Tribe - C

LEAP 4.0 Business Requirement Document Week-1

1. Project Overview

API i.e. Application Programming Interface is used by computers to interact with each other; which will be the core base of the project.

The following BRD aims to convey the approach we can opt to achieve the desired product. We have aimed to bring forward the intensive research regarding API. We have calculated the risks and kept in mind the benefits of using API.

2. Introduction

APIs is a technique where two software or application communicates with each other by following some protocol, so it is called an Application programming interface (API). Here, in this technique one software collect information and data from other software, so one software get the license to use the facility of other software. And due to this technical method, programmer can make use of various API tools to make its program easier and simpler. Also, developer uses API tool in his software to add various features without writing the complex codes. We can create an API for an operating system, database systems, and hardware system, for a JavaScript file or similar object oriented files.

APIs are almost everywhere you just have to open your Smartphone to see them, Whether it's searching for the weather on Google, logging-in with Facebook, paying with PayPal, or interacting with a Twitter bot, all of these things are powered by APIs.

HOW API USED

An API creates a link between two programs or applications, where both are reporting with each other by supplying them with necessary tools and functions. It takes the request from the user and sends it to the service provider and then again sends the result generated from the service provider to the desired user.

REAL LIFE EXAMPLE

i) Weather reports: Google uses APIs to display relevant weather data from users search quires.
ii) Login with Standardized platform: Some website allow as seeing their features by login with Facebook, Google, Twitter, LinkedIn.
iii) Payment Features: User gets the different option to pay, where they have Payment account.
iv) Travel Booking: There are so many APIs at work within the travel and booking industry.

3. Project Scope

a) Project needs.
- Identify the project needs.
  - ✓ Based on theme of the project.
- Necessity for goals and objective.
  - ✓ What and why of this project will lead us to set specific goals and objective
- Setting of groundwork.
  - ✓ Tasks to follow
  - ✓ Task performance

b) Objectives and Goals
- Confirm the objectives and goals
- Parameters
  - ✓ Specific
  - ✓ Measurable
  - ✓ Achievable
  - ✓ Realistic
  - ✓ Time Frame

c) Deliverables
- Types of end-users
  - ✓ Customers/clients/stakeholders
  - ✓ Internal team
- Expectations and acceptance
  - ✓ Testing team will review and approve the final version before releasing.
- Satisfactory outcome
  - ✓ 100% working prototype leading to the expectations of

d) Inclusions and Exclusions/out of scope
- Design iterations

- User testing
- List of what will and will not be included in the project.

e) Constraints
   - Identify the constraints
     - ✓ Communication delay
     - ✓ Changes in scope
     - ✓ Technical difficulties
   - Awareness of limitations
   - Ultimate and alternate solutions

f) Necessary changes
   - Clients and stakeholders' add-ons
   - Additional required features

4. Functional Requirements & Non-Functional Requirements

Any Requirement Which Specifies What the System Should Do is known as Functional requirements.

Any Requirement That Specifies How the System Performs a Certain Function is known as Non-functional requirements.

What are API requirements?

API requirements include Functional and non-functional requirements.

- Understand and clearly articulate the detailed requirements for the API.
- Make sure there is agreement between key players before development starts.
- Separate functional from non-functional requirements and develop only to the functional requirements.
- Iterate through the API development process.
- Utilize an API platform.

Functional requirements define what the API does and how the API will be used.

The way in which the API will be used affects several issues such as the technology choices, regulatory issues, and security. For example, an API that's being used to perform financial transactions will have more constraints than one delivering advertisements.

Some examples of how APIs will be used include the following functional requirements:

- Within a mobile application.

- Delivery of banner ads on a webpage.
- Servicing financial transactions.
- Providing a self-serve portal.
- Enabling the connection of a new business to the existing enterprise.

Non-Functional requirements define Availability, scalability, logging, security, and performance is all critical to the successful use of an API.

Here are some examples of nonfunctional API requirements.

- Performance
- Reliability
- Scalability
- Security
- Usability

It's important to address nonfunctional compatibility for APIs. For example, if a particular security mechanism was applied to an API, but other consumers required a different security mechanism, that API is not reusable. This is true for any non-functional capability, including logging and failover.

