AVAKSH TECHNOCORP

Designing Algorithms & Design Optimization

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Ashish Rautela

Experienced professional with a strong proficiency in various technology domains. I have successfully executed multiple projects for Fortune 500 clients and have collaborated with a company accredited at CMM Level 5. My primary focus area is to assist my clients in achieving digital transformation within their business operations.

Vivek Srivastava

Experienced professional with a comprehensive skill set that encompasses various technologies. I possess deep expertise, visionary thinking, and a notable portfolio of innovative projects. My focus is on assisting businesses in achieving their objectives by leveraging technology and domain knowledge.

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Agenda

- Designing Algorithms
- Design Optimization
- Algorithms - Object-Oriented Context
- Strategies - Optimizing OO Designs
- Q & A

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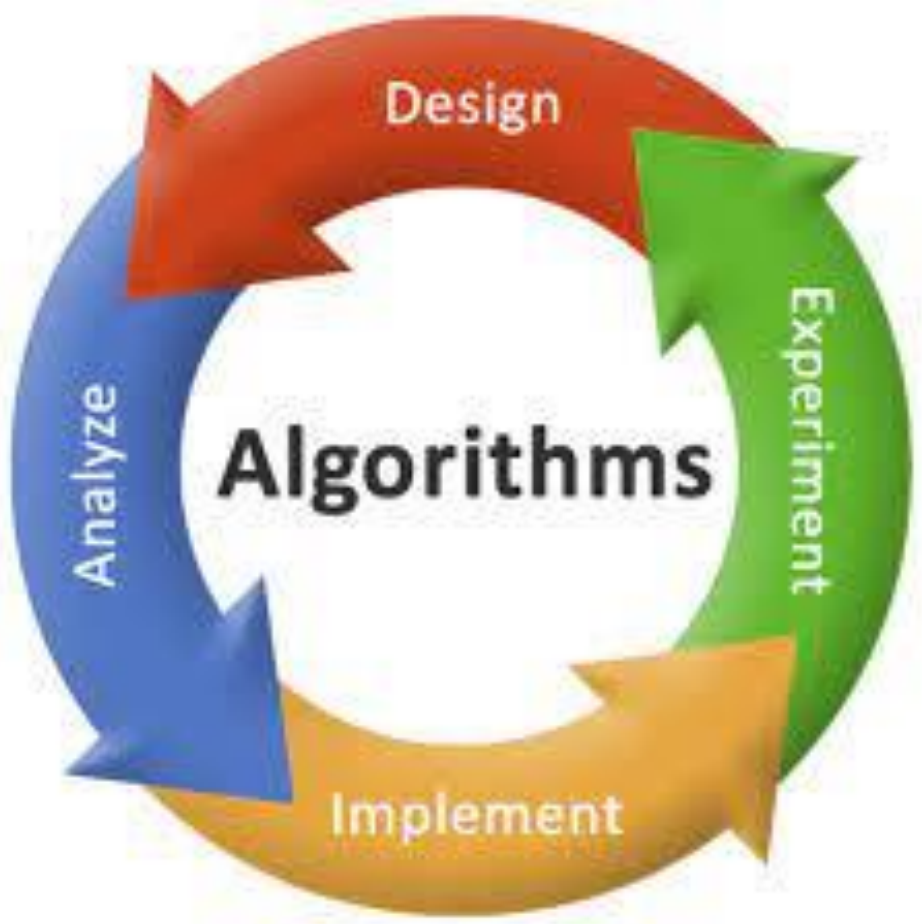
Designing Algorithms

- Understand the Problem.
- Choose the Right Data Structures.
- Divide and Conquer
- Dynamic Programming
- Greedy Algorithms
- Randomized Algorithms
- Backtracking
- Heuristic Methods
- Parallelism



