

# Unlocking Power With Google **Firebase**

*Build better apps, faster*

*Sravanthi Gorantla*  
*Vamsi Ayiluri*



- What is Firebase?
- Introduction
- History
- Traditional App Development
- Firebase App Development
- Products
- Benefits



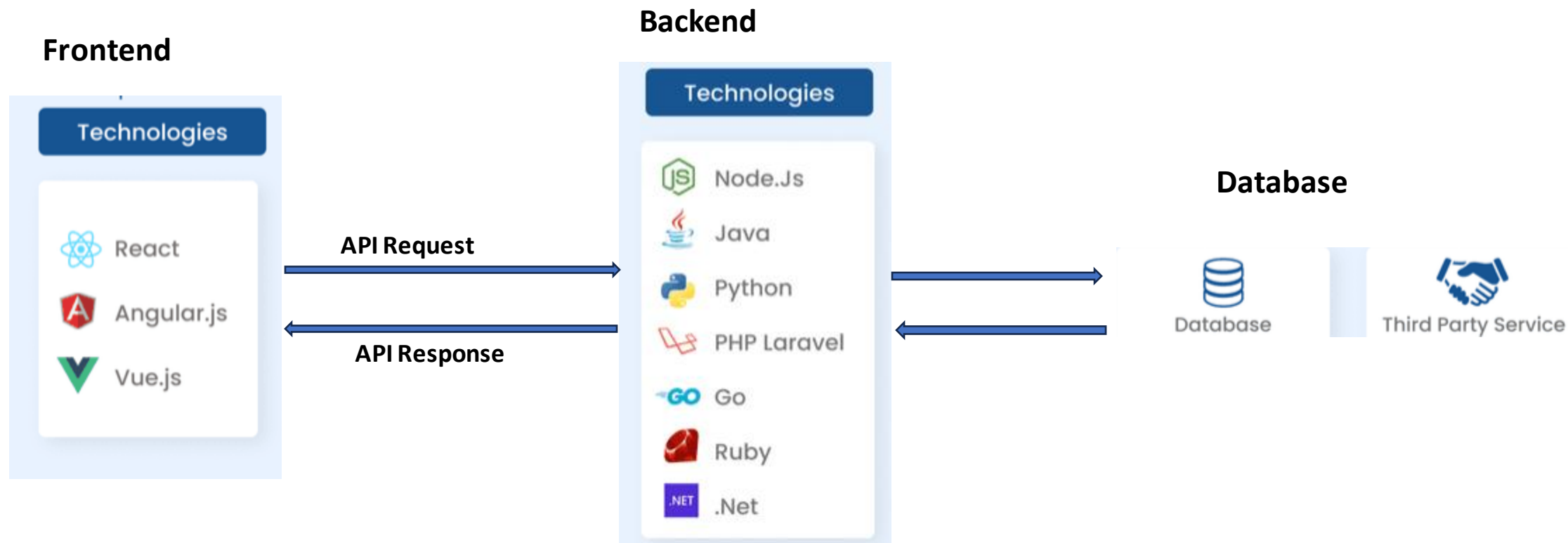
- Firebase is a unified app development platform that encompasses various tools and services necessary for building high-quality apps efficiently.
- Its key components cover every aspect of app development, from backend infrastructure to frontend user experiences.
- With Firebase, developers can focus more on creating innovative features and less on managing infrastructure.