But functional and nonfunctional aren't the only requirements for APIs. There are also implementation requirements — which are typically heavy on security.

Examples of API Implementation Requirements

There are lots of examples of API implementation requirements, but let’s just take a look at a couple of security specifics for SOAP and REST.

The implementation specific requirements are the way in which you meet functional or nonfunctional requirements for a particular API implementation. There is a big difference between an API and an API implementation. In fact a single API could have lots of implementations.

5. Business Driver

Responsibility - How to expend business in the market.

The first purpose of the business manager is to decide -

1. What to produce
2. How to produce
3. What technology is using in this business
4. for whom to produce.

There are basically four factors for expanding any business in the market.

1. Customer satisfaction
2. Demand and supply
3. Price and profit
4. Technique to improve business in the market.

Customer satisfaction-

It is the most important factor for expanding any business in the market.

Cost and Revenue –

Four important factors while dealing with cost and profit of the service are-

1. Fixed cost- non changeable in short term.
2. Variable cost – can change even in short term
3. Marginal cost of service- per unit cost
4. Average cost of the product and service- overall cost.

Demand and supply –

It is basically based on market condition you have to be rational while deciding price of the product, and are you capable to meet with the demand of your customer.

Technique to improve business in the market

Some factor for improving business in the market is

1. Value in the market.
2. Market technique.
3. Target audience.

Business Driver AWS Cloud

In present time, the customers are switching on the clouds for the agility to gain. The AWS cloud provides the 200 services including everything from compute, storage and database, to

continuous integration, data analytics & artificial intelligence. You are able to move from idea to implementation in minutes. Now a days, with over a million active customers and a global presence and AWS helps the organizations of all sizes to migrate workloads to the cloud those enterprises such as GE, the Coca-Cola Company, BP, Enel, and so on.

Common drivers that apply when migrating to the cloud are:

a) Cost Savings
   - Operational costs are the costs of running your infrastructure.
   - Realized a 52% reduction in TCO.
   - Avoided acquiring additional data centre space, saving an estimated $1M+ over three years.

b) Staff Productivity
   - Workforce productivity is how efficient you are able to get your services to market.
   - We see workforce productivity improvements 30%-50% following a large migration.

c) Operational Resilience
   - Operational resilience is reducing your organization's risk profile and the cost of risk migration.
   - After migrating to AWS, our customers have seen improvements in application performance, better security, and reduction in high-severity incidents. For example, GE Oil & Gas saw a 98% reduction in P1/P0 incidents with improved application performance.

d) Business Agility
   - Business agility is the ability to react quickly to changing market conditions. Migrating to the AWS Cloud helps increase your overall operational agility.
   - You can expand into new markets, take products to market quickly, and acquire assets that offer a competitive advantage.
   - You also have the flexibility to speed up divestiture or acquisition of lines of business. Operational speed, standardization, and flexibility develop when you use DevOps models, automation, monitoring, and auto-recovery or high-availability capabilities.

6. Benefits and Costs

- Automation: With the use of API , we make quicker and more productive project.
- Application: use of API application we provide more flexible delivery of service.

- Adaptation: API needs change over time and API help anticipate changes.
- Personalization: With the use of API any user or company can customize the content and service.
- Improves marketing: APIs enable enterprises to supercharge their marketing efforts. They allow them to expand and reach new market.
- Enhances customer experience: By adapting APIs' capabilities, enterprises can create new and effective ways of interacting with customers, especially in the current digital age when consumers demand top-notch experiences.
- Improves connectivity and collaboration: APIs can improve collaboration and internal communication within an enterprise. APIs' core functionality is connectivity—they enable different systems, applications, and platforms to connect and share data with one another and perform varied types of functions.
- Saves costs: One of the greatest benefits of APIs for businesses is the ability to save costs. APIs significantly reduce the development effort, using them to create applications is a great way of reducing costs. The costs of building an application differ depending on several factors, including the project's complexity, the type of technology used, and developers' expertise.

7. Schedule and Timeline

As per the schedule provided, we intend to come up with the working prototype by the end of 6 weeks.

The following timeline will be followed by us to be on top of the project and get it delivered by 31 July 2021.