MERN Project : Car Rental Service Application

Lecture 1: Introduction to the Project

Agenda

01

Understand All the Phases of Full Stack Development

02

Understand How to Create hlds and llds

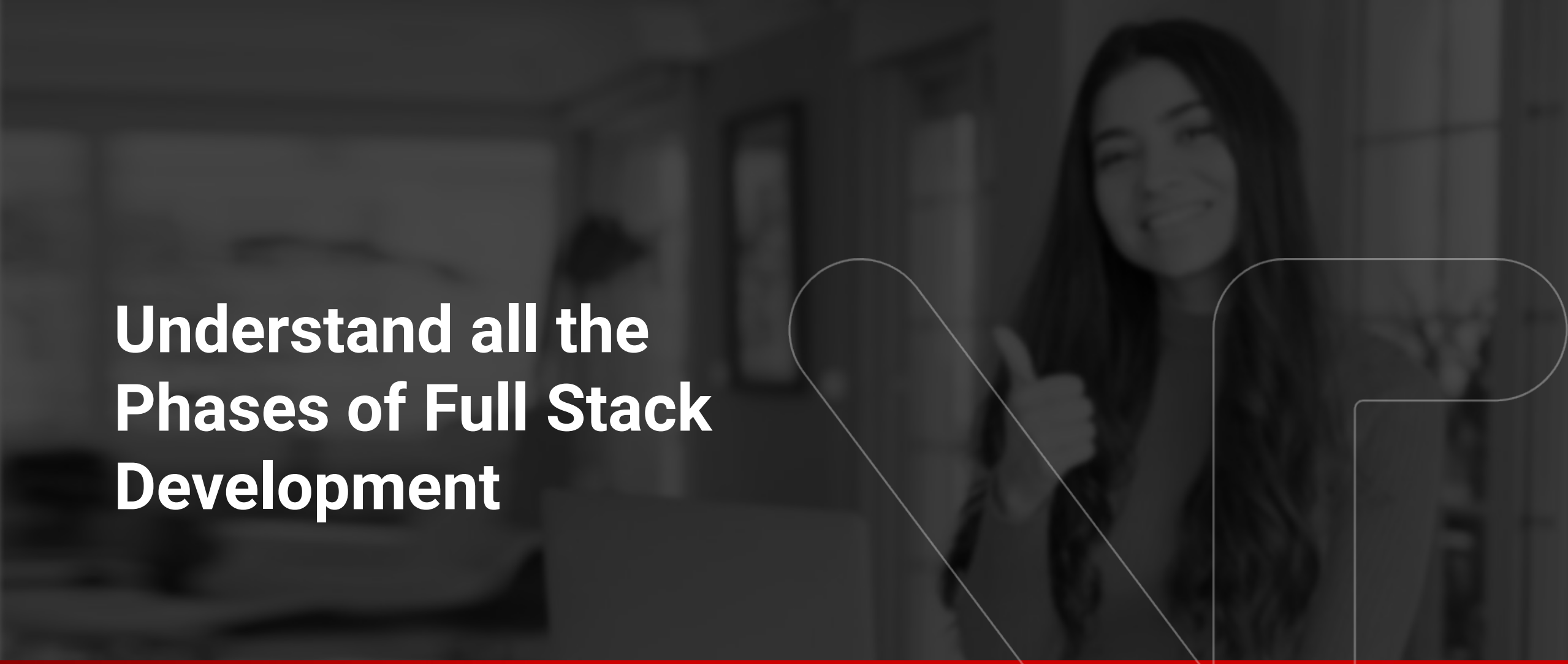
03

Work with Teams and Understand Collaboration Through GIT