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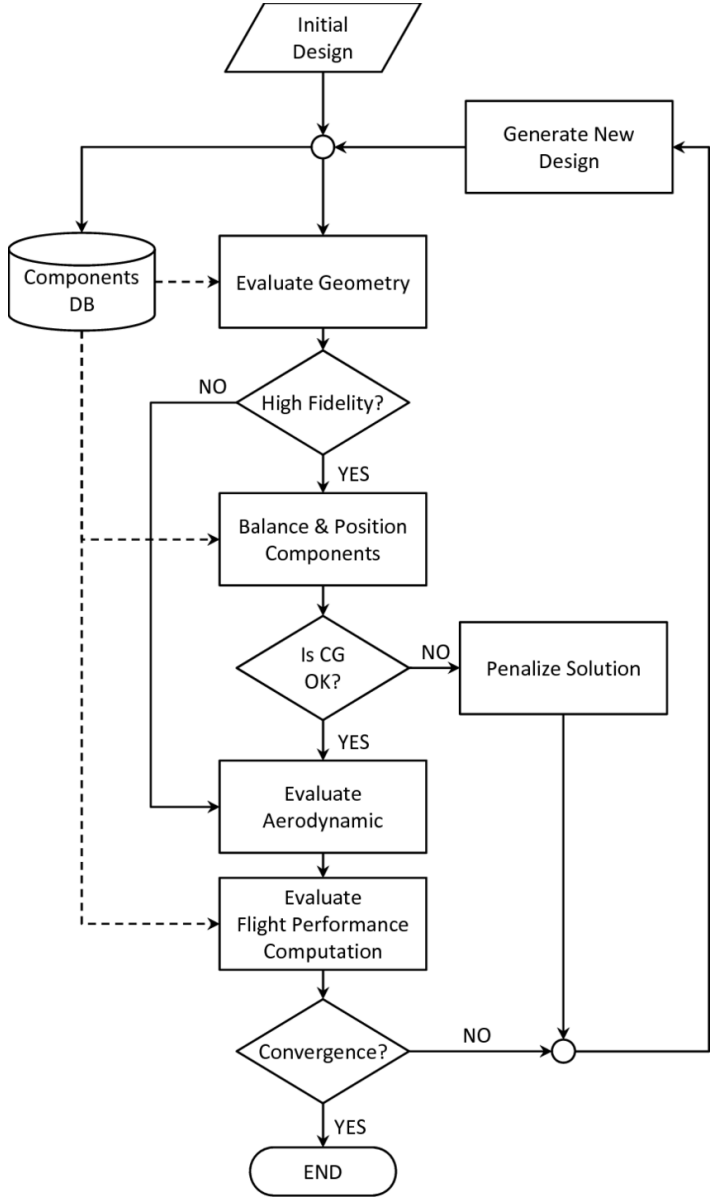
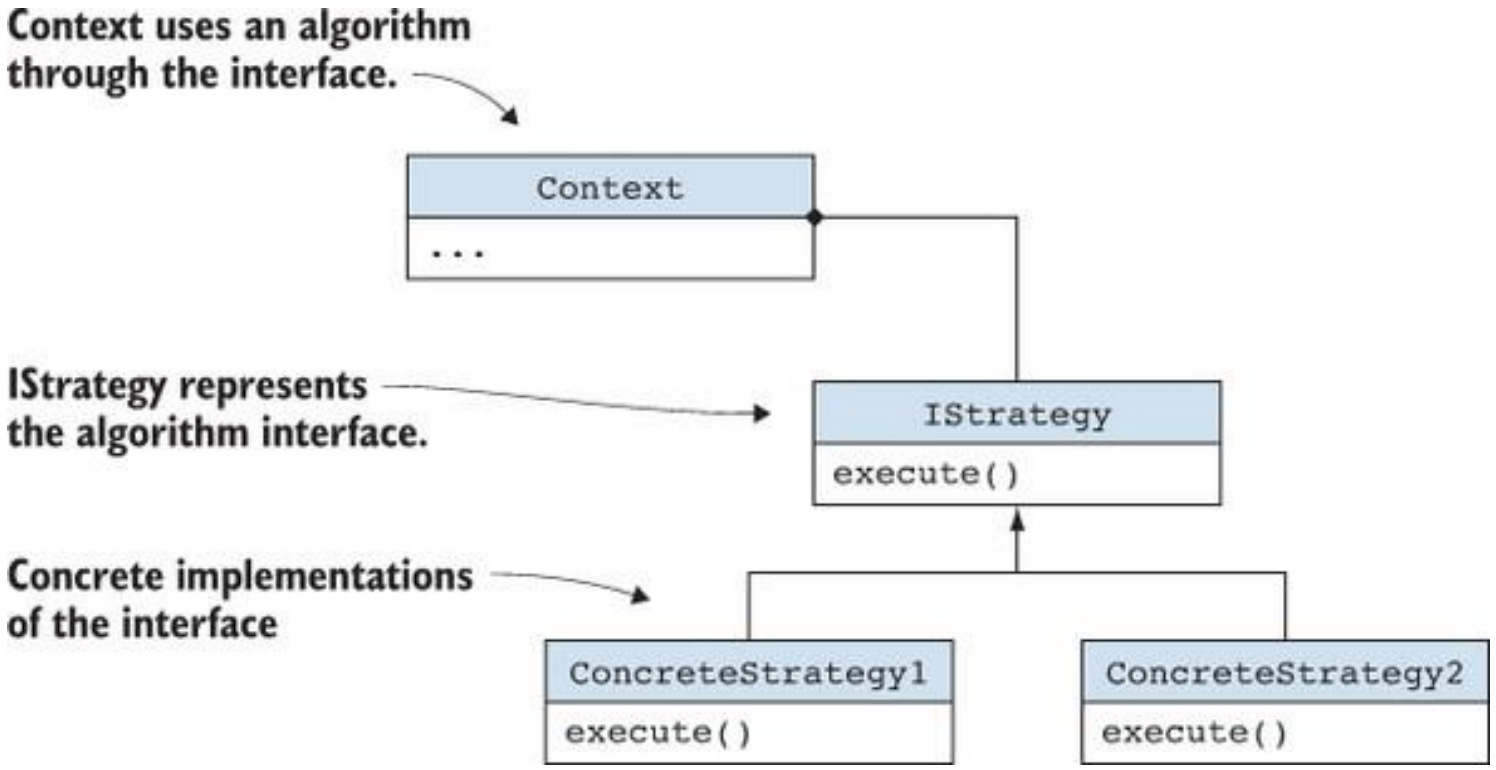
Design Optimization

