ADS

Assignment: Lecture 3
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The first section of the lecture deals with the subject of frameworks and their objective of providing a partially developed but adaptable and extensible application for other users. In other words, frameworks provide a basic structure that makes it easy to build other applications. These frameworks are mainly used in business unit management, such as data processing. These are some aspects:

- **Modularity**: It implies encapsulating the logic behind interfaces, which allows a better organization and division of responsibilities.
- **Reuse**: It seeks to create functional interfaces that allow taking advantage of methods with shared logic.
- **Extensibility**: Stable functional interfaces can be extended, for example, by creating derived interfaces (A1...An).
- **Inversion of control:** A sequence of reactive methods is used to achieve greater control and flexibility in the execution flow.

In addition, ORB frameworks are mentioned, which facilitate communication between local and remote objects. In summary, the book presents key points to classify frameworks according to their scope:

- **System infrastructure frameworks:** Simplify the development of portable and efficient systems.
- **Middleware integration frameworks:** Allow seamless integration of applications and components.
- **Enterprise application frameworks:** They adapt to different domains and improve business operations. Although they can be expensive, they offer a significant return on investment.

Two framework concepts are also explored: "white box" and "black box". "White box" frameworks focus on the internal architecture and its tight coupling, usually through the use of inheritance. On the other hand, "black box" frameworks are more flexible, using delegation and composition. However, developing these kinds of frameworks can be more challenging, as it requires expertise to define the proper interfaces.

In addition, various articles related to the development of object-oriented (OO) frameworks and the role of reuse are mentioned. Concepts and techniques for building these frameworks are discussed, and case studies and lessons learned are presented. In general, the idea that object-oriented programming is essential in the 21st century is reinforced.