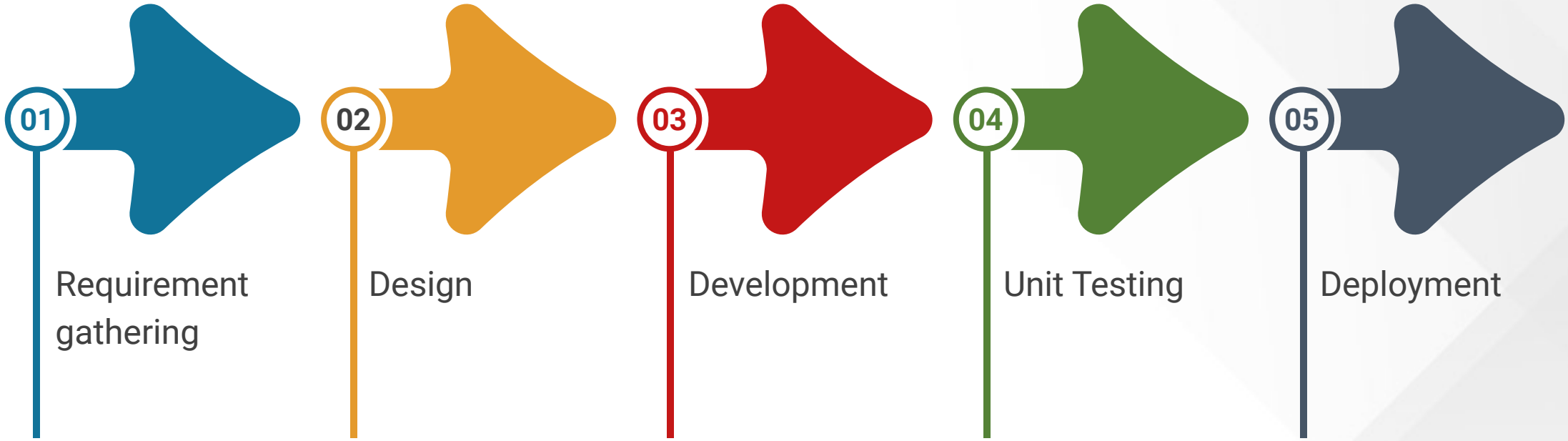
04

Create and Deploy a Complete Full Stack Application

Understand all the Phases of Full Stack Development

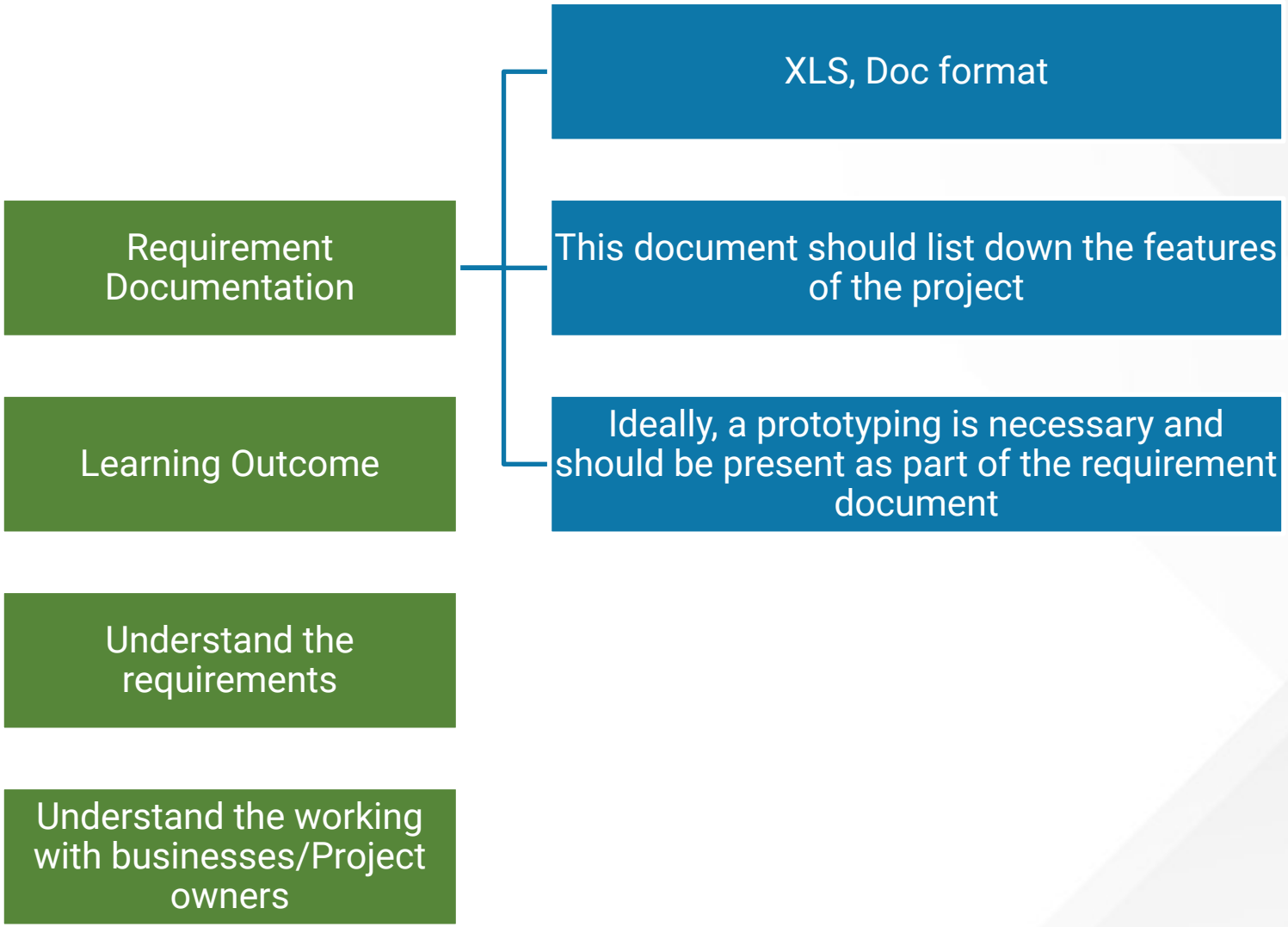


Phases of Full Stack Development



Requirement Gathering

Deliverables:



