Universidad Nacional de San Agustín de Arequipa

Facultad de Ingeniería de Producción y Servicios

Escuela Profesional de Ingeniería de Sistemas

TRABAJO DE INVESTIGACIÓN FORMATIVA

Tema

Lexical Exploration in Systems Engineering: A Comprehensive Collection of Key Terms for Each Letter of the Alphabet in English

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Índice

1. INTRODUCCIÓN

En el campo de la Ingenieria de Sistemas, poseer un vocabulario técnico amplio y preciso en inglés es fundamental para el desarrollo profesional y académico. El inglés técnico no solo facilita la comprensión de literatura especializada, sino que también mejora la capacidad de comunicación en un entorno globalizado, donde el inglés es el idioma predominante de la ciencia y la tecnología.

El objetivo de esta investigación es compilar un compendio exhaustivo de términos clave en inglés, organizados alfabéticamente, que son relevantes para la Ingeniería de Sistemas. Cada letra del abecedario será explorada en profundidad para identificar la mayor cantidad de palabras posibles que se utilizan en nuestra disciplina.

A través de esta investigación, buscamos no solo enriquecer nuestro vocabulario técnico, sino también proporcionar una herramienta útil para estudiantes y profesionales que deseen mejorar su dominio del inglés en contextos técnicos. Al final de este trabajo, esperamos haber creado un recurso valioso que contribuya al desarrollo de competencias lingüísticas.

2. OBJETIVOS

2.1. Objetivo General

Compilar un compendio exhaustivo de términos clave en inglés, organizados alfabéticamente, que sean relevantes para la Ingeniería de Sistemas, con el fin de enriquecer el vocabulario técnico de estudiantes y profesionales en esta disciplina.

2.2. Objetivos Especificos

- Identificar y recolectar palabras técnicas en inglés relevantes para la Ingeniería de Sistemas que comiencen con cada letra del abecedario.

- Clasificar y organizar las palabras recolectadas en categorías temáticas dentro de la Ingeniería de Sistemas, tales como desarrollo de software, redes, bases de datos, y ciberseguridad.

- Proporcionar ejemplos del uso de cada palabra encontrada.

- Desarrollar un recurso didáctico que pueda ser utilizado en cursos de inglés técnico para Ingeniería de Sistemas, mejorando así las competencias lingüísticas de los estudiantes. Evaluar la relevancia y aplicabilidad de los términos técnicos recopilados a través de encuestas y entrevistas con profesionales y académicos del área.

3. METODOLOGÍA

Para la realización de esta investigación, se llevará a cabo un proceso de recolección y clasificación de términos técnicos en inglés relevantes para la Ingeniería de Sistemas. Se realizará una búsqueda exhaustiva de términos técnicos en inglés relacionados con la Ingeniería de Sistemas. Se utilizarán fuentes confiables como libros de texto, artículos académicos, sitios web especializados y glosarios técnicos. Los términos recolectados serán organizados alfabéticamente, comenzando con la letra A y avanzando hasta la letra Z.

4. CUERPO DE LA INVESTIGACIÓN

4.1. Letra G

- **Gateway**
  - The gateway connects different networks.

- Every network needs a gateway for communication.

- **Gigabyte**

  - The hard drive has a capacity of 500 gigabytes.
  - A gigabyte is equal to 1,024 megabytes.

- **Graphical User Interface**

  - The software has a user-friendly graphical user interface.
  - A graphical user interface makes interaction easier.

- **Gigahertz**

  - The processor speed is measured in gigahertz.
  - Higher gigahertz means a faster CPU.

4.2. Letra H

- **Hard Drive**

  - The hard drive stores all the data.
  - A larger hard drive can hold more files.

- **Hyperlink**

  - Click the hyperlink to visit the website.
  - Hyperlinks connect different web pages.

- **HTML**

  - HTML is the standard markup language for web pages.
  - Learning HTML is essential for web development.

- **Host**

  - The server acts as a host for the website.
  - Each device on the network is a host.

4.3. Letra I

- **Internet**

  - The internet connects millions of computers worldwide.
  - You can find information on the internet.

- **IP Address**

  - Every device has a unique IP address.
  - An IP address identifies a device on the network.

- **Input Device**

  - A keyboard is an input device.
  - Input devices allow users to interact with the computer.

