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2. **Requirements**: Establish and document the architectural requirements
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   - State the system value proposition, establishing how the system will fit the users’ agenda and top-level, high-priority goals.
   - Document functional requirements by translating user goals into a set of use cases.
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Structuring

Define the architecture
- Based on studying other architectures, and past experience, formulate the architectural style, concepts, mechanisms and principles that will guide the architecture team during the next steps of structuring.
- Decompose the system into components. Identify the responsibilities of each component and interconnections between components.
- Model the dynamic behavior of the system, using UML collaboration diagrams to think through and refine the responsibilities and interfaces of the components.
- Create component specifications. Each should include a summary description of services the component provides, the component owner’s name, IID and version names, message signatures (IDL), a description of the operations, constraints or pre-post conditions for each operation (these may be represented in a state diagram), the concurrency model, constraints on component composition, a lifecycle model, how the component is instantiated, how it is named, a typical use scenario, a programming example, exceptions, and a test or performance suite.
- Map the components onto the processes of the physical system. Evaluate alternative solutions against requirements such as performance and scaling.

Validation

Validate that the architecture meets the requirements
- Conduct architecture assessments. These involve modeling and walking-through scenarios that exemplify requirements, as well as assessment by experts who look for gaps and weaknesses in the architecture based on their experience.
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Deployment

Deploy the architecture to the developer community
- Help the developer community understand the architecture and its rationale through consulting, tutorials and demos.
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Architects

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- Develop a **communication plan**. Identify the architecture stakeholders and their communication needs. Plan the activities that will produce the information, and the formats and timeframes in which to communicate the information.

**Requirements**
*Establish and document the architectural requirements*
- Establish which **business objectives** apply to the system to ensure that the architecture is aligned with the business agenda.
- Understand the system **context**. Determine the system boundary--what is in scope and what is out of scope. Understand the key organizational, business, competitive, and technical drivers affecting the architecture.
- State the system **value proposition**, establishing how the system will fit the users’ agenda and top-level, high-priority goals.
- Document functional requirements by translating user goals into a set of **use cases**.
- Document the **system qualities** or non-functional requirements (e.g., performance and security) by associating them with use cases or creating “what-if” scenarios.
Structuring

**Define the architecture**
- Based on studying other architectures, and past experience, formulate the *architectural style, concepts, mechanisms* and *principles* that will guide the architecture team during the next steps of structuring.
- Decompose the system into *components*. Identify the *responsibilities* of each component and *interconnections* between components.
- Model the dynamic behavior of the system, using *UML collaboration diagrams* to think through and refine the responsibilities and interfaces of the components.
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- Map the components onto the processes of the physical system. Evaluate alternative solutions against requirements such as performance and scaling.

Validation

**Validate that the architecture meets the requirements**
- Conduct *architecture assessments*. These involve modeling and walking-through scenarios that exemplify requirements, as well as assessment by experts who look for gaps and weaknesses in the architecture based on their experience.
- Develop *prototypes* or proofs-of-concept. Take a skeletal version of the architecture all the way through to implementation to prove out critical aspects of the architecture.

Deployment

**Deploy the architecture to the developer community**
- Help the developer community understand the architecture and its rationale through *consulting, tutorials* and demos.
- Actively watch for and respond to the need for changes to the architecture. Stay engaged!
- Ensure that the designs and implementations adhere to the architecture by being involved in *design reviews*.

Architects

Architects create and maintain software architectures. Technical responsibilities include: developing an architectural vision; experimenting with alternative architectural approaches; creating models and component specification documents; and validating the architecture against requirements and assumptions. Non-technical activities include envisioning the right architectural approach to the customers problem set given the business objectives of the architect’s organization; actively selling the architecture to its various stakeholders; and consulting to and training the developer organization in the use of the architecture.

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**Software Architecture**

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- Develop a communication plan. Identify the architecture stakeholders and their communication needs. Plan the activities that will produce the information, and the formats and timeframes in which to communicate the information.

**Requirements**

*Establish and document the architectural requirements*

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Structuring

**Define the architecture**
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Validation

**Validate that the architecture meets the requirements**
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**Deploy the architecture to the developer community**
- Help the developer community understand the architecture and its rationale through *consulting, tutorials* and demos.
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Architects

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The software architecting process involves the following steps:

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