for document creation, data analysis, and presentations in ICT environments.**
* ***Microsoft Azure* offers cloud services, allowing organizations to build, deploy, and manage ICT applications and infrastructure in the cloud.**
* ***Windows Server* is a key component in many ICT setups, providing server functionality for applications, data storage, and network management.**
* ***Visual Studio* is a popular integrated development environment (IDE) used by software developers to create applications for the ICT sector.**
* ***Microsoft Teams*, Skype for Business, and Outlook are used for communication and collaboration within ICT teams and across organizations.**
* ***Microsoft SQL* Server is employed for database management, playing a crucial role in storing and retrieving data in ICT applications.**

**Microsoft offers security solutions to protect ICT systems and data, including Windows Defender for endpoint protection and Azure Active Directory for identity and access management.**

**ASP.NET and other Microsoft technologies are used for web development, supporting the creation of ICT applications accessible through web browsers.**

**Microsoft provides Azure IoT services for managing and analyzing data from IoT devices, contributing to the development of ICT solutions in the IoT space.**

***MICROSOFT FEATURES :***

* **Word processing in Word, spreadsheets in Excel also presentations PowerPoint.**
* **Seamless integration for collaborative editing and sharing.**
* **Microsoft Teams for chat, video calls, and team collaboration.**
* **Integration with Outlook for email management.**
* **Cloud computing services for infrastructure, platform, and software.**
* **Scalable solutions for data storage, analytics, and machine learning.**
* **Power BI for business intelligence and data visualization.**
* **Power Apps for low-code application development.**
* **Power Automate for workflow automation.**
* **Integrated Development Environment (IDE) for diverse programming languages.**
* **Azure DevOps for version control and CI/CD pipelines.**
* **User-friendly interface with customization options.**
* **Regular security updates, Windows Defender antivirus, and BitLocker encryption.**
* **Common file formats ensuring compatibility across Office applications.**
* **Real-time collaboration in Office Suite for concurrent editing.**
* **Team collaboration and project management in Teams.**
* **Encryption, authentication, and access controls.**
* **Regular security updates for OS and applications.**
* **Microsoft tools widely used in educational settings.**

1. ***GIT***

**Git is a DevOps tool used for source code management. It is a free and open-source version control system used to handle small to very large projects efficiently. Git is used to tracking changes in the source code, enabling multiple developers to work together on non-linear development. Linus Torvalds created Git in 2005 for the development of the Linux kernel**

**Git is a version control system used for tracking changes in computer files. It is generally used for source code management in software development.**

***WHAT IS GIT USED FOR ?***

**Git is used to tracking changes in the source code**

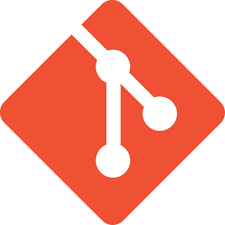
**The distributed version control tool is used for source code management**

**It allows multiple developers to work together**

**It supports non-linear development through its thousands of parallel branches**

***FEATURES OF GIT :***

* **Tracks history**
* **Free and open source**
* **Supports non-linear development**
* **Creates backups**
* **Scalable**
* **Supports collaboration**
* **Branching is easier**
* **Distributed development**

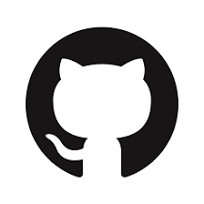
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1. ***WHAT IS GITHUB ?***

**GitHub is an AI-powered developer platform that allows developers to create, store, and manage their code. It uses Git software, providing the**

**distributed version control of Git plus access control, bug tracking, software feature requests, task management, continuous integration, and wikis for every project. Headquartered in California, it has been a subsidiary of Microsoft since 2018**

**It is commonly used to host open source software development projects. As of January 2023, GitHub reported having over 100 million developers and more than 372 million repositories, including at least 28 million public repositories. It is the world's largest source code host as of June 2023.**

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***FOUNDING***

**Development of the GitHub platform began on October 19, 2007. The site was launched in April 2008 by Tom Preston-Werner, Chris Wanstrath, P. J. Hyett and Scott Chacon after it had been available for a few months as a beta release. GitHub has an annual keynote called GitHub Universe.**

***ORGANIZATIONAL STRUCTURE***

**GitHub was originally a flat organization with no middle managers; in other words, "everyone is a manager" (self-management). Employees could choose to work on projects that interested them (open allocation), but the chief executive set salaries. (i.e. Individual or groups of company executive leaders decides on project aims and development, including funding)**

**In 2014, GitHub, Inc. added a layer of middle management in response to serious harassment allegations against its senior leadership. As a result of the scandal, Tom Preston-Werner resigned from his position as CEO.**

***SERVICES***

**Projects on GitHub.com can be accessed and managed using the standard Git command-line interface; all standard Git commands work with it. GitHub.com also allows users to browse public repositories on the site. Multiple desktop clients and Git plugins are also available. In addition, the site provides social networking-like functions such as feeds, followers, wikis (using wiki software called Gollum), and a social network graph to display how developers work on their versions ("forks") of a repository and what fork (and branch within that fork) is newest.**

**Anyone can browse and download public repositories, but only registered users can contribute content to repositories. With a registered user account, users can have discussions, manage repositories, submit contributions to others' repositories, and review changes to code. GitHub.com began offering limited private repositories at no cost in January 2019 (limited to three contributors per project). Previously, only public repositories were free. On April 14, 2020, GitHub made "all of the core GitHub features" free for everyone, including "private repositories with unlimited collaborators."**

**The fundamental software that underpins GitHub is Git itself, written by Linus Torvalds, creator of Linux. The additional software that provides the GitHub user interface was written using Ruby on Rails and Erlang by GitHub, Inc. developers Wanstrath, Hyett, and Preston-Werner.**

***WHAT IS GITHUB’s PURPOSE ?***

**The primary purpose of GitHub is to facilitate the version control and issue tracking aspects of software development. Labels, milestones, responsibility assignment, and a search engine are available for issue tracking. For version control, Git (and, by extension, GitHub.com) allows pull requests to propose changes to the source code. Users who can review the proposed changes can see a diff between the requested changes and approve them. In Git terminology, this action is called "committing" and one instance of it is a "commit." A history of all commits is kept and can be viewed at a later time .**