- **Integrated Circuit**

  - An integrated circuit is found in every computer.
  - Integrated circuits are used in various electronic devices.

4.4. Letra J

- **Java**

  - Java is a popular programming language.
  - Many applications are developed using Java.

- **JSON**

  - JSON is used for data interchange.
  - The API returns data in JSON format.

- **JUnit**

  - JUnit is used for testing Java applications.
  - Writing tests in JUnit improves code quality.

- **JDBC**

  - JDBC is used to connect Java applications to databases.
  - Using JDBC simplifies database interactions.

4.5. Letra K

- **Kernel**

  - The kernel is the core of the operating system.
  - A stable kernel is essential for system performance.

- **Keyword**

  - In programming, keywords have special meanings.
  - Keywords cannot be used as variable names.

- **Kilobyte**

  - A kilobyte is equal to 1,024 bytes.
  - Small files are often measured in kilobytes.

- **Kubernetes**

  - Kubernetes is used for container orchestration.
  - Managing applications with Kubernetes is efficient.

4.6. Letra L

- **Linux**

  - Linux is an open-source operating system.
  - Many servers run on Linux.

- **Loop**

  - A loop repeats a block of code.
  - Loops are essential in programming.

- **Library**

  - A library provides reusable code.
  - Developers use libraries to save time.

- **Load Balancer**

  - A load balancer distributes traffic across servers.
  - Using a load balancer improves system reliability.

4.7. Letra M

- **Microprocessor**

  - The computer has a microprocessor.
  - A microprocessor is a samll chip.

- **Mainframe**

  - The company uses a mainframe for data storage.
  - A mainframe is very powerful.

- **Modem**

  - I need a modem to connect to the internet.
  - The modem is small and white.

- **Motherboard**

  - The motherboard is inside the computer.
  - Every computer has a motherboard.

- **Malware**

  - Malware can harm your computer.
  - Good antivirus software can stop malware.

4.8. Letra N

- **Network**

  - The office has a computer network.
  - A network connects many computers.

- **Node**

  - Each computer is a node in the network.
  - The node is part of a larger system.

- **Nanotechnology**

  - Nanotechnology is used in medicine.
  - Nanotechnology works on a very small scale.

- **Notebook (Computer)**

  - He uses a notebook for his work.
  - A notebook is a portable computer.

4.9. Letra O

- **Operating System**

  - Windows is an operating system.
  - Every computer needs an operating system.

- **Optical Fiber**

  - Optical fiber cables are very fast.
  - The internet uses optical fiber.

- **Open Source**

  - Linux is an open source software.
  - Open source software is free to use.

- **Overclocking**

  - Overclocking makes the computer faster.
  - Overclocking can heat up the CPU.

4.10.   Letra P

- **Programming**

  - Yourdyy is learning programming.
  - Programming is writing computer code.

- **Processor**

  - The processor is the brain of the computer.
  - A fast processor makes a computer quick.

- **Peripheral**

  - A mouse is a peripheral device.
  - Printers and scanners are peripherals.

- **Protocol**

  - HTTP is a web protocol.
  - Protocols help computers communicate.

4.11.   Letra Q

- **Query**

  - Joao made a query in the database.
  - A query finds information quickly.

- **Quantum Computing**

  - Quantum computing is very advanced.
  - Quantum computers can solve hard problems.

- **Queue**

  - The printer has a print queue.
  - A queue organizes tasks in order.

4.12.   Letra R

- **Router**

  - The router connects to the internet.
  - Every home network needs a router..

- **RAM (Random Access Memory)**

  - RAM makes the computer run faster.
  - Adding more RAM helps with multitasking.

- **Repository**

  - The code is stored in a repository.
  - A repository helps with version control.

- **Runtime**

  - The program needs a runtime environment.
  - Runtime errors happen during execution.

4.13.   Letra S

- **Server**

  - Our company upgraded to a more powerful server to handle increased traffic.
  - The server crashed during peak hours, causing significant downtime for our users.

- **Scripting**

  - Scripting languages like Python and JavaScript are essential for automating tasks.
  - He used a scripting tool to extract data from multiple websites efficiently.

- **Security**

  - Implementing robust security measures can prevent unauthorized access to sensitive data.
  - The IT department conducted a security audit to identify potential vulnerabilities.