Requirement Gathering

SRS Document: Software Requirement Specification

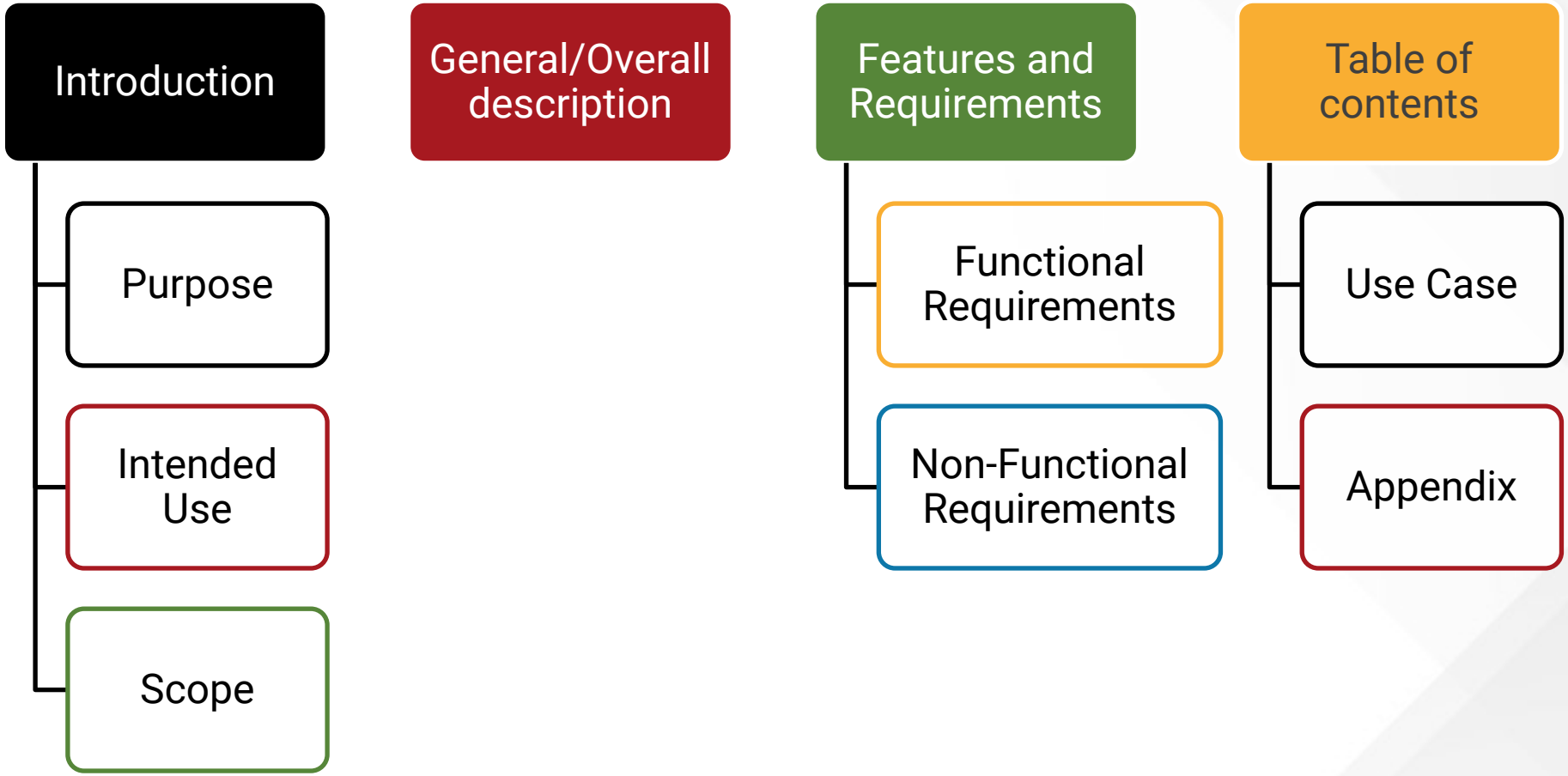
A software requirement specification document contains information regarding the functionality of the application.

It describes what tasks/operations the application will perform.

It contains functional as well as non functional requirements along with use case model.

Requirement Gathering

Software Requirement Specification: Table of contents



Design

This is the most important phase of the development lifecycle.

