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Section: S3,4

- **What is meant by monolithic software?**

  the definition of Monolithic Software :

  Monolithic software is a single-tiered software architecture which integrates distinct components such as the input interface, business logic, and data access layer that are independently designed and developed in one code base.

  A monolithic application runs in a single module, i.e., all the functions or sub-modules and functionalities are built and deployed together. This is conceptually different from modular or microservices architectures where each service or function can be developed and deployed separately.

- **When is it advised to buildomolethic software?**

  Where in the process of a project is building a monolithic software recommended ,Monolithic software can be constructed in a few specific circumstances which include:

  Start-ups or Early Stage Projects: Building Monolithic software is quicker and easier to implement, especially important for start-ups / young projects that have short time-to-market goals which would ideally go into the development of the product.

  Smaller Applications: As a rule of thumb, smaller, applications, that require no advanced, extensive, and complex functionalities are easier to deploy and maintain than larger applications.

  Lack of Development Competence: Monolithic Architecture is simpler to design, build and deploy on smaller teams and where there is no the experience of building distributed systems or microservices.

Environments Requiring Consistent Deployment: A monolithic approach to software architecture can be beneficial in instances where updates or deployments are not a key focus since all units are deployed together thus reducing the complexity of pipeline deployments.

- **What is the most common architecture styles for monolithic systems? and what are its advantages?**

The most popular architectural style for monolithic systems is layered (or N-Tier) architecture. This style organizes the application into logical layers:

– Presentation layer: User interface and user engagement.
– Business Logic Layer: Deals with the application's key functions and rules.
– Data Access Layer: Deals with communication with any databases or data stores.

- **Advantages of Layered Architecture in Monolithic Systems**

- Ease of Understanding and Adoption by Developers: This arrangement is quite simple and can be developed and deployed easily and rapidly, hence assisting teams in launching products in the shortest time possible.

- Ease of Application Management: Controlling and tracking the application is quite easy because all the elements are contained in one codebase.

- Easier Development: There is little overhead because the monolith does all the methods

- that need to talk to one another which prevents having to add in network latency.

- Ease of Testing: In this case a single codebase means testing is simplified,testing and debugging become easier, as issues can be tracked within a centralized environment.

References

- For more insights on monolithic architectures, consider reading through (https://martinfowler.com/articles/microservices.html)
- To read more on layered architecture and its benefits in monolithic software, consult IBM's (https://www.ibm.com/cloud/learn/architectural-patterns).