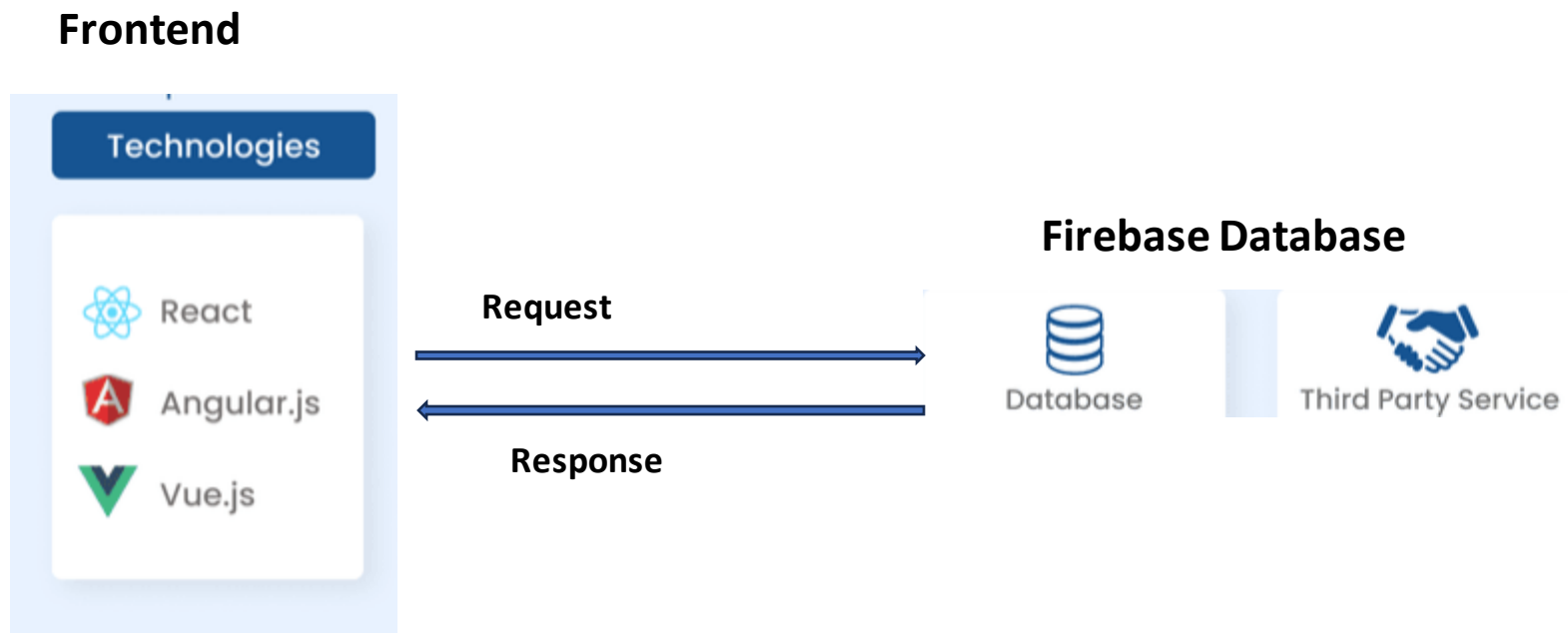


- Firebase is a comprehensive platform for app development, offering a suite of tools and services to streamline the process.
- It's backed by Google, ensuring reliability, scalability, and seamless integration with other Google services.
- Services to android, iOS, web.
- Cloud storage.
- Uses NoSQL.















- Firebase evolved from Envolve, a prior startup founded by **James Tamplin** and **Andrew Lee** in 2011.
- Envolve provided developers an API that enables the integration of online chat functionality into their websites.














## BUILD

- |  |  |  |
|--|--|--|
|  App Check      |  Genkit            |  Firebase Functions |
|  App Hosting    |  Hosting           |  Cloud Storage      |
|  Authentication |  Realtime Database |  Data Connect       |
|  Extensions     |  Machine Learning  |  Firestore          |

## RUN

- |  |   |   |
|--|---|---|
|  A/B Testing       |  Crashlytics       |  Performance Monitoring |
|  App Distribution |  Google Analytics |  Remote Config         |
|  Cloud Messaging  |  In-App Messaging |  Test Lab              |

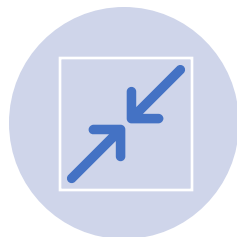




- Google Account
- Firebase Console
- Firebase Project Setup
- Development Environment
- Platform SDKs
- Firebase Services Configuration
- Security and Rules



EASY SIGN-IN WITH  
ANY PLATFORM



FLEXIBLE, DROP-IN  
UI



COMPREHENSIVE  
SECURITY



FAST  
IMPLEMENTATION





- Cloud-hosted NoSQL database for real-time data storage and synchronization
- Provides instant updates on data changes
- Schema-less with flexible data structures
- Ideal for live collaboration applications like chat apps, multiplayer games, and collaborative editing tools





“chat”

“message\_1”

name: “Frank”

message: “Hello. Anyone here?”