Deliverables:

- High level Design Document
- Low level Design Document
- User flow Diagram
- Database Design
- System Design
- Test Plans

Learning Outcome:

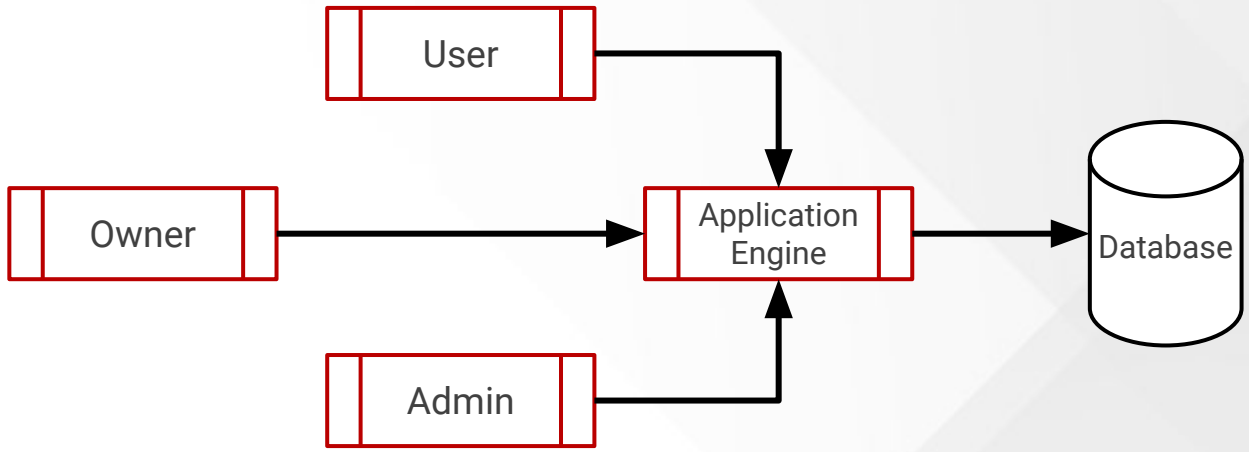
- Understand design process
- Implement problem solving approaches
- Implement Data structure and algorithms
- Understand database designs and the decision-making process in database designs

Design

System Design

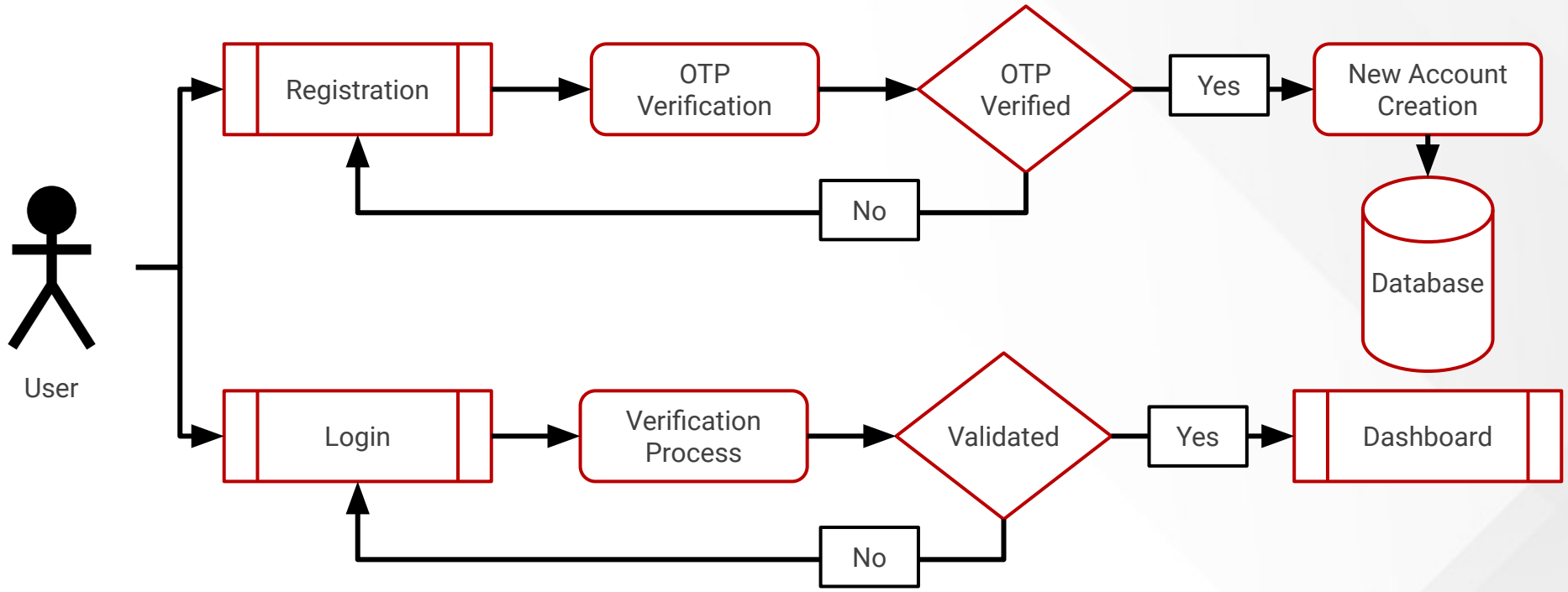
Note: The diagram shown in the image is just for the reference and is not a complete diagram of the application.

Draw.io is used for creating this diagram



Design

User flow Diagram



Note: The diagram shown in the image is just for the reference and is not a complete diagram of the application.

