Software Engineering Job Fields

Exploring the Roles and Fields of Software Engineers

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Business Management

Professional English-I Presentation

Contents

Software Engineering: Definition, Roles, and Importance

Software Engineering: Focuses on design, development, testing, and maintenance of software. A systematic and disciplined approach.

Computer Engineering: Specializes in hardware and software development, combining electrical engineering and computer science.

Importance: Foundation of daily technology; from smartphones to AI and cybersecurity.

Fields of Work and Technologies Used by Software Engineers

- Front-End Developer
- Back-End Developer
- Full Stack Developer
- Mobile Developer
- Game Developer
- Database Admin
- QA/Test Engineer
- UX / UI Designer
- Data Scientist
- Cyber Security Developer
- Blockchain Developer
- Machine Learning / AI Developer
- DevOps Engineer
- System/Network Engineer

UI / UX Designer

They work on the UI and UX designs of applications, ensuring they are intuitive and user-friendly.

Sketch, Figma, Adobe XD, InVision, (Front-End bilgisi +), ...

Front-End Developer

They develop software focused on creating User Interface (UI) and User Experience (UX) for web applications.

HTML, CSS, JavaScript, React.js, ...

Back-End Developer

They manage server-side tasks for web applications, including database design, administration, and the overall server-side logic.

Node.js, PHP, Python, C#, Go, SQL, ...

Full Stack Developer

Those who specialize in both Front-End and Back-End areas, working across both sides of development.

HTML, CSS, JavaScript, Node.js, MongoDB, SQL, Python, C#, GO, ...

Mobile Developer

Developers who create applications for mobile devices like smartphones and tablets.

Swift(IOS), Kotlin(Android), Flutter(Cross-Platform), ...

Game Developer

They create games for various platforms, focusing on both functionality and entertainment.

C++, C#, Unreal Engine, Unity

Database Admin DBA

They manage database systems for data availability and security, performing regular maintenance.

SQL, Oracle, MongoDB, ...

Data Scientist

They analyze and interpret complex data to help businesses make informed decisions.

Python, R, SQL, TensorFlow, PyTorch, ...

Cyber Security

They develop and use software that detects and prevents malicious activities.

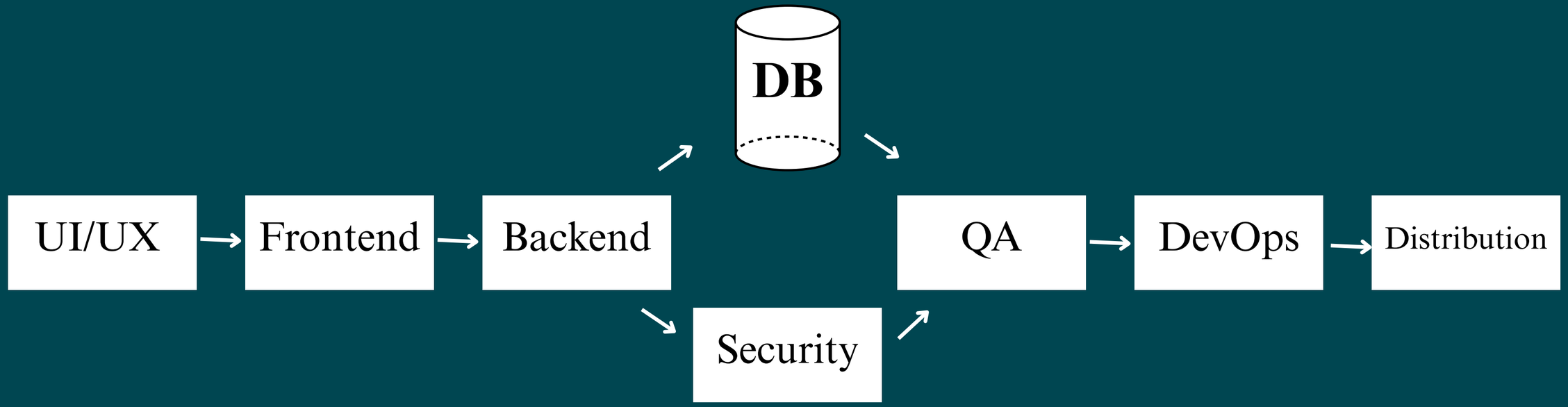
Java, Python, C, C++, Penetration testing uygulamaları,

Machine Learning / AI

They design and implement algorithms that enable machines to learn from data and act based on it.

Python, TensorFlow, Keras, Scikit-learn, PyTorch, ...

Case Study: The Development Process of a Web Application



Future Trends in the Software Industry

AI & ML: Automation, personalization, smarter decision-making; AI-powered development tools.

Cloud Computing: Scalable, flexible, cost-efficient; rise of serverless and microservices.

Blockchain: Secure, transparent, decentralized; smart contracts & Web3 apps.

IoT: Connected devices & sensors; real-time data collection and analysis.

Metaverse & VR/AR: New interaction platforms; 3D web and digital twins.

THANKS