Mirador System Requirements

Hardware Requirements

Minimum System Specifications

- **Processor:** Apple Silicon M1 or Intel Core i5 (2019 or newer)
- **Memory:** 8GB RAM minimum, 16GB recommended for optimal performance
- **Storage:** 10GB available disk space for models and outputs
- **Network:** Internet connection for initial model downloads and updates

Recommended System Specifications

- **Processor:** Apple Silicon M2 or M3 for optimal performance
- **Memory:** 16GB RAM or higher for concurrent model execution
- **Storage:** 20GB available disk space with SSD for faster model loading
- **Network:** Broadband connection for efficient model management

Software Requirements

Operating System

- **macOS:** Version 12.0 (Monterey) or newer
- **Architecture:** Native support for both Apple Silicon and Intel processors
- **Terminal:** Built-in Terminal.app or compatible terminal emulator

Core Dependencies

- **Ollama:** Version 0.1.0 or newer for local AI model execution
- **Git:** Version 2.30 or newer for version control and development
- **Bash:** Version 4.0 or newer (included with macOS)
- **Python:** Version 3.8 or newer (optional, for advanced scripting)

Installation Commands

```
 # Install Ollama (if not already installed)
curl -fsSL https://ollama.ai/install.sh | sh

# Verify Git installation
```

```
git --version

# Check Python availability (optional)
python3 --version
```

Model Requirements

Required Ollama Models

The following models must be available in your local Ollama installation:

- **llama3.2_balanced:** Base model for specialist creation
- **enhanced_agent_fast_v3:** Strategic analysis and chain collaboration
- **financial_planning_expert_v5:** Louisville-specific financial planning
- **louisville_expert_v2:** Local resource integration and guidance

Model Storage Requirements

- **Base Models:** Approximately 4-7GB per model
- **Specialist Models:** Additional 1-2GB per specialist
- **Total Storage:** 15-20GB for complete Mirador installation

Model Performance Requirements

- **Response Time:** Target 10-30 seconds per model query
- **Chain Execution:** Target 30-60 seconds for 2-3 model chains
- **Memory Usage:** 2-4GB RAM per active model

Network Requirements

Initial Setup

- **Bandwidth:** Minimum 10 Mbps for model downloads
- **Data Usage:** 15-20GB for initial model installation
- **Connectivity:** Stable internet connection during setup

Ongoing Operation

- **Local Execution:** No internet required for normal operation
- **Updates:** Periodic internet access for model updates
- **Backup:** Optional cloud storage for backup and synchronization

Security Requirements

Privacy Protection

- **Local Processing:** All personal data remains on local machine
- **No Cloud Dependencies:** No external API calls during normal operation
- **Data Encryption:** File system encryption recommended for sensitive data

Access Control

- **User Permissions:** Standard user account sufficient for operation
- **File Permissions:** Proper permissions for model files and outputs
- **Network Security:** Firewall configuration for Ollama service

Performance Optimization

System Configuration

- **Memory Management:** Close unnecessary applications during heavy usage
- **Storage Optimization:** Regular cleanup of output directories
- **Process Monitoring:** Monitor system resources during chain execution

Model Optimization

- **Parameter Tuning:** Adjust model parameters for optimal performance
- **Chain Optimization:** Optimize chain patterns for efficiency
- **Response Caching:** Implement caching for frequently used queries

Troubleshooting Requirements

Diagnostic Tools

- **System Monitoring:** Activity Monitor for resource tracking
- **Log Analysis:** Console.app for system log review
- **Performance Testing:** Built-in testing scripts for validation

Recovery Procedures

- **Backup Systems:** Regular backup of model configurations
- **Version Control:** Git-based recovery for system state
- **Model Reinstallation:** Procedures for model corruption recovery

Development Requirements

Development Environment

- **Code Editor:** Any text editor or IDE for model file editing
- **Version Control:** Git for tracking changes and collaboration
- **Testing Framework:** Built-in testing scripts for validation

Advanced Features

- **Custom Models:** Ability to create new specialist models
- **Chain Development:** Framework for developing new chain patterns
- **Integration:** APIs for integration with external tools and services

This requirements document ensures that your Mirador system operates optimally within your computing environment while maintaining security and performance standards.