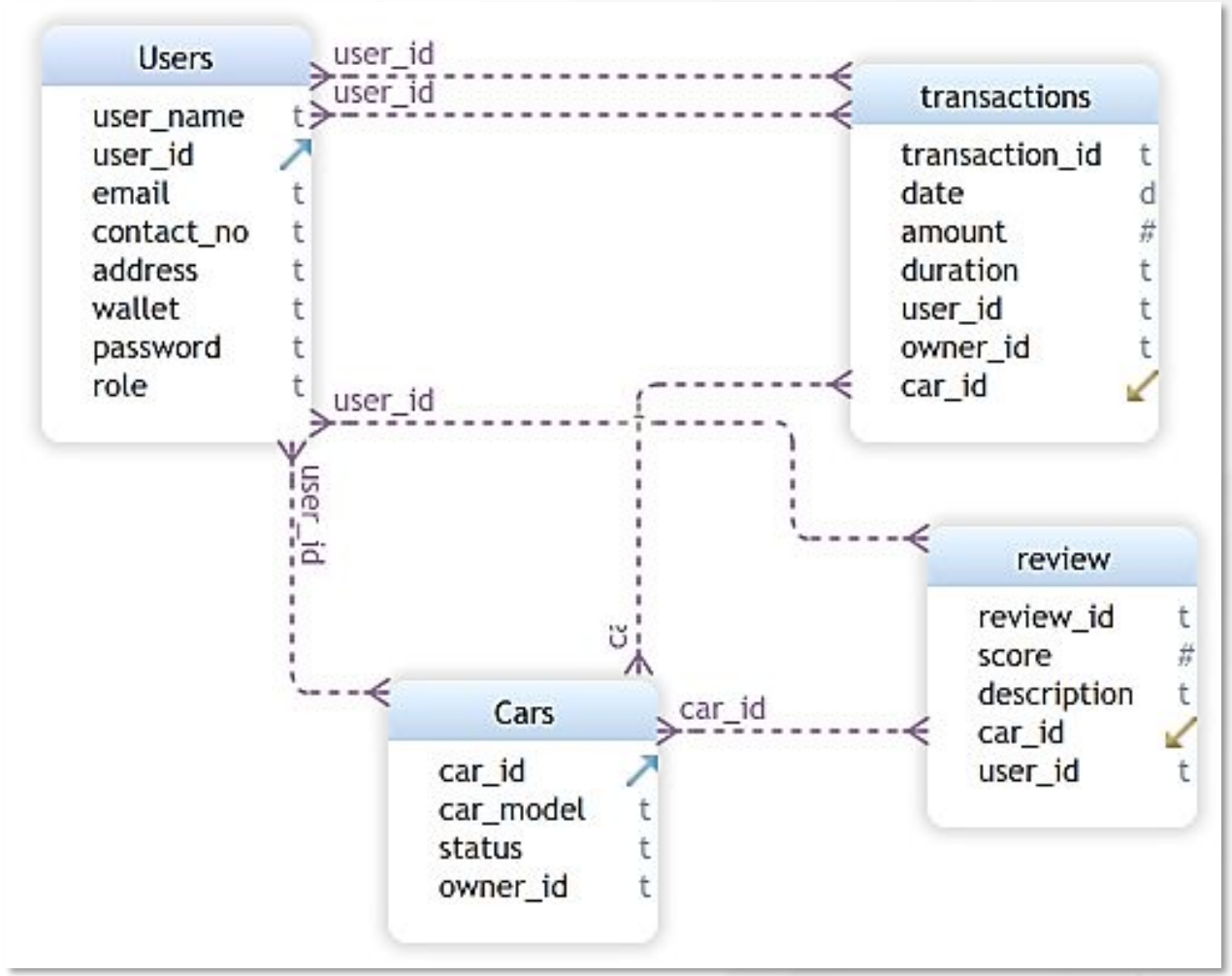
Draw.io is used for creating this diagram

