

## MERN Stack Technologies



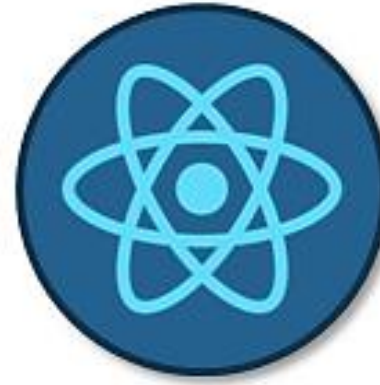
**M**

MongoDB



**E**

Express JS



**R**

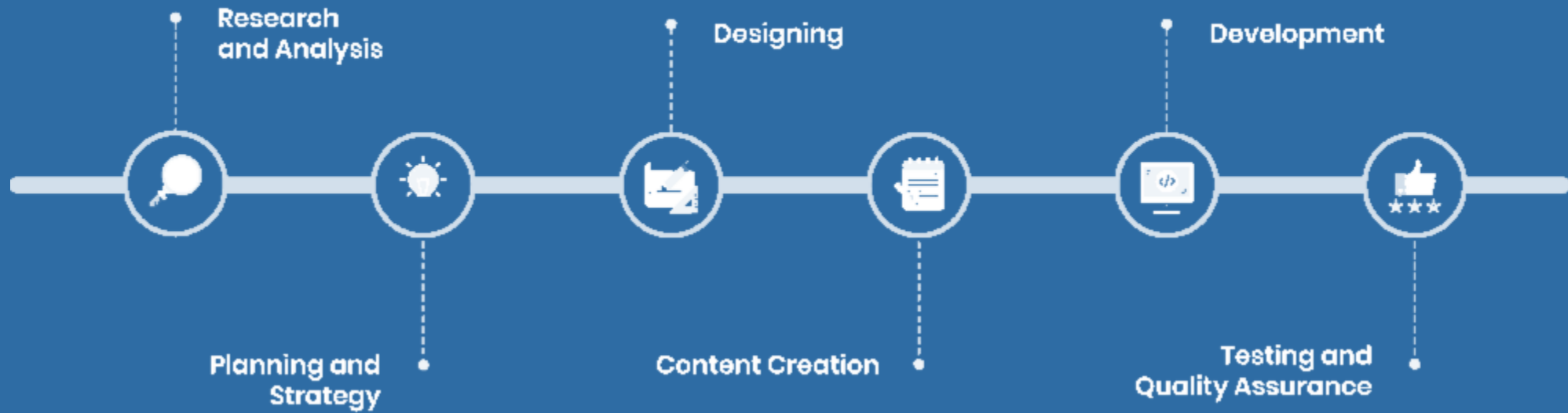
React JS



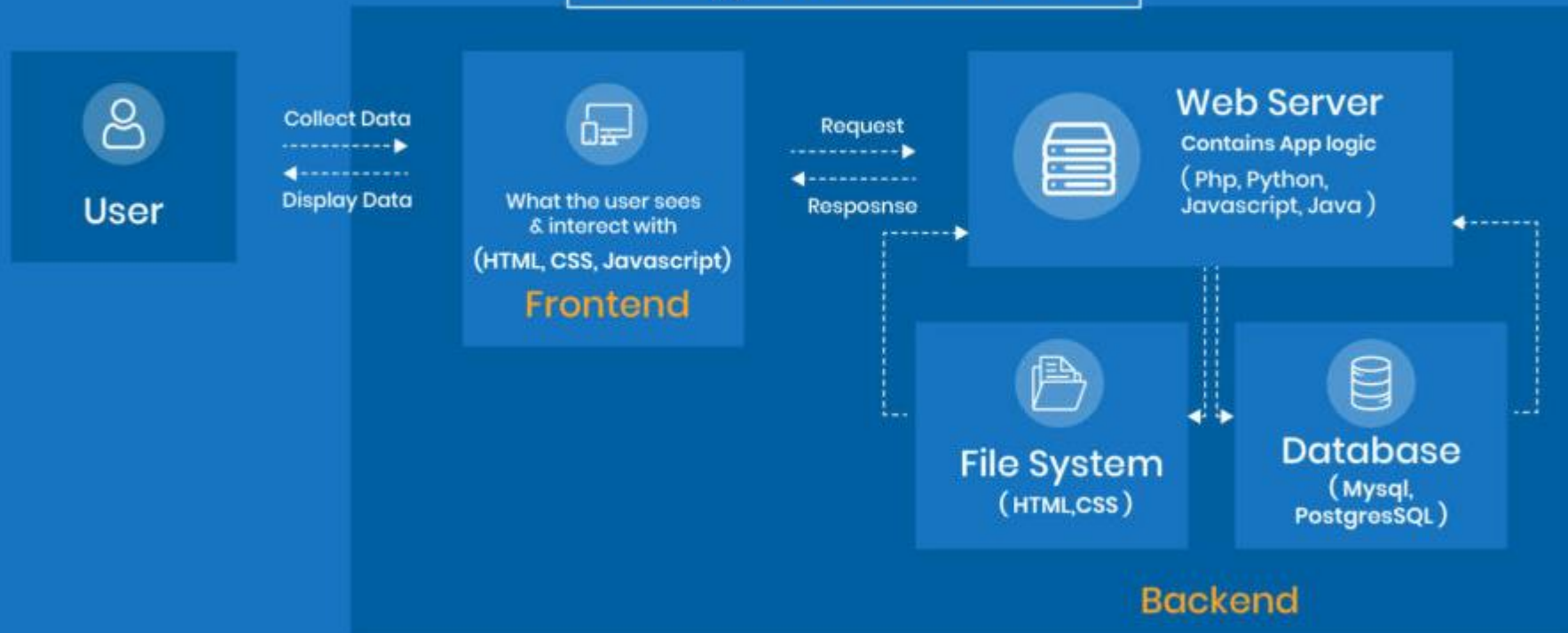
**N**

Node JS

# Web Development Life Cycle



## Web Application Architecture





## Front-end Frameworks

The frontend is the part of the website visible to the users.

Also known as client-side frameworks

Involves UI-UX designing, SEO optimization, performance and scalability enhancing, creating reusable templates

Frontend Languages – HTML, CSS, JavaScript, JQuery

Frontend Frameworks- React, Vue, BootStrap, Ember, Angular

Front end frameworks provide pre-written code snippets, reusable templates, integrable elements and manage user interaction

## Back-end Frameworks

Backend refers to the background functioning of the sites.

Also known as Server side frameworks

Involves database management, security, URL routing, designing site architecture, the server handling

Backend Languages – Python, JavaScript, PHP, Ruby, .NET

Backend frameworks- Django, Ruby On Rails, Express, Spring, ASP.NET Core

Database manipulation, user authorization, privacy encryptions, reusable components are some benefits of using backend frameworks

