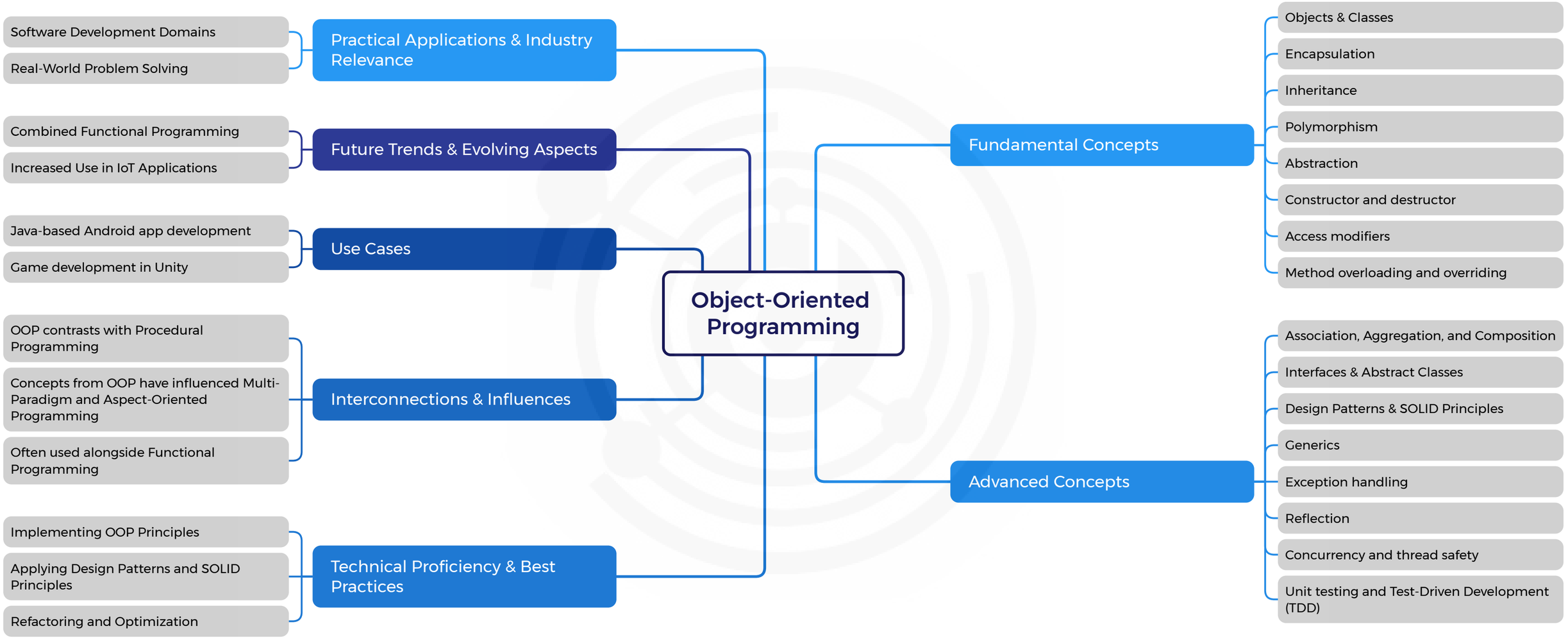
Object-Oriented Programming
Fundamental Concepts
Objects & Classes
Encapsulation
Inheritance
Polymorphism
Abstraction
Constructor and destructor
Access modifiers
Method overloading and overriding
Advanced Concepts
Association, Aggregation, and Composition
Interfaces & Abstract Classes
Design Patterns & SOLID Principles
Generics
Exception handling
Reflection
Concurrency and thread safety
Unit testing and Test-Driven Development (TDD)
Practical Applications & Industry Relevance
Software Development Domains
Real-World Problem Solving
Future Trends & Evolving Aspects
Combined Functional Programming
Increased Use in IoT Applications
Use Cases
Java-based Android app development
Game development in Unity
Interconnections & Influences
OOP contrasts with Procedural Programming
Concepts from OOP have influenced Multi-Paradigm and Aspect-Oriented Programming
Often used alongside Functional Programming
Technical Proficiency & Best Practices
Implementing OOP Principles
Applying Design Patterns and SOLID Principles
Refactoring and Optimization