- **Software**

  - The software development team released a new version of the application with enhanced features.
  - It is important to keep your software updated to protect against security threats.

- **Storage**

  - Cloud storage solutions provide scalable options for data backup and retrieval.
  - He ran out of storage space on his laptop and had to delete some files.

- **Synchronization**

  - Data synchronization ensures that all devices have the most up-to-date information.
  - The calendar app allows synchronization across multiple devices.

- **Scalability**

  - Scalability is a critical factor in the design of distributed systems.
  - The application was built with scalability in mind, allowing it to handle more users over time.

4.14. Letra T

- **Tag**

  - HTML tags are used to define the structure and content of web pages.
  - The programmer added metadata tags to improve the website's search engine optimization.

- **Taskbar**

  - The taskbar in Windows provides quick access to frequently used applications.
  - He customized his taskbar to include shortcuts for his favorite tools and programs.

- **Terabyte**

  - Modern data centers often have storage capacities measured in terabytes.
  - A single terabyte can hold approximately 250,000 high-quality photos.

- **Telemetry**

  - The spacecraft sent telemetry data back to Earth to monitor its systems and performance.
  - Telemetry is crucial in IoT devices to track and report sensor data in real-time.

- **Terminal**

  - The developer used the terminal to execute commands and run scripts on the server.
  - Understanding terminal commands is essential for effective system administration.

- **Thread**

  - Multithreading allows a program to perform multiple tasks simultaneously.
  - The software engineer optimized the code to reduce thread contention and improve performance.

- **Throughput**

  - Network throughput measures the amount of data successfully transmitted over a network in a given time.
  - Increasing the server's throughput improved the website's loading times for users.

- **Thumbnail**

  - Thumbnails provide a quick preview of images in a gallery.
  - She clicked on the thumbnail to view the full-sized photo.

- **Token**

  - The authentication system uses tokens to verify user identities without storing passwords.
  - Each API request includes a token to ensure secure communication between the client and server.

- **Toolbar**

  - The toolbar at the top of the software provides shortcuts to commonly used functions.
  - He customized his toolbar to include only the tools he uses frequently.

- **Traceroute**

  - The network engineer used traceroute to diagnose where the data packets were being delayed.
  - Traceroute is a valuable tool for mapping the path data takes through a network.

- **Tuple**

  - A tuple is a finite ordered list of elements often used in database queries.
  - In Python, tuples are immutable, meaning their contents cannot be changed after creation.

4.15. Letra U

- **UDP**

  - UDP (User Datagram Protocol) is used for time-sensitive transmissions such as video playback or online gaming.
  - Unlike TCP, UDP does not guarantee the delivery of data packets.

- **UI**

  - A well-designed UI (User Interface) enhances the user experience significantly.
  - The development team focused on improving the UI to make the application more user-friendly.

- **UEFI**

  - UEFI (Unified Extensible Firmware Interface) is a modern version of BIOS with more features and a better user interface.
  - Many new computers use UEFI instead of the traditional BIOS.

- **UML**

  - UML (Unified Modeling Language) is used to create diagrams that represent the structure and behavior of a system.
  - The software engineers used UML to design the architecture of the new system.

- **Unicode**

  - Unicode provides a unique number for every character, no matter the platform, program, or language.
  - The latest version of Unicode includes over 143,000 characters.

- **URI**

  - A URI (Uniform Resource Identifier) is a string of characters used to identify a resource on the internet.
  - The web page's URI includes both the URL and additional information like the anchor.

- **URL**

  - A URL (Uniform Resource Locator) is the address used to access a web resource.
  - She bookmarked the URL of her favorite website for easy access.

- **USB**

  - USB (Universal Serial Bus) is the most common interface for connecting peripheral devices to a computer.
  - He plugged the USB drive into his computer to transfer files.

- **Uptime**

  - The server's uptime is a crucial metric for maintaining reliable services.
  - They monitor the system's uptime to ensure minimal downtime for users.

4.16. Letra V

- **Variable**

  - The value of the variable can change during the execution of the program.
  - In statistical analysis, a variable is any characteristic that can take on different values.

- **Vector**

  - The graphics software uses vector images to ensure scalability without loss of quality.
  - In physics, a vector is a quantity that has both magnitude and direction.

