EPW Visualizer Repository Summary

This document provides an overview of all files and directories in this repository and their purposes.

Repository Structure

```
epw_visualizer_repo/
├── epw_visualizer.py           # Main application script
├── README.md                   # Project overview and quick start guide
├── LICENSE                     # MIT License for the project
├── requirements.txt            # Python dependencies
├── CONTRIBUTING.md             # Guidelines for contributors
├── REPOSITORY_SUMMARY.md       # This file - complete repository overview
├── .github/
│   └── ISSUE_TEMPLATE/
│       ├── bug_report.md       # Template for reporting bugs
│       └── feature_request.md  # Template for requesting features
├── docs/
│   └── INSTALLATION.md         # Detailed installation instructions
├── examples/
│   └── README.md              # Guide for obtaining and using EPW files
└── src/                       # Directory for future code modularization
```

File Descriptions

Core Files

epw_visualizer.py
- The main Python script that reads EPW weather files and creates visualizations
- Contains functions for data parsing, processing, and chart generation
- Generates temperature, humidity, wind, and solar radiation plots

README.md
- Project overview with description, features, and quick start instructions
- Installation and usage examples
- Links to weather data sources

LICENSE
- MIT License providing open-source usage terms
- Allows free use, modification, and distribution

requirements.txt
- Lists all Python package dependencies
- Enables easy installation with `pip install -r requirements.txt`

Documentation

CONTRIBUTING.md
- Guidelines for contributing to the project
- Code style requirements and contribution workflow
- Areas where contributions are welcome

docs/INSTALLATION.md
- Comprehensive installation guide
- Troubleshooting section for common issues
- System requirements and development setup

examples/README.md
- Guide for obtaining EPW weather files
- Usage examples and educational applications
- File naming conventions and best practices

GitHub Integration

.github/ISSUE_TEMPLATE/bug_report.md
- Structured template for reporting bugs
- Ensures consistent information collection
- Helps maintainers reproduce and fix issues

.github/ISSUE_TEMPLATE/feature_request.md
- Template for suggesting new features
- Guides users to provide useful context
- Helps prioritize development efforts

Directory Structure

src/
- Reserved for future code modularization
- Will contain organized modules as the project grows
- Currently empty but prepared for expansion

examples/
- Directory for example files and demonstrations
- Contains guidance on obtaining weather data
- Educational use case documentation

Project Purpose

This repository provides a complete, educational tool for visualizing weather data from EPW (EnergyPlus Weather) files. It’s designed to be:

- **Educational**: Help students and researchers understand climate data
- **Accessible**: Simple installation and usage
- **Extensible**: Well-structured for future enhancements
- **Professional**: Following open-source best practices

Getting Started

1. Clone this repository
2. Follow the installation guide in `docs/INSTALLATION.md`
3. Download EPW files from the sources listed in `examples/README.md`
4. Run `python epw_visualizer.py your_file.epw`

Contributing

This project welcomes contributions! See `CONTRIBUTING.md` for guidelines and use the issue templates in `.github/ISSUE_TEMPLATE/` to report bugs or suggest features.

Repository Status

- **Complete**: All essential files for a professional open-source project
- **Ready for use**: Fully functional weather data visualization
- **Ready for collaboration**: Proper documentation and contribution guidelines
- **Expandable**: Structure supports future enhancements and modularization