# Code Documentation for DataAnalyzer.py

Module Name: DataAnalyzer

Version: 1.0.0

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Overview:

The DataAnalyzer module processes datasets to generate useful statistics and insights.

This module is designed to be flexible and highly optimized for large-scale datasets.

Functions:

1. analyze_data(dataset: list) -> dict

   This function takes a dataset (a list of numerical values) and returns a dictionary containing basic

statistics:

   - Mean

   - Median

   - Standard Deviation

   Usage Example:

   from DataAnalyzer import analyze_data
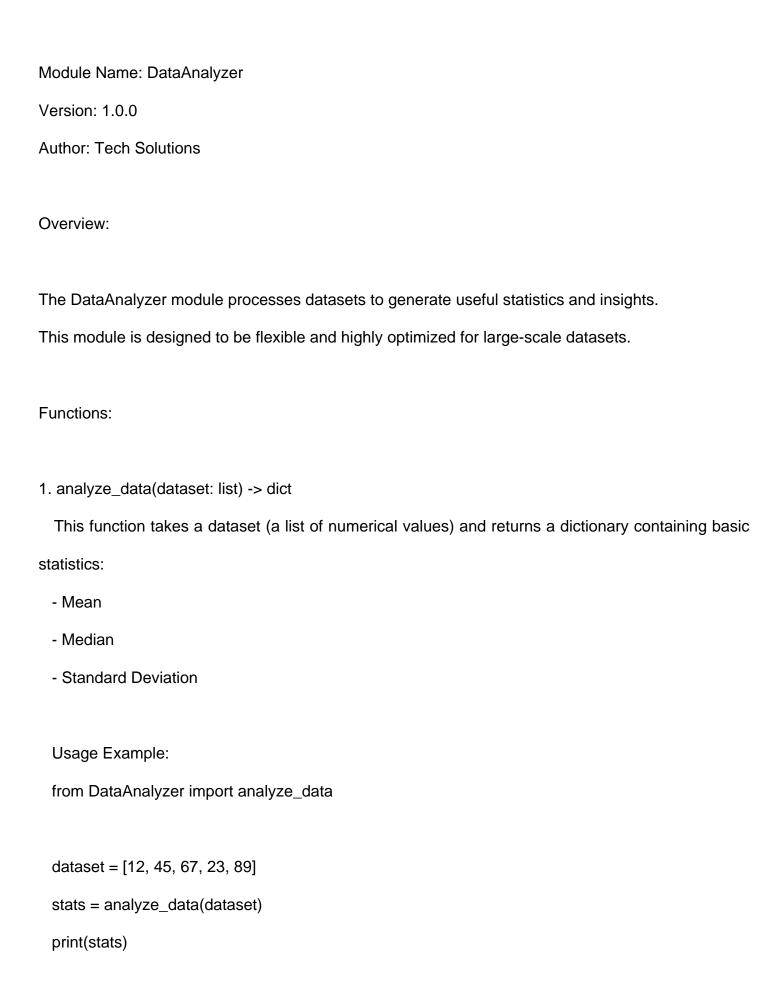
   dataset = [12, 45, 67, 23, 89]

   stats = analyze_data(dataset)

   print(stats)

2. visualize_data(dataset: list, chart_type: str = 'bar') -> None

   Generates visualizations for the provided dataset. The chart type can be 'bar', 'line', or 'scatter'.

Parameters:

- dataset (list): Input list of values.

- chart_type (str): Type of chart to generate (default is 'bar').

How to Use:

Install the module with pip:

pip install data-analyzer

Import the module and call the functions as demonstrated above.

Dependencies:

- Python 3.8+

- matplotlib

- numpy