

**Shivantra.**

# Journey to Becoming a Full-Stack Developer

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# Outline

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# Introduction

# Introduction

A Software Developer with over a decade of experience in the Industry, worked in various roles, from a developer to a tech lead, and now operating my own software development and consultancy firm.

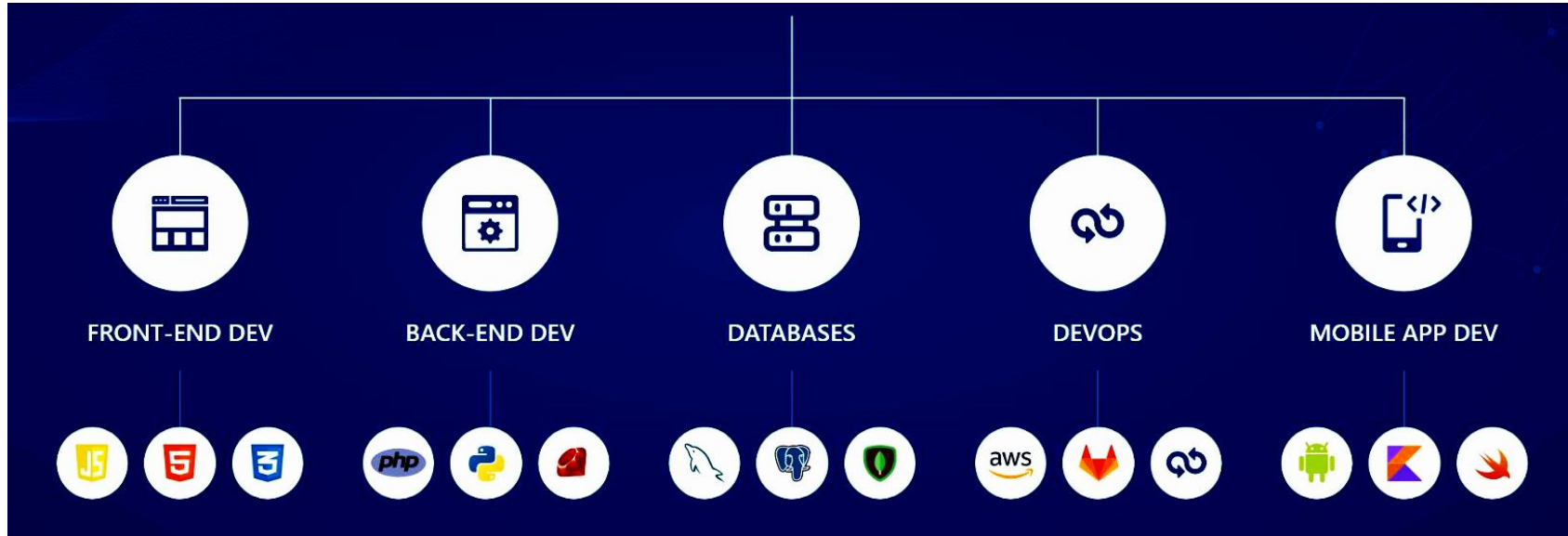


# What is Full-Stack Development ?

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**Definition :** Full-Stack development refers to the ability to work on both the Front-End (client-side) and Back-End (server-side) portions of a web application. It involves developing everything from the user interface to the server logic and database management.

