

Project Report for <Project Name>

Practice Module for Certificate in Architecting Scalable Systems

Team <Number>

Members:

<Member’s Names>

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# Introduction

## Background

Provide the background and context of the project and its current status from a project perspective.

## Business Needs

Include a brief summary of the business needs and drivers for the initiative.

## Stakeholders

List the key business and IT stakeholders in the initiative.

## Project Scope

Briefly describe the scope of the solution. State what is included in the scope and what is out of scope. If relevant, define the phases of the solution and what is delivered in each phase. Provide references to the documented scope. Also clearly define the scope for the architecture, design and implementations if you do not implement everything that you have architected.

### Functionality in scope

Briefly list down the requirements that are in the scope of the project.

### Functionality out of scope

Briefly list down the requirements that are out of scope of the project.

# Project Conduct

## Project Plan

Describe the rough WBS tasks and the estimated efforts.

## Project Status

Describe the current status of the project. Highlight if there are outstanding issues to be addressed.

## Project Metrics

Provide the actual project milestones achieved as well as the rough total effort expended by each team member.

# Solution Overview

## Logical Architecture & Design

Describe the architecturally significant parts (or elements) of the solution and the design model showing its decomposition into subsystems using logical detail deployment diagram and other diagrams as necessary.

The individual elements of the solution must be clearly defined and assigned to the respective providers. An element (or subset of multiple elements) may be allocated to a Vendor.

A solution element is any part of the architecture of the overall solution, e.g., a COTS product, a custom-built software module, a data repository, a network device, etc. Each element can utilise the services provided by other elements and provide services of its own.

The logical view describes how elements participate in the solution. It includes static and dynamic relationships and interactions between elements. The documentation typically includes a number of diagrams expressing the different kinds of relationships — for example, dependency relationships, usage relationships, interaction relationships, etc

### Key Architectural Decisions

Provide a summary of the significant decisions made in arriving at the architecture of the solution that are related and/or reflected in the logical view. Documented decisions should focus on trade-off choices and rationale.

The key architectural decisions taken are as follows:

|  |  |
| --- | --- |
| Identifier | Description |
| AD-01 | *…* |
| AD-02 | *…* |

### Tiers and Layers

Describe the tiers and layers of the solution. E.g. Presentation layer, Business Logic layer, Data Access layer, Web Server tier and Integration tier. Adapt the section if you organized the solution using a different method (not tiered or layered approach).

### Nodes and Subsystems

Describe the architecturally significant parts (or elements) of the solution showing the decomposition into subsystems.

### Platform Design

Where relevant, describe the elements of Domain Driven Design like domain entities, bounded contexts, aggregates, domain events, etc. In particular, describe how the platform is designed to interact with the producers and consumers.

## Physical Architecture & Design

Describe the architecturally significant components (or elements) of the solution by describing the physical design which may include the network, technologies, nodes and machines where the components are deployed using physical detail deployment and other diagram as necessary. This is where you can also include and describe the cloud services that you use if any.

### Key Architectural Decisions

Provide a summary of the significant decisions made in arriving at the architecture of the solution that are related and/or reflected in the physical view. Documented decisions should focus on trade-off choices and rationale. You should continue the numbering from the previous architectural decisions table

The key architectural decisions taken are as follows:

|  |  |
| --- | --- |
| Identifier | Description |
| AD-03 | *…* |
| AD-04 | *…* |

### Technology and Services

Describe the architecturally significant technology and cloud services that are used in the solution and describe the trade-offs and rationale.

### Persistence Design

State how data is managed in the solution, e.g., in a relational database. Describe any special considerations for transaction management, concurrency, etc. Data persistence — indicate which parts of the data model must persist beyond a transaction or session and the period of persistence. Provide a logical data model for the persistent data storage used in the solution.

Describe the information architecture of the solutions describing the type of data inventory and classification that you have and how the data will be stored, secured and handled. E.g.:

<Data Group>

Data format: <explain the different type of data that belong to this group and how the data is stored as record or flat file or other form of data, in what format(JSON, XML, etc)

Proposed storage technology: <explain the technology used to store this data e.g. Oracle RDBMS, MongoDB document database, etc with the rationale>

Security requirements and controls: <explain in high level the security requirement for this data and what are the security controls that are applicable for this data>

Trade-off consideration: <document the trade-off consideration that has been considered in making this decision.

### Detailed Design

Describe the detailed design (of classes, objects, functions, etc.) of a few architecturally representative use cases or user stories.

## Other Architectural Decisions

Provide a summary of the other significant decisions made in arriving at the architecture of the solution that has not been mentioned. If you explain the rationale of the decisions in other section (such as the quality attribute sections), you can make a reference to those sections.

The key architectural decisions taken are as follows:

|  |  |
| --- | --- |
| Identifier | Description |
| AD-03 | *…* |
| AD-04 | *…* |

## Architectural Limitation

(Optional but it’s important to acknowledge any known limitation of your solution before any stakeholder point them out to you) Include any outstanding issues from a solution architecture and high-level design perspective which need to be resolved. For resolutions that extend beyond existing project plans, there should be a roadmap with a timeline for closing the issue.

The key outstanding architectural issues in the solution are as follows:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Identifier | Issue and impact | Description | Resolution | Owner | Status |
| AISS–01 | Identify the issue and its impact | Describe the issue and its impact | Describe the resolution for the issue | Owner of the issue | E.g., Open, In Progress, Closed, etc. |
| AISS–02 | … | … | … | … | … |

# Quality Attributes

## Performance

The purpose of this section is to describe the solution handles the performance requirement of the system. You can describe the use of caching, load balancing, any optimization that you plan/have done in the design of the system

## Availability

The purpose of this section is to describe how the solution handles high availability requirement.

## Security

The purpose of this section is to describe the security that will be incorporated into the solution which includes any security services: IAM, encryption, hashing, IDS, IPS, etc.

## Extensibility and Maintainability

The purpose of this section is to describe the solution handles the maintainability requirement. How the platform and applications can be extended, enhanced and maintained in the future? You can refer to the platform section if necessary.

# DevOps and Development Lifecycle

## Source Control Strategy

Describe the strategy that you use to manage your source code and other artefacts in your configuration management. Include your project structures, repository strategy, branching strategy, authentication of developers, etc.

## Continuous Integration

Describe the pipeline on how you perform continuous integration in your project including the trigger for each integration jobs, the various jobs, tests, etc.

## Continuous Delivery

Describe the pipeline on how you automate deployment to different environment including how many environments are setup, who is responsible for approving promotion between environments and how deployment get verified.

# <other things to be highlighted>