“message\_2”

name: “Jeff”

message: “Sorry, working on some AI”



NoSQL document database



Provides services like storage, synchronization, and querying



Works on a global scale



Organized into collections containing documents



Uses key-value pairs

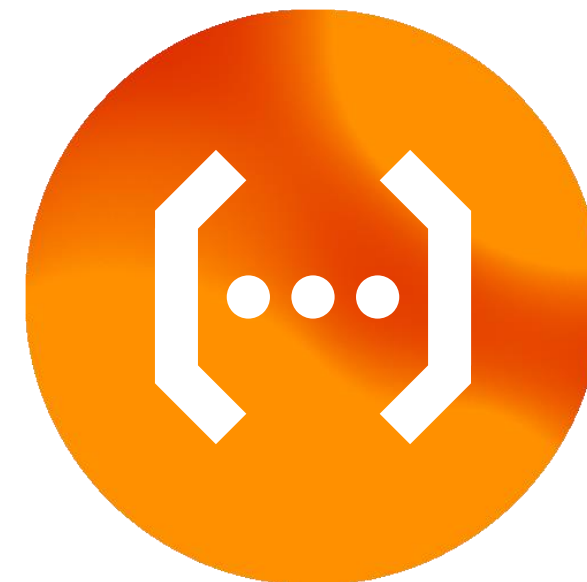


Supports various data types including strings, binary data, and JSON trees





- Serverless Architecture
- Event-Driven Execution
- Managed Environment
- Language Support
- Integration and Flexibility
- Monitoring and Debugging
- Cost-Effectiveness





- Secure and scalable storage
- Supports large file uploads and downloads, with resumable functionality.
- Features metadata management
- Cost-effective pricing based on storage usage.
- Ideal for media sharing, file hosting, and backups.





- Ease of Integration
- Ready-Made Solutions
- Customization Options
- Scalability and Reliability
- Time and Cost Savings







- Production-grade web content hosting for developers.
- Allows quick deployment of web apps and serving of static/dynamic content via a global CDN.
- Offers domain options:
  - Default domains are **web.app** and **firebaseapp.com** domains included at no cost.
  - Multiple sites creation for related apps within the same Firebase project.
  - Connection of custom domain names to Firebase-hosted sites.





## Three steps to deploy your site



### Test locally

Open your web app at a locally hosted URL



### Preview and share changes

Deploy to a sharable, temporary preview channel



### Deploy live

Clone to your live channel, or deploy from your local project directory



- Data Connect lets you declare your application's data model and the exact queries needed by your application.
- Using your data model we automatically create a PostgreSQL database schema to fit your data model, secure server endpoints that talk to the database, and type-safe SDKs for your client application that talk to the server endpoints.
- It's like a "self-driving app server" made-to-order for your specific application.



- Easily put together the AI components you need
- Reduces the complexity of integrating AI components by giving you plugins, templates, and simple abstractions so you can use AI models with your own custom logic and data to build AI features optimized for your business.



## Spark Plan (Free)

- **Pricing:** Free
- **Features:** Limited usage, Ideal for small projects and testing

### Firestore Database

- 1 GB storage
- 50,000 reads/day
- 20,000 writes/day
- 20,000 deletes/day

### Cloud Functions

- 125k invocations/month

### Hosting

- 1 GB storage
- 10 GB/month data transfer

### Realtime Database

- 1 GB storage
- 10 GB downloads/month

### Authentication

- 10k verifications/month

## Blaze Plan (Pay as you go)

- **Pricing:** Based on usage
- **Features:** Scales with your needs

### Firestore Database

- \$0.18/GB stored
- \$0.06/100k reads
- \$0.18/100k writes
- \$0.02/100k deletes

### Cloud Functions

- \$0.40/million invocations (after free tier)
- Additional costs for compute time and networking

