+ Performance

+ Extensibility

+ Scalability

+ Testability

+ Testability

[Create new objects by copying this prototype] **Pattern** + Flexibility Maintainability **Quantum Broadcast Pattern** Ensure uniform and efficient execution of operations across [Quantum multiple qubits] + Modularity proces + Flexibility - Complexity optimization] **Decorator Design Pattern** [Extend the functionality of quantum operations without modifying the original code structure] - Maintainability **Transformer Design Pattern** [Convert sequences of quantum operations for batch execution using parallel processing techniques] + Functionality + Extensibility + Flexibility - Cost and Effort **Quantum Service-**+ Availability - Performance **Oriented Architecture** [Enable integration and optimization by treating each task as a self-**Pattern** contained service with well-defined interfaces] + Functionality + Extensibility **Quantum Service** Registry [Enable integration and optimization by centralizing the tracking and management of quantum services, resources, and algorithms ] **Bring Your Own** + Extensibility **Container (BYOC)** [Facilitate integration and optimization by packaging quantum services and **Pattern** algorithms into isolated containers] + Interoperability **Quantum Load Balancing Pattern** [Efficiently distribute workloads across multiple quantum processors, optimizing resource use and reducing bottlenecks]

[Integrate diverse quantum programming approaches]

- Complexity

- Security

**Integration Pattern** 

**Prototype Design**