# WEB DEVELOPMENT STACKS



## Front-End



HTML CSS JavaScript



## Back-End



PHP NodeJS Java



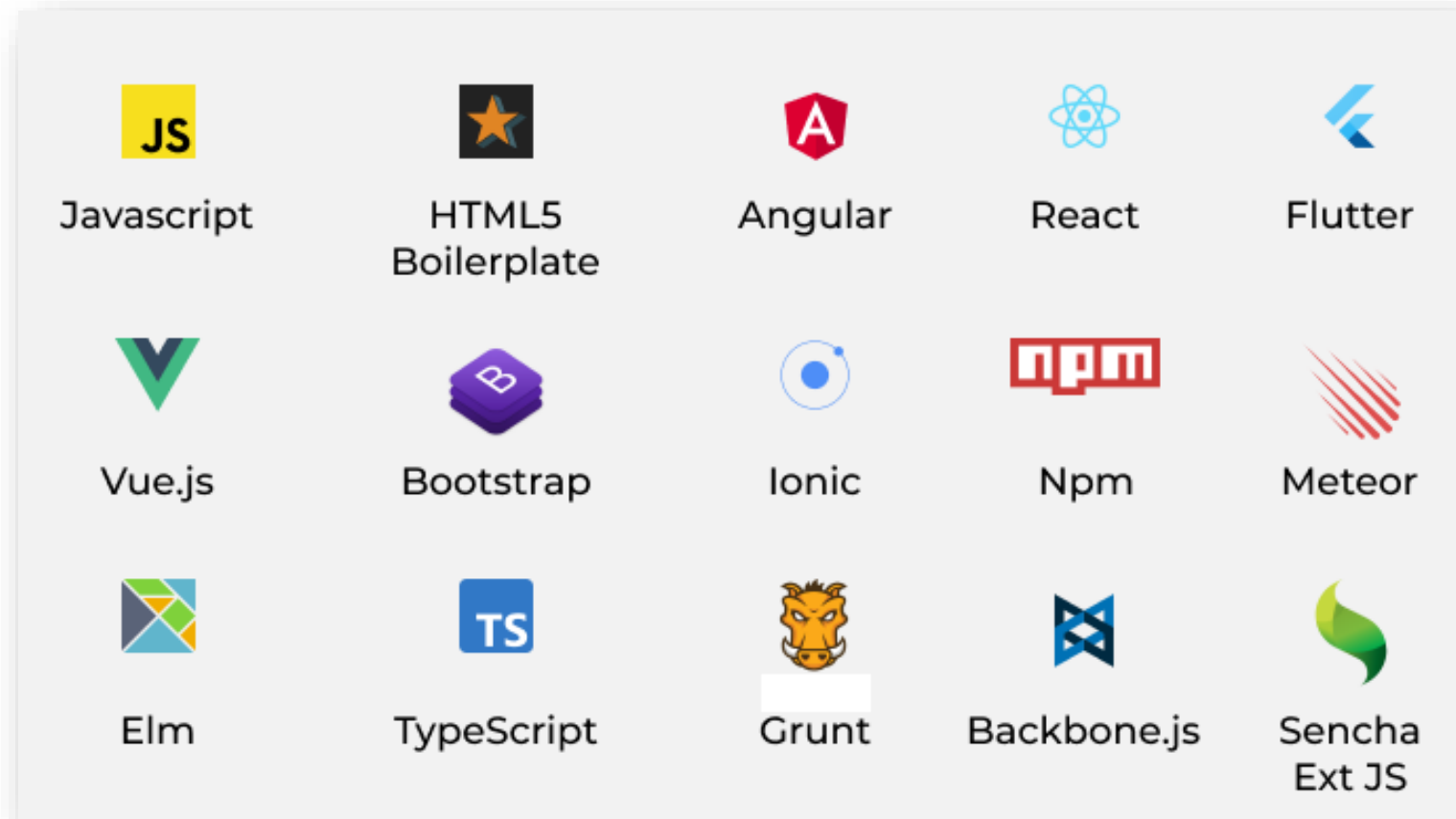
