Egg Price Agent Deployment Guide

Table of Contents

Prerequisites

- Python 3.7 or higher
- pip (Python package installer)
- MongoDB 4.4 or higher
- Git (optional, for version control)

Environment Setup

1. Create a virtual environment:

```
python -m venv venv
```

2. Activate the virtual environment:
   - Windows:

```
.\venv\Scripts\activate
```

   - Linux/Mac:

```
source venv/bin/activate
```

3. Install required dependencies:

```
pip install pymongo requests beautifulsoup4
```

MongoDB Setup

1. Install MongoDB:
   - Download MongoDB Community Server from the official website
   - Follow the installation instructions for your operating system
2. Start MongoDB service:
   - Windows: MongoDB should run as a service automatically
   - Linux/Mac:

```
sudo systemctl start mongod
```

3. Verify MongoDB connection:
   - The application will automatically test the connection when started
   - Default connection string: `mongodb://localhost:27017/`

Project Installation

1. Clone or download the project files:
   - Place all Python files in your desired directory
   - Ensure you have all required files:
     - `egg_price_agent_firecrawl_with_db.py`
     - `egg_price_schema.py`
     - `egg_price_historical_scraper.py`
     - `egg_price_agent_firecrawl.py`
2. Configure MongoDB connection:

- Open `egg_price_agent_firecrawl_with_db.py`
- Modify the connection string if needed:

```
connection_string="mongodb://localhost:27017/"
db_name="egg_price_data"
```

Configuration

1. City Configuration:
    - Supported cities are defined in `_store_initial_prices()`
    - Current supported cities:
        - Bengaluru
        - Chennai
        - Mumbai
        - Hyderabad
        - Kolkata
        - Delhi
2. Database Configuration:
    - Default database name: `egg_price_data`
    - Default collection: `egg_prices`
    - Customize by modifying the `db_name` parameter

Running the Application

1. Start the application:

```
python egg_price_agent_firecrawl_with_db.py
```

2. Verify successful startup:
    - Check for MongoDB connection message
    - Confirm initial price data is loaded
    - Test with a sample query

Deployment Options

Local Deployment

- Suitable for development and testing
- Run directly using Python interpreter
- Keep the virtual environment activated

Cloud Deployment

1. MongoDB Atlas (Cloud Database):
    - Create account on MongoDB Atlas
    - Set up a new cluster
    - Update connection string with Atlas URI
    - Enable network access for your application
2. Cloud Platform Options:
    - Heroku:
        - Create Procfile: `web: python egg_price_agent_firecrawl_with_db.py`
        - Set environment variables for MongoDB connection
        - Deploy using Heroku CLI or GitHub integration
    - AWS EC2:
        - Launch EC2 instance
        - Install Python and dependencies
        - Use systemd service for automatic startup
        - Configure security groups for MongoDB access

Security Considerations

1. MongoDB Security:
    - Enable authentication
    - Use strong passwords
    - Restrict network access
    - Regular security updates
2. Application Security:

2. Application Security:
    - Store sensitive data in environment variables
    - Validate user input
    - Implement rate limiting
    - Regular dependency updates
3. Best Practices:
    - Use HTTPS for cloud deployments
    - Implement logging
    - Regular backups
    - Monitor system resources

Maintenance

1. Regular Tasks:
    - Monitor logs for errors
    - Check MongoDB performance
    - Update dependencies
    - Backup database regularly
2. Troubleshooting:
    - Check MongoDB connection
    - Verify network connectivity
    - Review error logs
    - Test data scraping functionality
3. Updates:
    - Keep Python packages updated
    - Monitor for security patches
    - Test updates in development environment
    - Maintain documentation

Support

For issues and support:

1. Check error messages and logs
2. Review MongoDB documentation
3. Verify network connectivity
4. Check system resources

This deployment guide provides comprehensive instructions for setting up and maintaining the Egg Price Agent. Follow each section carefully and ensure all prerequisites are met before deployment.