### Hosting

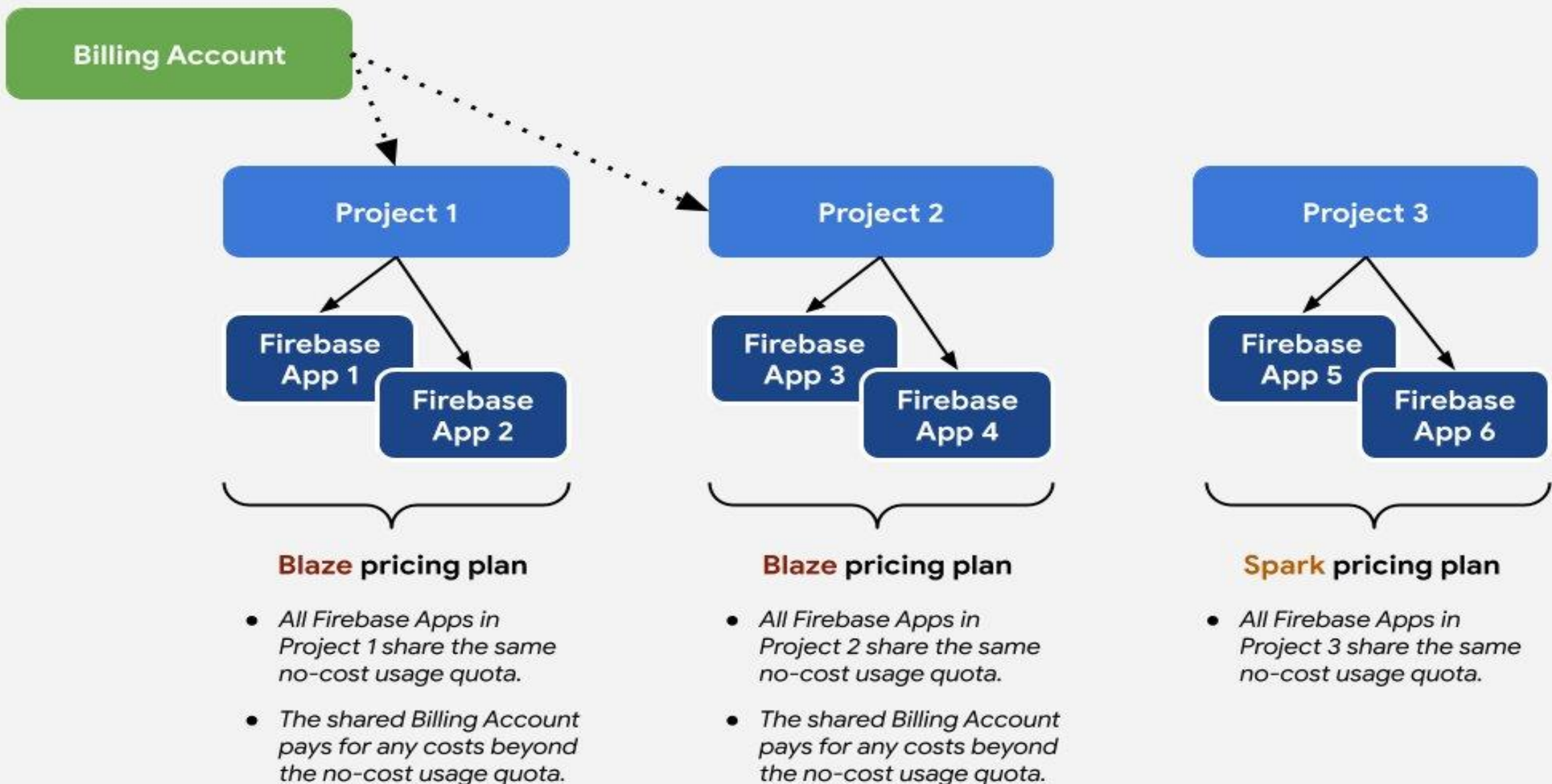
- \$0.026/GB stored
- \$0.15/GB data transfer

### Realtime Database

- \$5/GB stored
- \$1/GB downloaded

### Authentication

- Pay for additional usage beyond free



- Speed
- Scalability
- Integration
- Analytics
- Security
- Real-time Updates





- Vendor Lock-In
- Limited Customization
- Data Ownership



The New York Times



venmo



trivago



wattpad 





*Thank you*