## Full-Stack



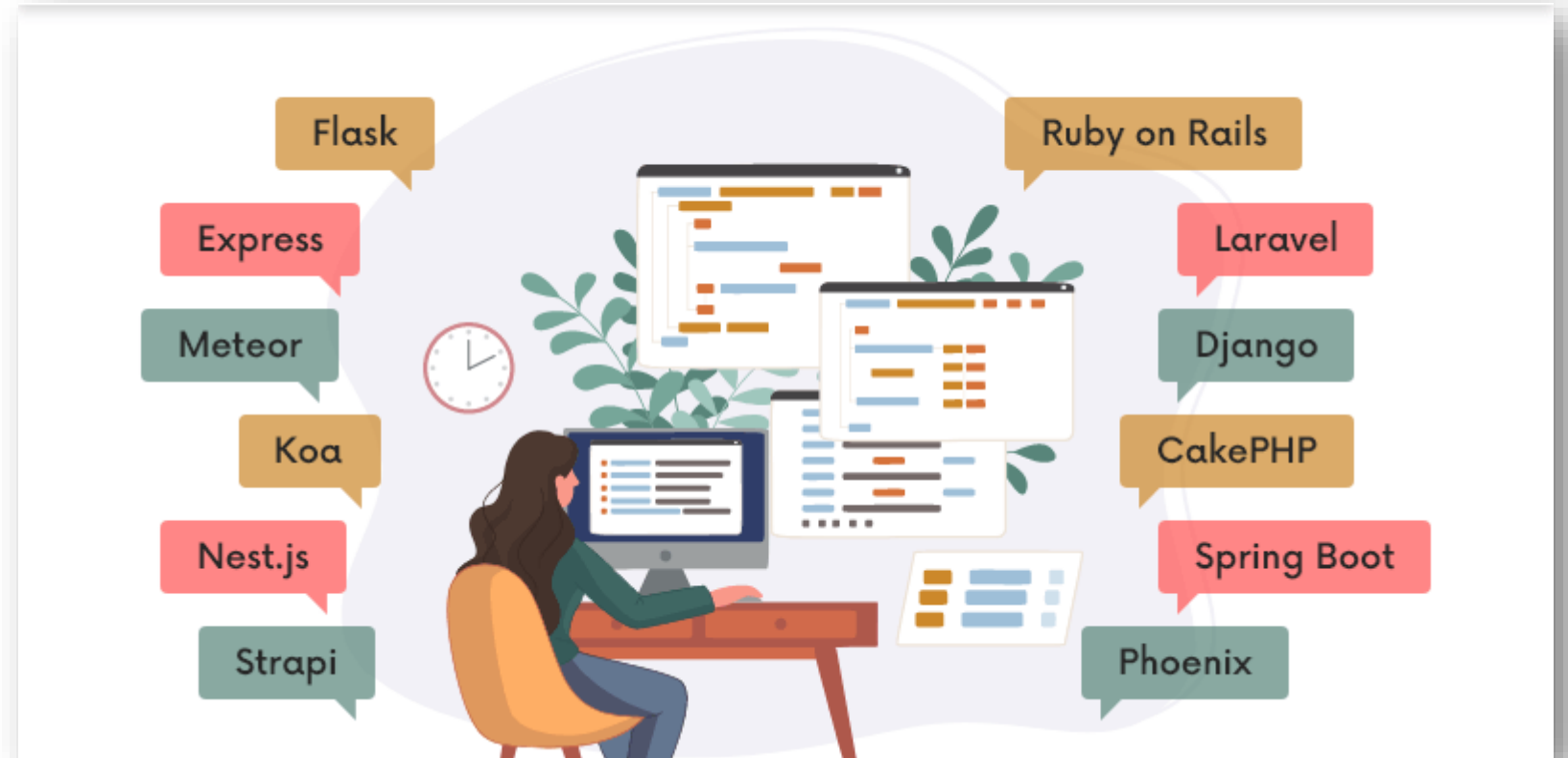
Flutter Serverless LAMP



# Popular Front-End Technologies in 