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A is a Part of B

* School - Classroom. A school can contain multiple classrooms. Now if we “delete” the school, the classrooms will automatically be deleted. So Child objects cannot live without the Parent object. If a parent object is deleted, all its child objects will also be deleted.
* The keyboard is a physical component of a computer, serving as an essential input device for users. It allows individuals to input text, commands, and instructions into the computer system. Typically connected via a cable or wireless connection, the keyboard is directly integrated into the computer's structure. As a vital part of the computer, the keyboard provides a tangible means for users to interact with and control the machine. It enables efficient and convenient input, facilitating various tasks and functions within the computer system.

A is a Logical part of B

* In presentations, slides serve as logical components created with software like PowerPoint or Google Slides. Each slide represents unique content, including text, images, and charts. The slides are carefully arranged to ensure a coherent flow, enabling presenters to deliver information in a structured and organized manner. This logical progression of slides enhances the effectiveness of the presentation, ensuring a clear and engaging communication of ideas.
* In movies, scenes serve as logical components that depict different events, locations, or moments in the story. Each scene plays a vital role in advancing the narrative, developing characters, or exploring thematic elements. These scenes are carefully connected to create a seamless and captivating cinematic experience. By establishing a logical progression of scenes, movies engage viewers and provide a cohesive storytelling journey.

A is physically contained in B

**Clothes and Wardrobe:**

In a wardrobe, clothes are physical items that are stored and organized within it. The wardrobe serves as a dedicated space for keeping clothes, providing protection against dust and preserving their condition. By offering compartments, hangers, and shelves, the wardrobe facilitates effective storage and easy access to different types of clothing items. It acts as a functional and organized solution for maintaining a collection of clothes in a neat and tidy manner.

**Food and Refrigerator:**

In a refrigerator, food items are physical entities contained within it. The refrigerator provides a controlled environment with proper temperature and humidity levels to keep the food fresh and prevent spoilage.

A is logically contained in B

**Feature and Software Application:**

In software development, a software application contains various features that collectively provide specific capabilities or services. Features are logically organized within the application, contributing to its overall functionality. Each feature serves a distinct purpose and enhances the user experience by offering specific functionalities. The logical arrangement of features ensures smooth navigation and efficient utilization of the software application, providing users with a seamless and effective software experience.

**Paragraph and Essay**

In the context of an essay, paragraphs are logical components that contribute to its overall structure and coherence. Each paragraph represents a specific idea or topic, working together to form a well-organized and cohesive piece of writing. The logical connection between paragraphs ensures a smooth flow of information and allows the essay to effectively communicate its intended message. By organizing thoughts into distinct paragraphs, the essay becomes more readable and engaging, enhancing the understanding and impact on the reader.

A is a description of B:

**Movie Review and Film:**

A movie review serves as a comprehensive description of a film, providing an evaluation and analysis of its plot, performances, cinematography, and overall quality. It offers valuable insights and opinions about the film, aiding potential viewers in making informed decisions about whether to watch it. By delving into the various aspects of the movie, such as its storytelling, acting, visual presentation, and overall merit, the review guides individuals in determining their level of interest and expectation for the film.

**Biography and Person:**

In the context of a biography, a biography serves as a descriptive account of a person's life, chronicling their experiences, achievements, and significant events. It offers a narrative that provides insights into the person's character, contributions, and impact on the world. By delving into the individual's personal journey and accomplishments, the biography offers a compelling depiction of their life story, allowing readers to gain a deeper understanding of their unique experiences and the mark they have left on society.

A is a Member of B:

**Employee and Company:**

Within a company, employees are integral members of the organization. They occupy diverse roles and departments, actively contributing to the company's operations, goals, and overall success. As a cohesive workforce, employees play a pivotal role in the efficient functioning of the company, collaborating to achieve collective objectives and propel the organization forward. With their skills, dedication, and commitment, employees form the backbone of the company, driving its growth and ensuring its continued prosperity.

**Citizen and Country:**

Within a country, citizens are esteemed members of the nation. They possess inherent legal rights, along with corresponding responsibilities and obligations within the framework of the country. Citizens actively contribute to the development and progress of the nation by engaging in civic life and fulfilling their roles as responsible members of society. Through their participation in community initiatives, democratic processes, and social endeavors, citizens play a vital role in shaping the collective destiny of the nation, fostering unity, and advancing its welfare

A uses of manage B

**Teacher and Classroom Technology:**

In an educational setting, a teacher uses and manages classroom technology such as interactive whiteboards, projectors, or educational software. The teacher utilizes these tools to enhance teaching methods, deliver engaging lessons, and manage instructional materials.

**Photographer and Camera:**

In the field of photography, a photographer uses and manages a camera to capture images. The photographer operates the camera, adjusts settings, and employs different techniques to capture photos in various styles and genres.

A is known/logged/recorded/reported/captured in B

**Financial Transactions and Accounting Software:**

Accounting software records and captures financial transactions for businesses. It enables accurate bookkeeping and reporting by logging income, expenses, invoices, and other financial activities, providing a comprehensive record of transactions.

**Crime Incidents and Police Database:**

Crime incidents are reported and recorded in police databases. Law enforcement agencies log and capture crucial information about incidents, including incident details, evidence, suspects, and related data. This comprehensive record of criminal activities serves as a valuable resource for investigation, analysis, and maintaining a database of crime-related information.

A is an organizational subunit of B

**Division and University:**

University divisions are organizational subunits focusing on specific academic disciplines, like Science, Arts, or Engineering. They operate within the university, providing specialized education and research opportunities.

**Branch and Bank:**

Banks have multiple branches as organizational subunits, operating under the bank's umbrella. Branches provide banking services to customers in specific geographic areas, following the bank's policies and procedures. They are connected to the central bank's systems, ensuring seamless operations and adherence to the bank's guidelines.

A communicates with B.

**Phone Calls and Call Receivers:**

People communicate by making phone calls, where one person (A) dials a phone number or contacts another person (B) directly. The conversation allows for real-time communication and exchange of information.

**Letters and Addressees:**

Traditional mail, such as letters or packages, involves communication between the sender (A) and the recipient (B). The sender writes and sends a letter to a specific address, ensuring that the intended recipient receives the message.

A is next to B.

**Seats in a Theater**:

In a theater or cinema, seats are arranged next to each other in rows. Each seat (A) is located next to another seat (B), allowing audience members to sit together while enjoying a performance or movie.

Desks in a Classroom:

In a classroom, desks are typically arranged in rows or clusters. Each desk (A) is positioned next to another desk (B), creating a seating arrangement that facilitates learning and collaboration among students.

Q2: Multiplicity constraints in association define the number of instances of one class associated with instances of another class. Examples:

1:1 Multiplicity:

Employee and Social Security Number: Each employee (A) has one unique social security number (B), ensuring a one-to-one mapping.

Person and Passport: Each person (A) has one passport (B), establishing a unique association.

1:N Multiplicity:

Department and Employees: A department (A) can have multiple employees (B), allowing a one-to-many relationship.

Author and Books: An author (A) can write multiple books (B), creating a one-to-many association.

N:1 Multiplicity:

Students and School: Multiple students (A) can belong to one school (B), forming a many-to-one relationship.

Customers and Orders: Multiple customers (A) can place orders (B), establishing a many-to-one association.

N:N Multiplicity:

Students and Courses: Multiple students (A) can enroll in multiple courses (B), enabling a many-to-many relationship.

Actors and Movies: Multiple actors (A) can appear in multiple movies (B), establishing a many-to-many association.