# What is Full-Stack Development ? (Cont'd)





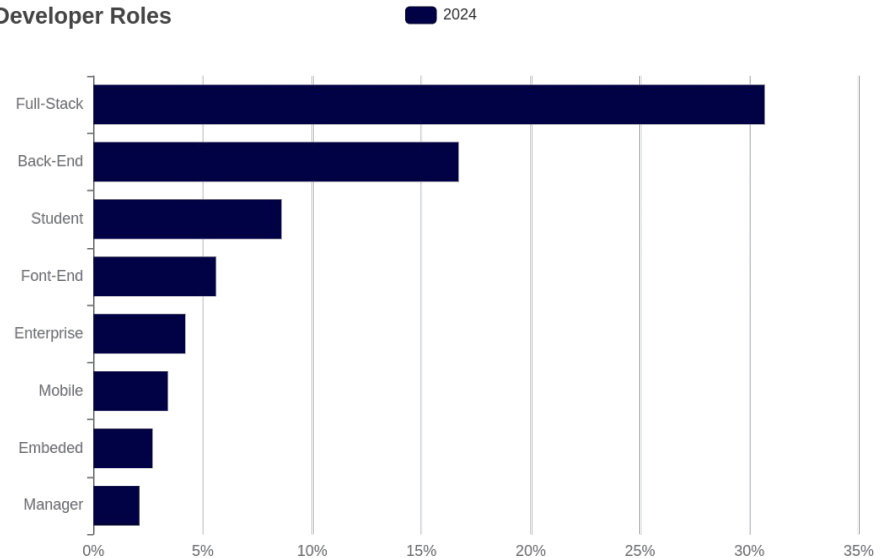
# Why Full-Stack Development ?

# Why Full-Stack Development ?

## Stack Overflow 2024 Survey

Full-Stack, Back-End, and Front-End developers were the top three roles reported by developers for the last three years; however, Front-End developers have decreased from 6.6% to 5.6% since last year. This year, more developers identify as students than as Front-End employees and we saw a slight increase in developers who have an embedded applications role or are academic researchers.

Developer Roles



Reference : <https://survey.stackoverflow.co/2024/developer-profile/#developer-roles>

# Why Full-Stack Development ? (Cont'd)

- Versatility
- Autonomy
- Demand in Industry
- Career Opportunities

# Skills Required

# Skills Required

- **Technical Skills**

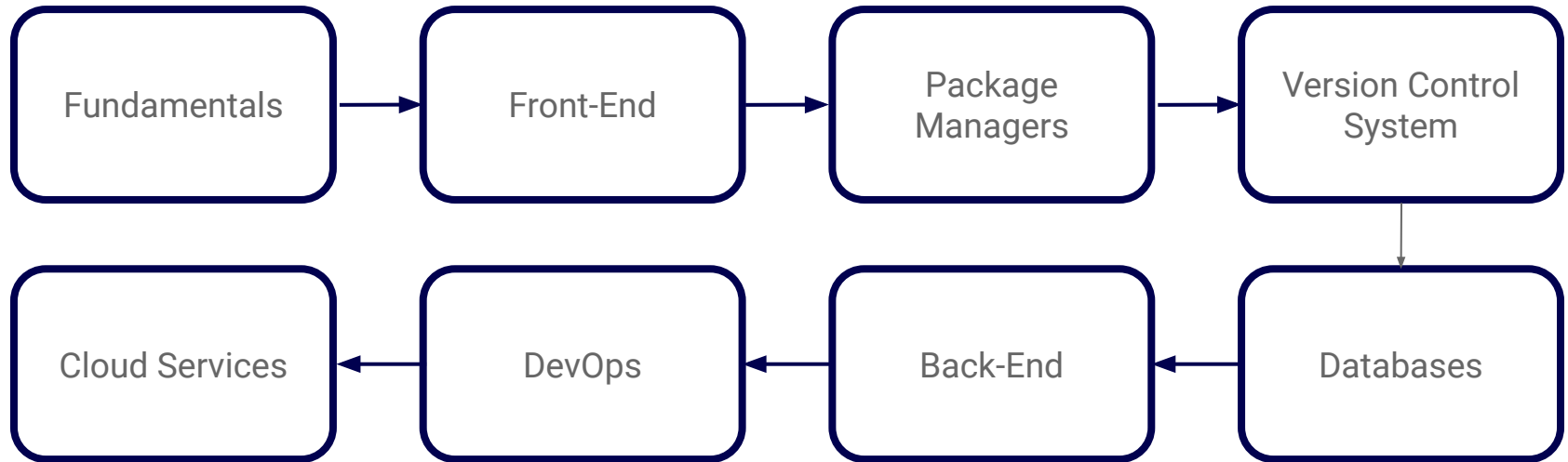
- Front-End: Mastery of HTML, CSS, and JavaScript frameworks like React or Angular.
- Back-End: Understanding of server-side languages like Java or Python.
- Databases: Proficiency in SQL and NoSQL databases.
- Version Control: Knowledge of Git and GitHub for collaborative development.
- DevOps: Familiarity with tools like Docker and Jenkins to manage deployment and scaling