2022



# Popular Back-End Technologies in 2022



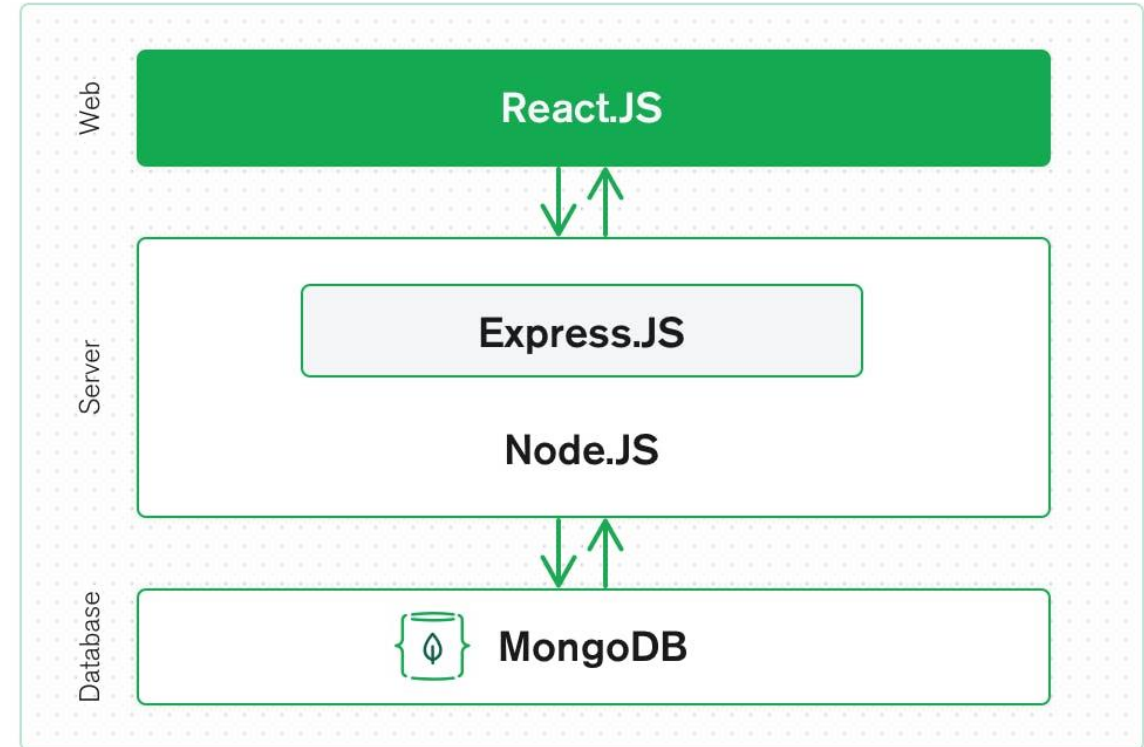
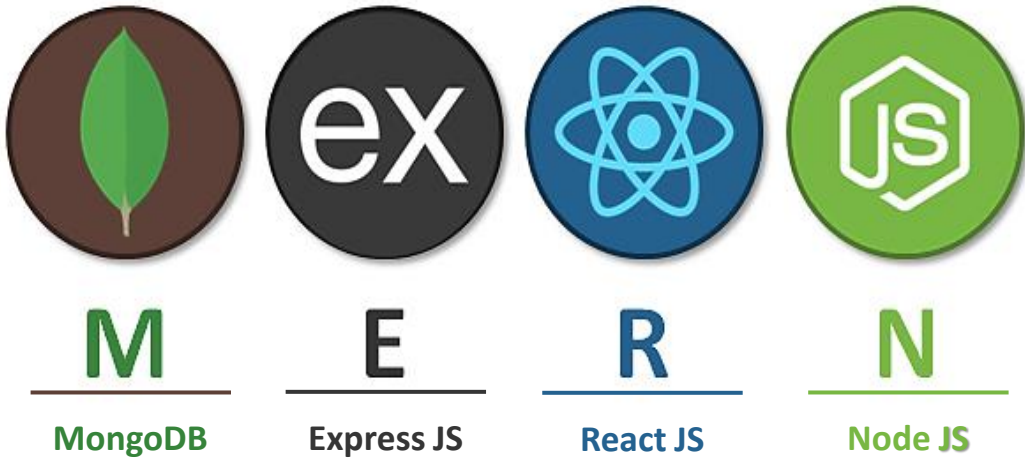