Design

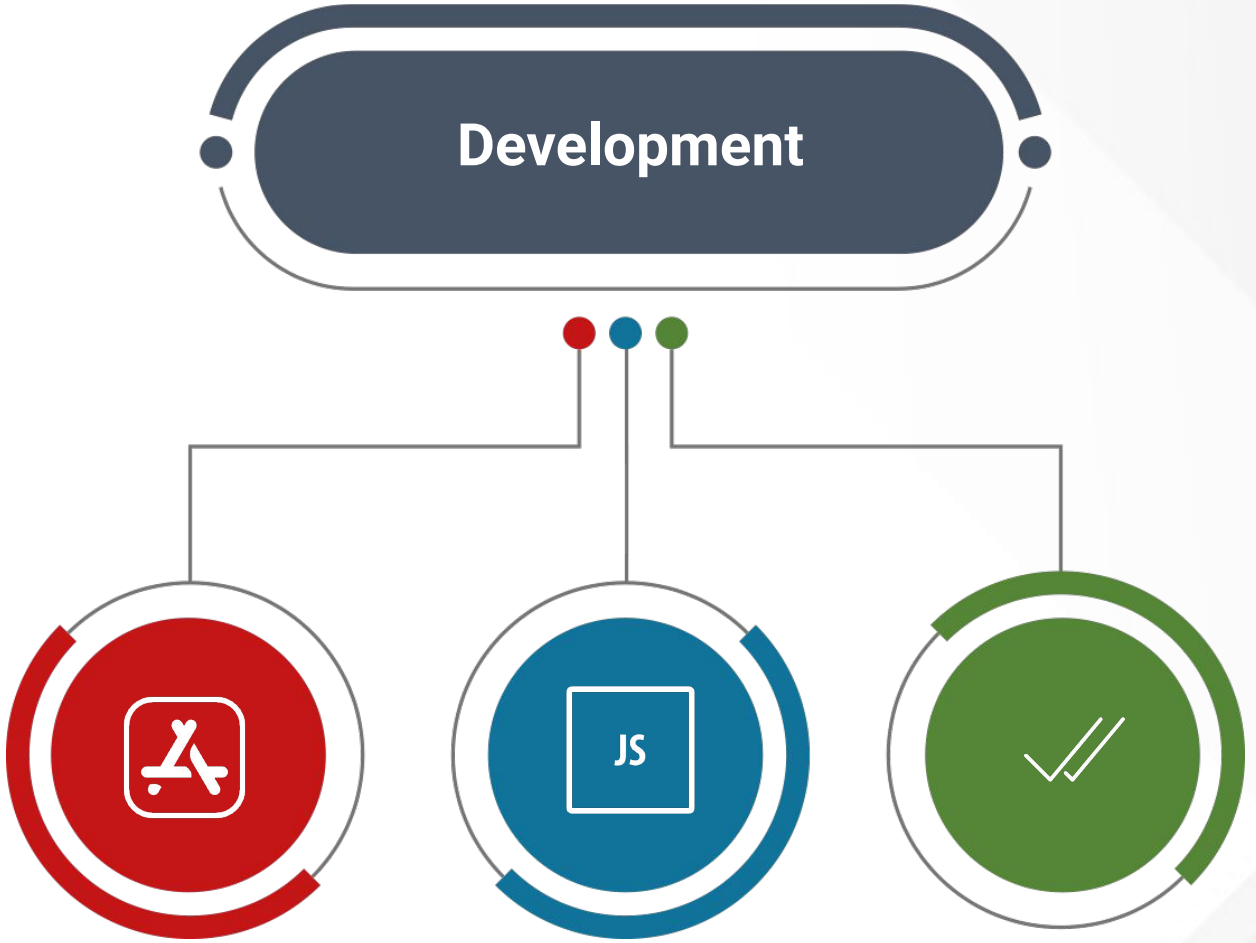
Database Design

Note: The diagram shown in the image is just for the reference and is not a complete diagram of the application.

Draw.io is used for creating this diagram



Development



Build React app

Implement component designs with MVC architecture

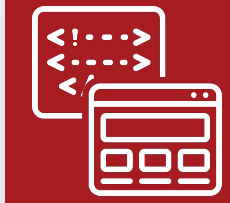
With Node .JS back end

Development

Technology used:

Front End:

- HTML
- CSS
- JS
- React



Back End:

- Node
- Express
- Mongoose

Database:

- MongoDB

Development

HTML

Commonly used tags such as <form>, , <p> etc

CSS

Commonly used CSS properties such as ‘color’, ‘background-color’, ‘position’, ‘display’ etc

JS

- Fetch API
- DOM manipulation
- Asynchronous javascript

Development

React

- Components
- Hooks
- State manipulation
- Component lifecycle methods

JS

Node

- Express framework
- middlewares
- Body-parser
- http module
- mongoose

Hero

Testing

Test Plan

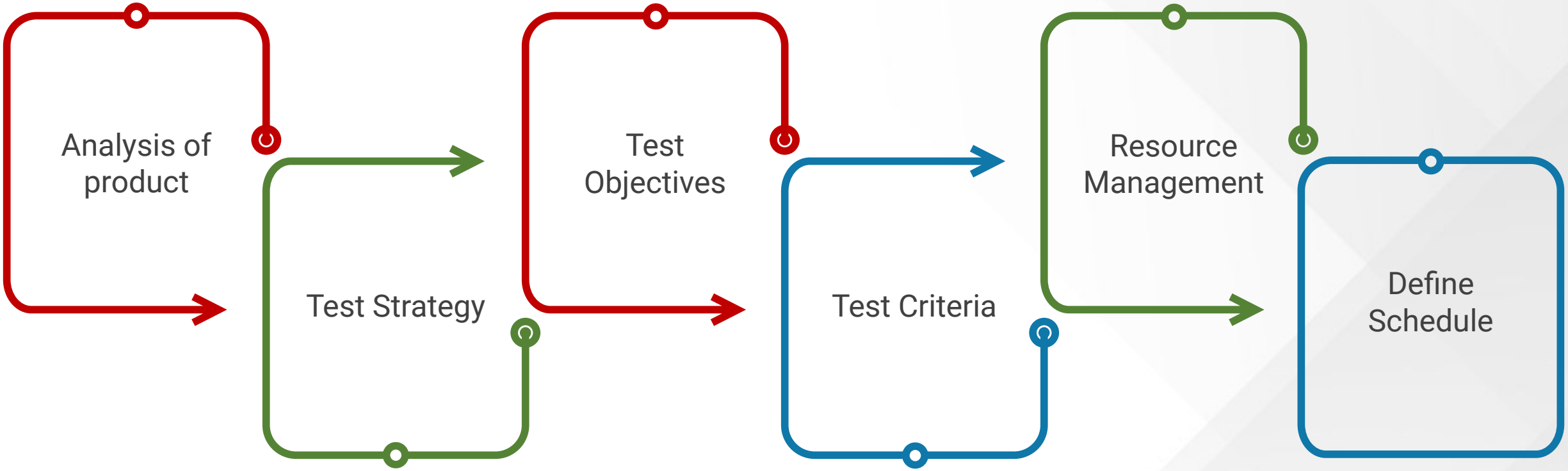
- Testing is an essential part of every development process