- **Soft Skills**

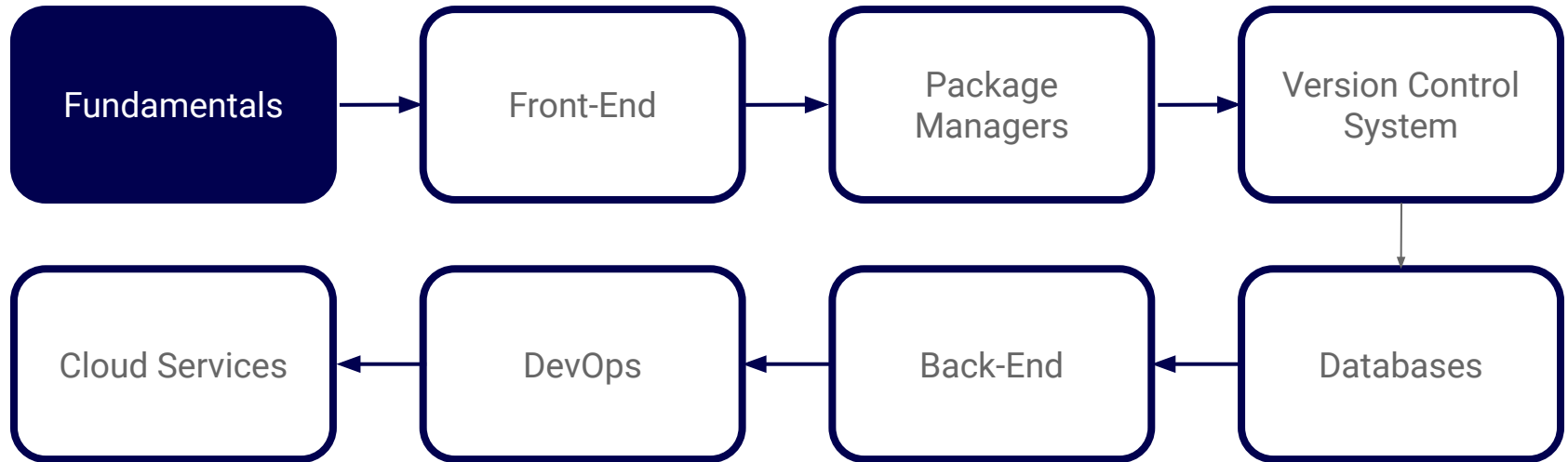
- Problem-solving: Ability to tackle complex technical challenges.
- Communication: Clear communication with team members and stakeholders.
- Adaptability: Staying updated with rapidly evolving technologies.