- Time Complexity.
- Space Complexity.
- Algorithmic Efficiency
- Caching and Memoization
- Optimized Data Structures
- Parallel and Concurrent Processing
- Profiling and Benchmarking
- Code Optimization
- Trade-offs



Algorithms - Object-Oriented Context

- Identify the Problem
- Identify Objects
- Define Classes
- Encapsulation
- Define Relationships
- Behavioral Design
- Modularization
- Abstraction
- Polymorphism
- Testing
- Refinement and Optimization
- Documentation
- Iterative Development
- Reuse
- Maintainability



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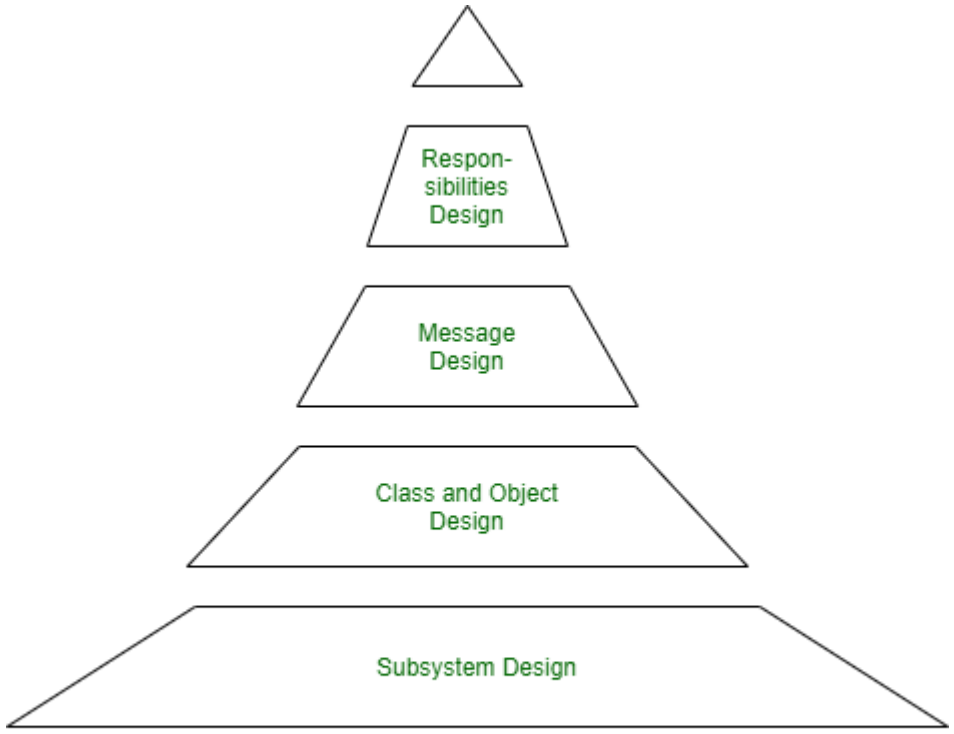
Strategies - Optimizing OO Designs.

- Choose Appropriate Data Structures
- Minimize the Use of Global Variables
- Optimize Method Calls
- Algorithmic Paradigms
- Caching and Memoization
- Use Lazy Loading
- Cache Frequently Used Results
- Optimize Database Access
- Apply Design Patterns Judiciously
- Consider Object Creation Overhead
- Reduce Coupling



The Object Oriented Design Pyramid

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Conclusion

- Recap
- Best Practices

Q&A

Thank You

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