ROADMAP

If you're working with **Node.js** for backend development, you’ll need to master several key skills. Here’s a breakdown:

**1. Core Node.js Concepts**

* **Asynchronous Programming** (callbacks, promises, async/await)
* **Event Loop & Non-blocking I/O**
* **Streams and Buffers**
* **Error Handling**

**2. Web Frameworks**

* **Express.js** (Most popular)
* Fastify, Koa, NestJS (alternatives for specific use cases)

**3. Database Management**

* **SQL Databases** (PostgreSQL, MySQL, SQLite)
  + Writing queries
  + Using **ORMs** like Sequelize, TypeORM, Prisma
* **NoSQL Databases** (MongoDB, Redis, Cassandra)
  + Using ODMs like Mongoose

**4. Authentication & Security**

* JWT (JSON Web Token) & OAuth
* Passport.js (authentication middleware)
* Hashing with bcrypt
* CORS, CSRF Protection, and Helmet.js for security

**5. API Development**

* RESTful APIs
* GraphQL (Apollo Server, Yoga)
* WebSockets (Socket.io for real-time apps)
* gRPC for microservices communication

**6. Server-side Rendering (SSR) & Templating**

* EJS, Pug (for templating)
* Next.js (if using React for SSR)

**7. File Handling & Cloud Storage**

* File uploads (Multer)
* Cloud storage (AWS S3, Google Cloud Storage)

**8. DevOps & Deployment**

* Docker & Kubernetes
* CI/CD pipelines (GitHub Actions, Jenkins)
* Cloud platforms (AWS, Google Cloud, Vercel, Heroku)

**9. Testing & Debugging**

* Unit testing (Jest, Mocha, Chai)
* Integration testing (Supertest)
* Debugging (Node Inspector, Chrome DevTools)

**10. Performance Optimization**

* Caching (Redis, Memory Cache)
* Load balancing (NGINX, HAProxy)
* Scaling (Horizontal & Vertical scaling strategies)

VAR GLOBAL SCOPE

LET BLOCK SCOPE

Prompt returns string

Strings in javascript are immutable

Push , pop changes original array

Tostring doesn’t not changes original array

Concat doesnot change original array

Push/ unshift

Pop/shift

Slice() : returns the piece of array , slice(startldx,endldx)

Splice(): change original array ( add, remove, replace) , splice(startldx, delcouunt, newel1)