# Learning Pathway

# Learning Pathway



# Learning Pathway ( Cont'd )

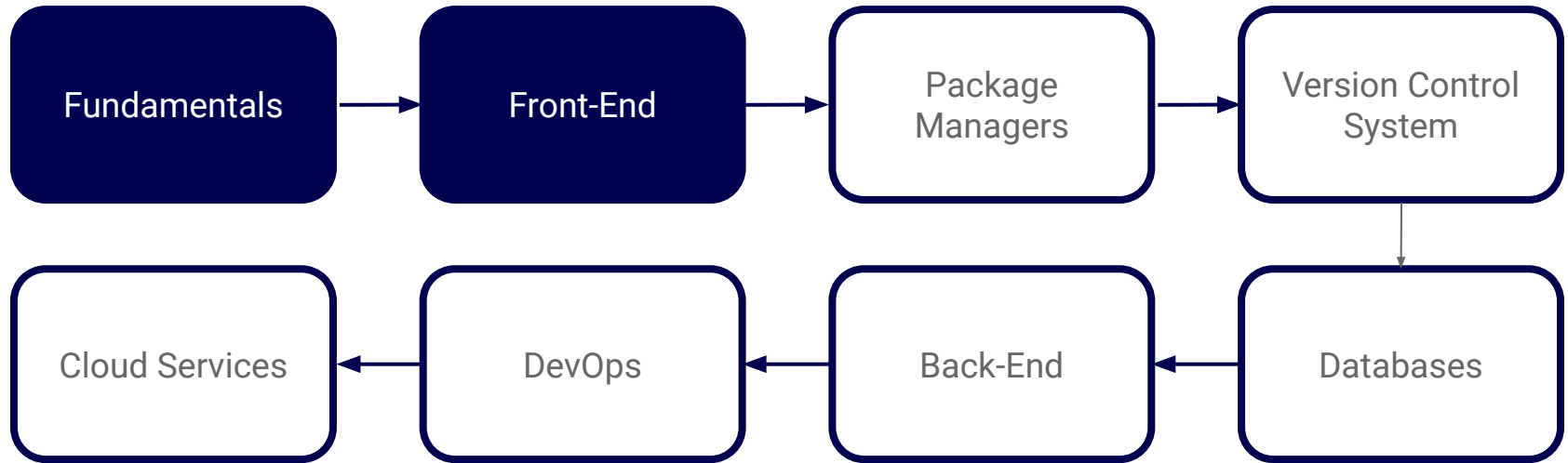




# Learning Pathway ( Cont'd )

- **Fundamentals**
  - Programming Concepts
  - Client Server Model
  - Editor
  - Terminal