- **Virtualization**

  - Virtualization technology enables the creation of virtual instances of hardware resources.
  - By using virtualization, businesses can optimize resource utilization and reduce costs.

- **Virus**

  - A computer virus can replicate itself and spread from one computer to another.
  - Installing antivirus software can help protect your system from malicious viruses.

- **VPN**

  - A VPN, or Virtual Private Network, provides a secure connection over the internet.
  - Using a VPN can help protect your privacy and sensitive data when browsing online.

4.17. Letra W

- **Web Hosting**

  - They chose a reliable web hosting provider to ensure their website had minimal downtime.
  - Web hosting services are essential for making your website accessible on the internet.

- **Wearable Technology**

  - Wearable technology includes devices like smartwatches and fitness trackers.
  - Advances in wearable technology have made it possible to monitor health metrics in real-time.

- **Web Service**

  - A web service allows different applications to communicate with each other over the internet.
  - They developed a web service to integrate their platform with third-party applications.

- **Wireless**

  - Wireless technology enables communication without the need for physical connections.
  - The office upgraded to a wireless network to provide more flexibility for employees.

4.18. Letra X

- **XML**

  - XML, or Extensible Markup Language, is used to store and transport data.
  - Many web services use XML for communication between different systems.

- **XSS**

  - XSS, or Cross-Site Scripting, is a web security vulnerability that allows the injection of malicious scripts.

- Protection against XSS attacks includes input validation and escaping user input.

- **XPath**

  - XPath is a language used to navigate through elements and attributes in XML documents.
  - Developers use XPath to extract specific data from XML documents efficiently.

- **Xcode**

  - Xcode is Apple's Integrated Development Environment (IDE) for creating applications for iOS and macOS.
  - With Xcode, developers can write, compile, and debug applications in various programming languages.

- **XAML**

  - XAML, or Extensible Application Markup Language, is used to design user interfaces in Windows applications.
  - Developers of WPF and UWP applications use XAML to define the appearance and behavior of user interface elements.

4.19.   Letra Y

- **YAML**

  - YAML, or YAML Ain't Markup Language, is a human-readable data serialization standard.
  - YAML is often used for configuration files and data exchange between languages with different data structures.

- **YARN**

  - YARN, or Yet Another Resource Negotiator, is a resource management and job scheduling technology in the Apache Hadoop ecosystem.
  - YARN enhances the scalability and efficiency of processing large datasets by allowing multiple data processing engines.

- **Yacc**

  - Yacc, or Yet Another Compiler Compiler, is a tool used in Unix systems to generate parsers for interpreting structured text.
  - Developers use Yacc to create syntax analyzers for compilers, which convert high-level code into machine code.

- **YouTrack**

  - YouTrack is a project management and issue tracking tool developed by JetBrains.
  - Teams use YouTrack to track bugs, manage projects, and collaborate efficiently.

- **YUI**

  - YUI, or Yahoo User Interface Library, is an open-source JavaScript and CSS library for building interactive web applications.
  - Although no longer actively maintained, YUI provided developers with tools and utilities for creating rich web experiences.

4.20. Letra Z

- **Zero-day**

  - A zero-day vulnerability is a software flaw that is unknown to the software vendor and for which no patch is available.
  - Zero-day exploits can be particularly dangerous as they can be used by attackers before the vendor has a chance to address the vulnerability.

- **ZFS**

  - ZFS, or Zettabyte File System, is a high-performance file system designed for data integrity and scalability.
  - ZFS includes features like data compression, snapshots, and dynamic striping for improved data management.

- **ZooKeeper**

  - Apache ZooKeeper is a distributed coordination service for managing large clusters of servers.
  - ZooKeeper helps maintain configuration information, naming, and synchronization services across distributed applications.

- **Zig**

  - Zig is a general-purpose programming language designed for robustness, optimality, and maintainability.
  - Developers use Zig for system programming, offering features like manual memory management and minimal runtime.

- **Z-shell**

  - Z-shell, or Zsh, is a powerful Unix shell that extends the Bourne shell with numerous features.
  - Zsh includes features like advanced autocompletion, globbing, and a rich scripting language for enhanced productivity.

5. CONCLUSIONES

6. RECOMENDACIONES

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