# 7. Technical Competency demonstrator

Our project requires skills using the following key technology:

The very technology that will be used is a database engine.

**Database engine**

The database engine will be the primary technology where most of the data will be stored. The choice of database will be decided later after conducting feasibility study of different available choices. However, to give an idea, if the project stakeholder decides to go with a no-SQL database, MongoDB shall be the top on the priority list. If it is decided that a relational database engine is to be used, then MySQL would be on the surpassing all other on appropriate databases’ list.

We have demonstrated that we have the skills to use these technologies through the implementation of a technology competency demonstrator.

# 8. Inception Phase Project Status Assessment

## 1. Assessment against Objectives of the Inception Phase

### 1.1 Do we know what we are trying to achieve?

The aim of the project is to create an eLearning website named as e-AskMe with a lot of functionality and features to make it easy for readers to access and learn. eLearning website will be more useful nowadays as compared to reading books as it can be accessible from anywhere and anytime.

We understand the main functional requirements of the project which are:

**Use Cases**

Following are some of the use cases of the system.

**Student Use Case**

A picture containing graphical user interface

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Figure 1 Student Use Case

**Teacher Use Case**

Diagram

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Figure 2 Teacher Use Case

**System Administrator Use Case**

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Figure 3 System Administrator Use Case

We also understand the main Non-Functional requirements of the project which are:

1. Performance
2. Scalability
3. Localisation (does eLearning system goes well with local specifics?)
4. Security
5. Useability
6. Maintainability
7. Availability
8. Reliability

### 1.2 Do we know how we are going to achieve it?

We have a good idea of how we are going to achieve our aims. We are going to use “a proposed architecture, which is based on popular three-tier or 3-tier architecture.

* At the very bottom layer, the data related services will be hosted.
* The second layer is the business logic layer where all the control will be done on the data using a programming language.
* The very top layer is the presentation layer. On this layer, there shall be interfaces which the users will utilize to control the application.

Following is the detailed explanation of the proposed architecture from bottom to the top.

Table

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Figure 4 Proposed Architectural Design of E-Learning Platform

We have a good understanding of the project specific risks facing our project and how we are going to deal with them. The risks are:

1. Unwanted delays due to unavailability of human resources.
2. Disagreements over choice of technology
3. Unavailability of computational resources
4. Expected code not working properly or not yielding correct results
5. Dependencies have been changed
6. Cost risk
7. Performance risk

We have a good understanding of how we are going to check that our application delivers the intended functionality and system properties. Our key areas of concern and the test strategies we will use to address these concerns are as follows:

**Areas of concern**

* Performance
* Scalability
* Portability
* Compatibility
* Reliability
* Security
* Useability

**Test strategies**

* To address Performance Concern, how much will performance change with higher workloads will be used. Stress testing, response time and load testing will even be used.
* How fast does the e-learning system return results will address the Scalability Concern?
* Portability Concern will be addressed by “Which browsers, operating systems, and their versions and hardware do the software run on?”
* Does e-learning system conflicts with other processes and applications within these environments will address the compatibility concern.
* Reliability will be tested via no. of failures
* Security will be tested via number of errors and time to fix failures
* Usability will be tested via satisfaction level.

We even have a good understanding of the dependencies and likely completion times for different parts of the project. Target completion dates for key aspects of the project are as follows:

|  |  |
| --- | --- |
|  | **Target completion dates** |
| Architecture |  |
| Functionality |  |
| Testing |  |
| Documentation |  |