# Learning Pathway ( Cont'd )



# Learning Pathway ( Cont'd )

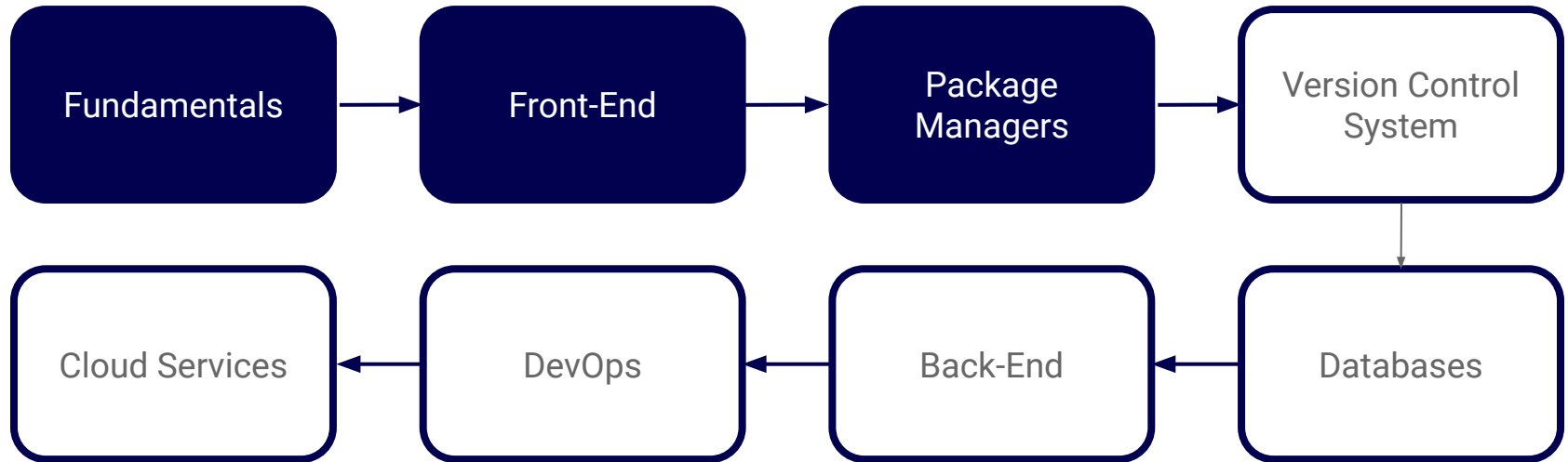
- **Front-End Beginner**

- HTML & CSS
- JavaScript
- CSS Frameworks & Layouts

- **Front-End Advance**

- JavaScript Frameworks & Meta Frameworks
- CSS Processor
- Build Systems

# Learning Pathway ( Cont'd )

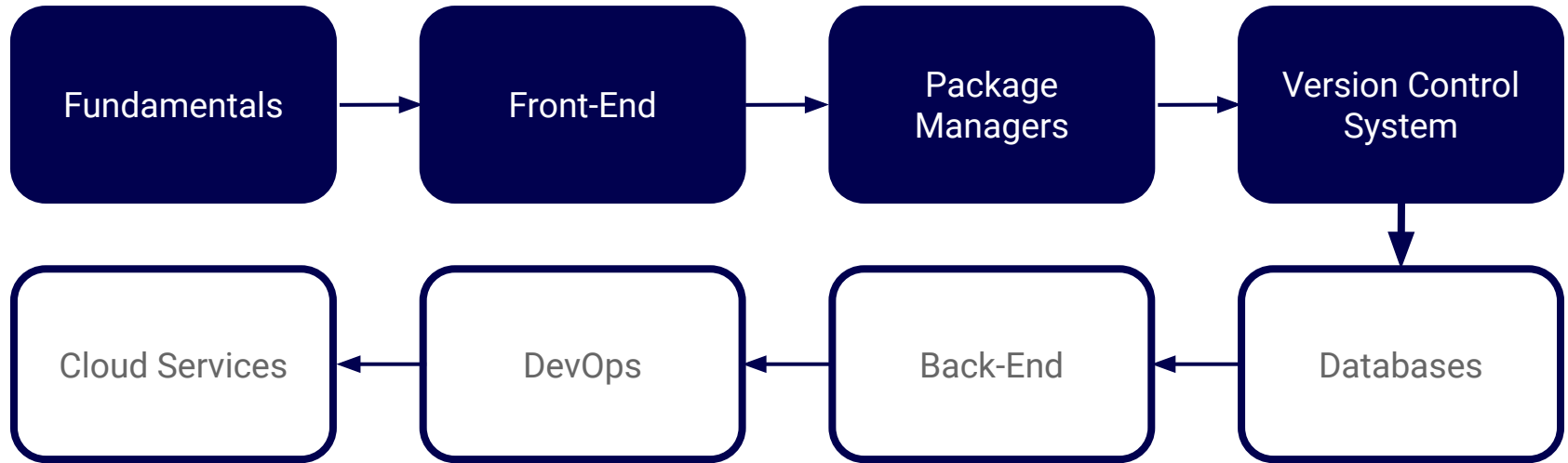