- Test plan is a document that contains
  - Test strategy
  - Schedule
  - Test objectives
  - Deadlines

Testing

Creating test plan document

During the creation of test plan, following elements should be defined:



Testing

Manual Testing

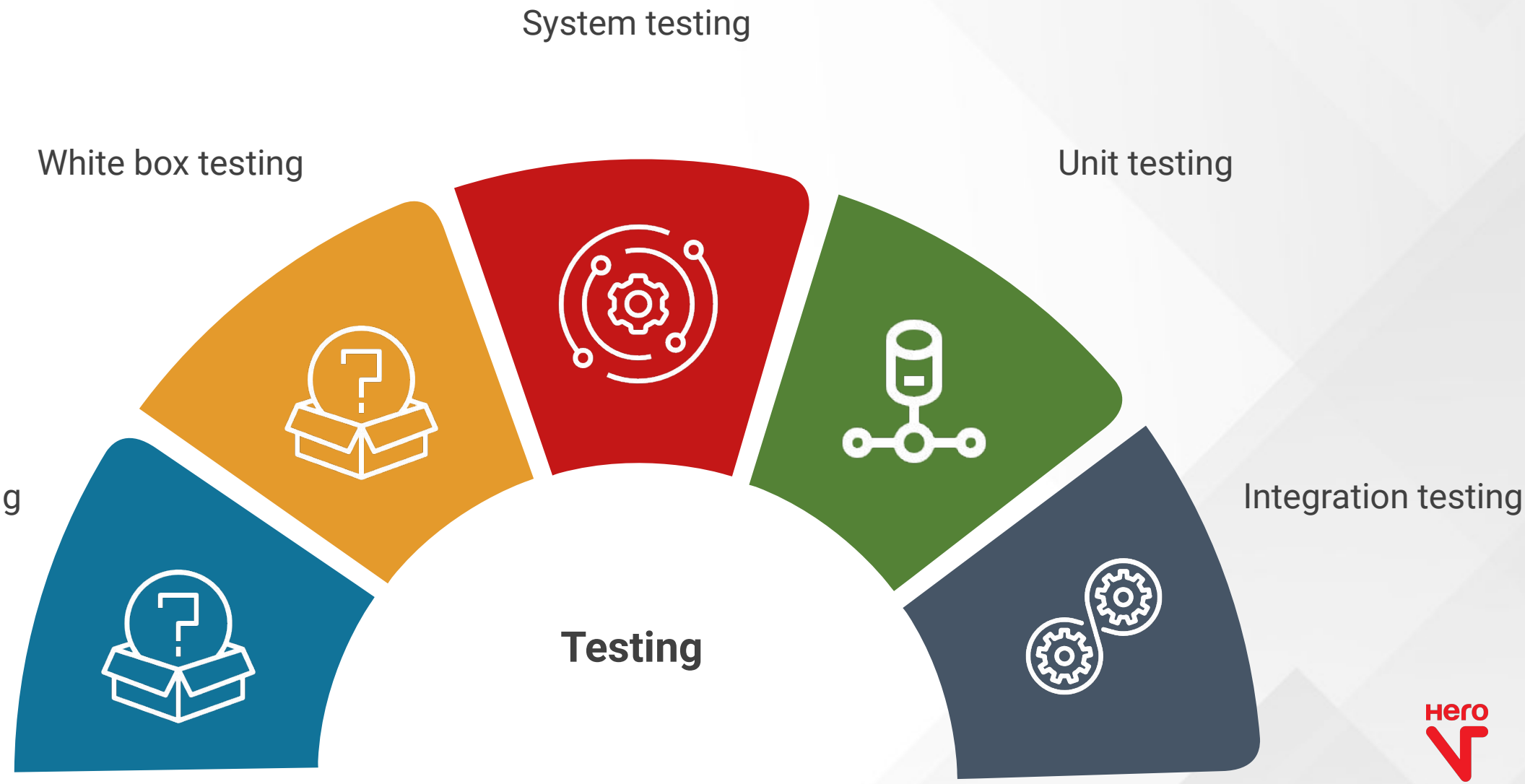
- Test cases are developed by the developer
- Automation tools are not used