# Full-stack Technology Stacks

LAMP	WAMP	JAM	MEAN	MERN	MEVN	SERVER LESS	Flutter
Linux Apache MySQL PHP/Python	Window Apache MySQL PHP/Python	Java Script API Markup	MangoDb ExpressJs AngularJs Node Js	MangoDb ExpressJs ReactJs Node Js	MangoDb ExpressJs Vue.Js Node.Js	Dev-Ops Using Google Cloud AWS Azure	Flutter Dart Platform



# MERN Stack Technologies





# MERN Stack Advantages

- Cost-effective
- SEO (Search Engine Optimization) friendly
- Better performance
- Improves Security
- Provide the fastest delivery
- Provides faster Modifications
- Open Source
- Easy to switch between client and server



# mongoDB®

- **Mongo DB** is the most popular NoSQL (NoSQL or Non-Structured Query Language), open-source document-oriented database.
- The term 'NoSQL' typically means a non-relational database that does not require a fixed schema or proper relational tables to store the necessary data in it.
- MongoDB stores the data in a different format other than the relational tables.
- The storage format in which the data is stored is known as BSON, which stands for Binary JavaScript Object Notation.
- Its binary structure encodes length and type of information, which allows it to be parsed much more quickly.

## Advantages

- **Schema-less Database:** one collection can hold different types of documents in it.
- **Indexing:** every data item has provided a particular index, categorized as primary and secondary indices.
- **Document Oriented:** In these documents, the informative data is stored in fields, i.e., **key-value** pairs instead of columns and rows
- **Faster:** Each data item has its index value, making it easier.
- **Scalability:** sharding means distributing data on multiple servers, **data chunks** are evenly distributed across shards that reside across many physical servers.
- **High Performance:** MongoDB has very high performance and has data persistency.
- **Replication and Highly Available**
- **Simple Environment Setup**

# Express JS

- Express is a JavaScript server-side framework
- It is one of the best backend development JavaScript Frameworks.
- It provides the developer with a platform to create and maintain robust servers.
- Express is used to provide server-side logic for mobile and web applications, and as such, it is used all over the place.
- It allows developers to spin up robust APIs (**Application Programming Interface**) and web servers much easier and simpler.
- Express makes robust web servers easier to organize your application's functionality with routing and middleware.
- It also adds helpful functionalities to Node.js HTTP (**HyperText Transfer Protocol**) objects.
- Express makes Node.js web and mobile application development much easier and faster.
- Express is very easy to connect with Databases like MongoDB.



- React is one of the most popular open-source front-end JavaScript libraries used for building Web applications.
- It is just a JavaScript library developed by Facebook to solve problems we could not solve earlier using other libraries while building web and mobile applications.
- It allows us to create reusable UI ( User Interface ) components.
- It allows developers to create large web applications that can easily change the data of the page even without reloading the page.
- React was first deployed in the Facebook news feed.



- js is an open-source server environment, and it is a cross-platform runtime environment for executing JavaScript code outside a browser.
- js is not a programming language, and even it is not a framework.
- It is often used for building and developing numerous backend services like net applications, mobile applications.
- Massive corporations principally utilize it in production like **Uber, PayPal, Netflix.**
- For a smooth development of any web application or mobile app, it supports MVC (**Model View Controller**) architecture; the main purpose of this architecture is to separate the presentation details with the business logic.