# Learning Pathway ( Cont'd )

- **Package Manager**

- NPM
- Yarn
- PNPM
- Maven
- Gradle

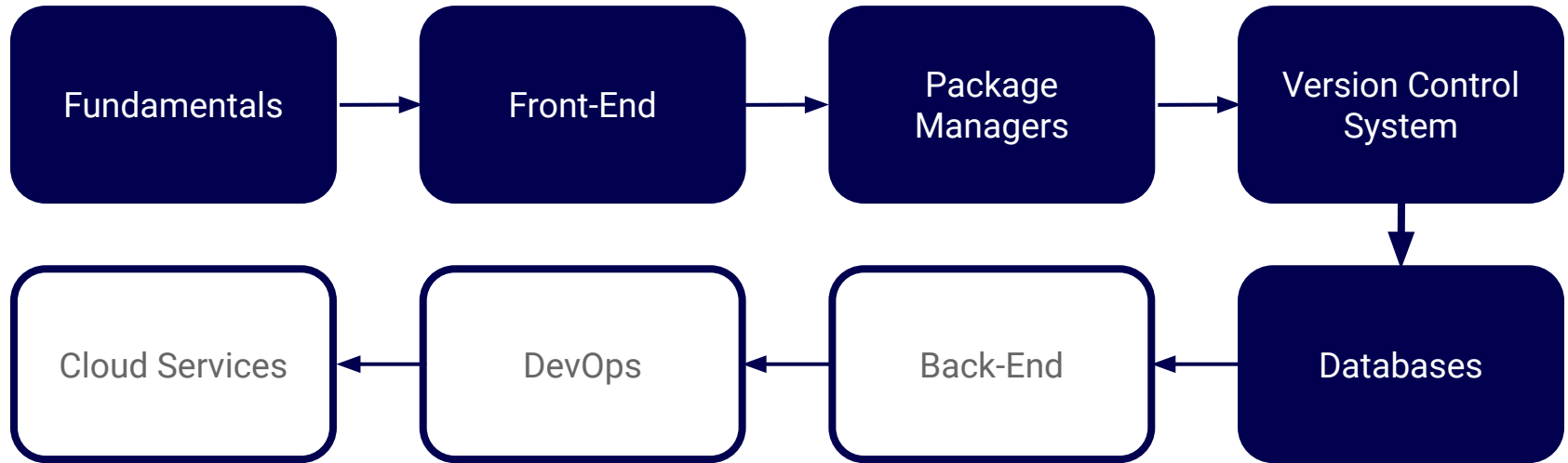
# Learning Pathway ( Cont'd )



# Learning Pathway ( Cont'd )

- **Version Control System**
  - GIT & GitHub
  - Subversion ( SVN )
  - Team Foundation ( TFS )