Goals

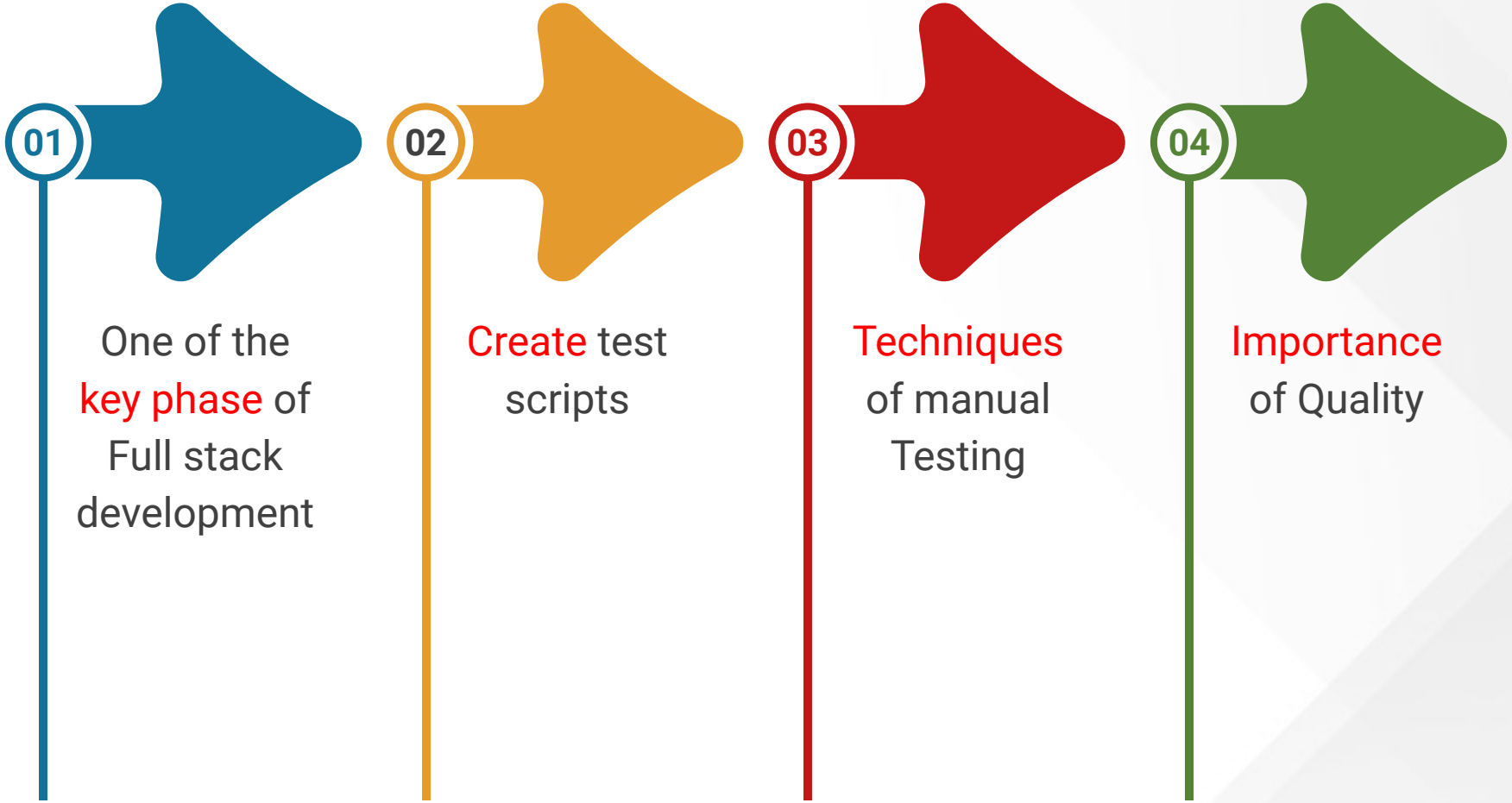
- Find existing bugs
- Ensure application is error free
- Application meets the specified requirements

Testing

Manual Testing Types

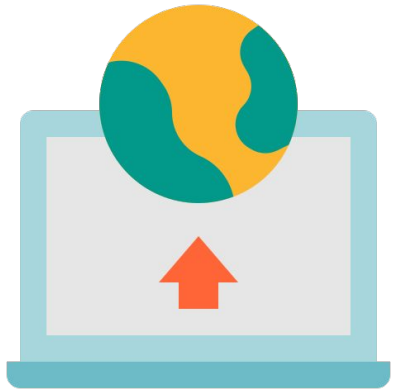


UNIT Testing



Deployment

- Deployment is necessary in cloud.
- We will deploy in local for now as part of this project.



Thank You!

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