# Learning Pathway ( Cont'd )

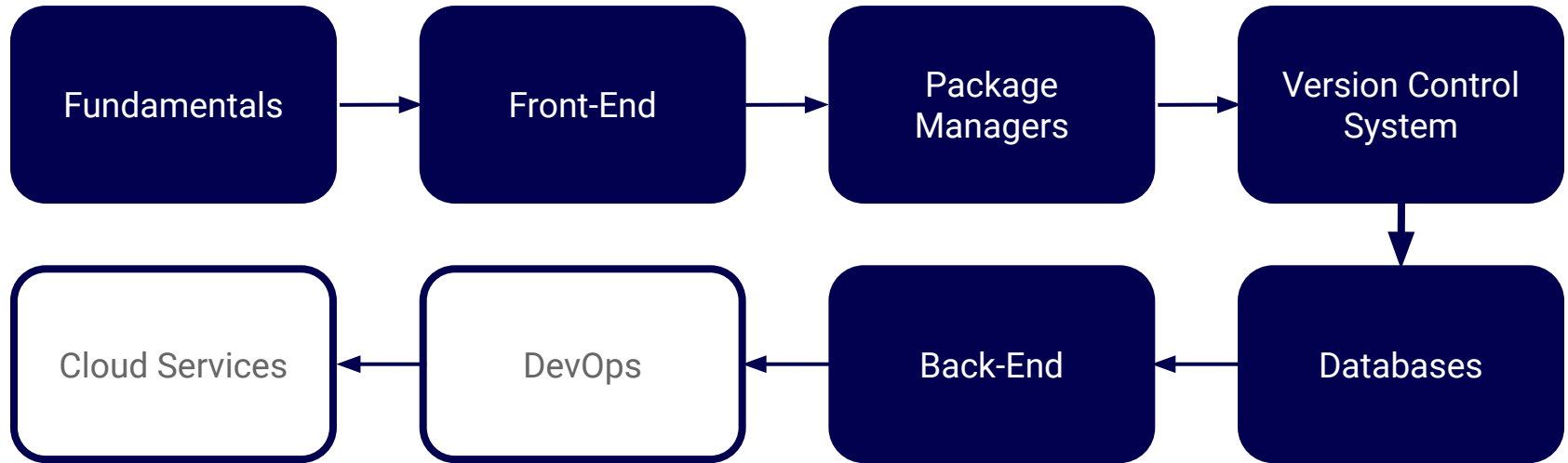




# Learning Pathway ( Cont'd )

- **Databases**
  - SQL
  - NoSQL

# Learning Pathway ( Cont'd )



# Learning Pathway ( Cont'd )

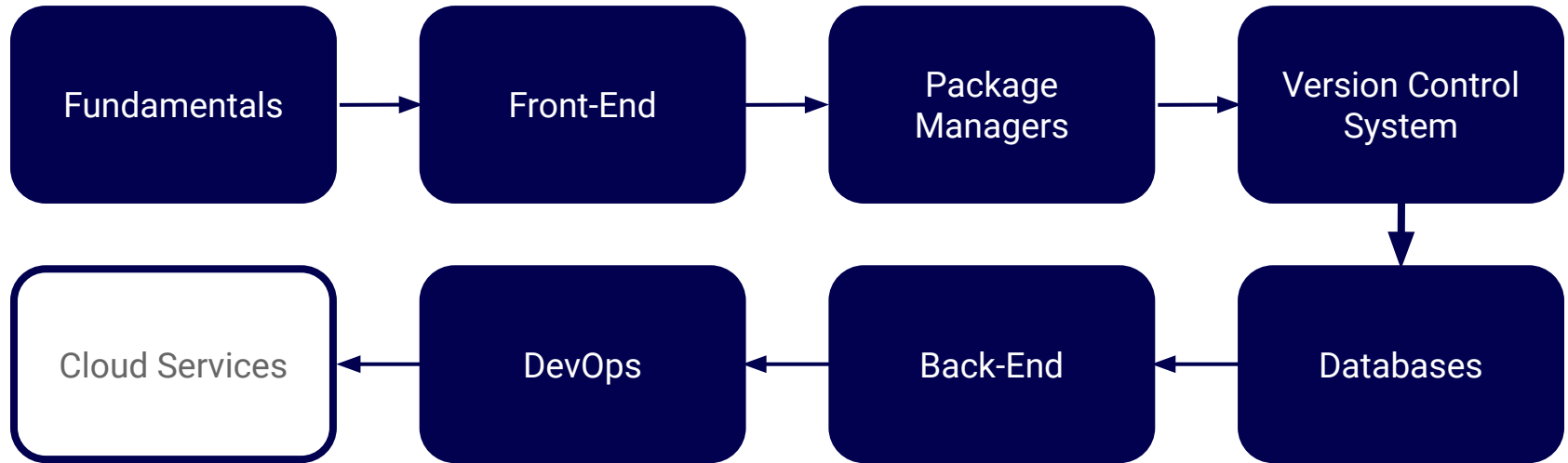
- **Back-End Beginner**

- Linux Basic
- REST & JSON
- Web Services
- Backend Frameworks & Templating Engines

- **Back-End Advance**

- Authentication and Authorization ( JWT, Oauth, SAML)
- Caching
- Message Brokers

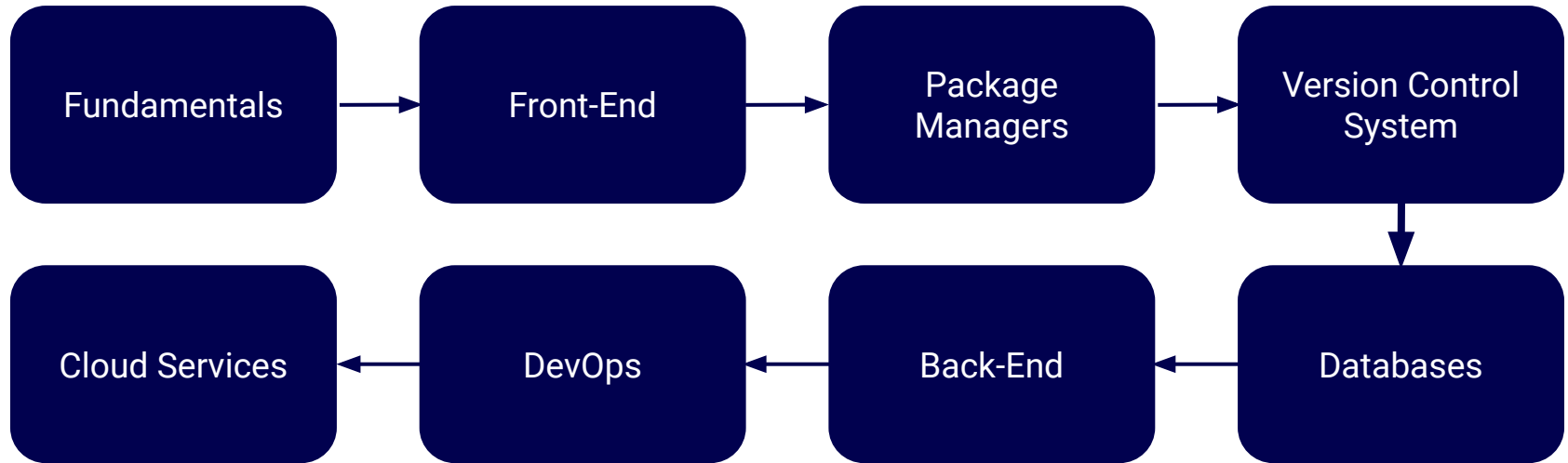
# Learning Pathway ( Cont'd )



# Learning Pathway ( Cont'd )

- **DevOps**
  - CI / CD ( Github Actions, Jenkins )
  - Containerization ( Docker, LXD )
  - Virtualization
  - Load Balancer ( NGINX )

# Learning Pathway ( Cont'd )



# Learning Pathway ( Cont'd )

- **Cloud Services**
  - Amazon Cloud Services ( AWS )
  - Microsoft Azure
  - Google Cloud Platform ( GCP )
  - Vercel

# Hands-On Practice



# Hands-On Practice

**Building Projects :** Start by building small, focused projects. For example, create a to-do list app, a blog platform, or a basic e-commerce site to practice full-stack development.

**Contributing to Open Source :** Contributing to open-source projects is a great way to improve your skills, gain exposure, and collaborate with other developers. Platforms like GitHub host thousands of open-source projects waiting for contributions.



# Current Trends

# Current Trends

- **Emerging Technologies**

- AI / ML
- IOT
- Block Chain
- WEB 3.0

- **Future**

- Microservices
- Serverless Architecture
- JAMStack

# Challenges & Pitfalls

# Challenges & Pitfalls

- **Common Scenario**

- No clear direction
- No specific expertise
- Burnout

- **Solutions**

- One thing at a time
- Front-End or Back-End heavy
- Project based learning

# Industry Insights

# Industry Insights

**Market Demand :** The demand for full-stack developers has been on the rise, with businesses seeking versatile developers who can manage end-to-end development. According to the U.S. Bureau of Labor Statistics, employment of web developers and digital designers is projected to grow 8% from 2020 to 2030, faster than the average for all occupations.

**Hiring Trends :** Companies are increasingly looking for developers who are not just proficient in coding but also have a solid understanding of the entire tech stack. This trend is evident in job postings, where 'Full-Stack Developer' is one of the most frequently listed positions in the tech industry.

**Salary Insights :** Salaries for full-stack developers vary by region, experience, and the technologies they specialize in. However, on average, full-stack developers earn competitive salaries that are often higher than those of front / back-end specialists. For instance, in the U.S., full-stack developers earn an average salary of around \$110,000 per year, while in India, the average salary is ₹6,00,000 to ₹15,00,000 annually.

# Building Portfolio



# Building Portfolio

- **Personal Projects**
- **Open Source Contributions**
- **Internship & Freelancing**
- **Live Demos & Code Repository**

# Resources for Learning

# Resources for Learning

- [MDN](#)
- [Web.DEV](#)
- [GIT](#)
- [Google Developer](#)

# Conclusion

# Conclusion

Today, we covered the essentials of full-stack development, including what it is, why it's important, the skills required, and how to get started. Remember, **the journey of a thousand miles begins with a single step.**

Start your journey today by exploring the resources mentioned, building your first project, or contributing to an open-source initiative. The world of full-stack development is waiting for you.

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# Thank You

# Q&A