

Detailed Summary:

This program is a **simple finance tracker** that allows a user to:

- **Add new financial transactions** (income/expense) to a CSV file.
- **View transactions** within a specific date range, along with a **summary** (total income, total expenses, and net savings).
- **Plot the transactions** on a graph (Income vs. Expense over time).

Main components:

- **CSV Class:**
 - Manages file operations — initializes a CSV if it doesn't exist, adds new entries, and retrieves transactions between two dates.
 - **add() function:**
 - Prompts the user to enter transaction details and saves them.
 - **plot_transactions() function:**
 - Visualizes incomes and expenses over time using a line plot.
 - **main() function:**
 - Displays a menu to either add transactions, view transactions + summary + plot, or exit the program.
 - **External Imports:**
 - `pandas` for CSV manipulation,
 - `matplotlib` for plotting,
 - `datetime` for date handling,
 - and functions from a custom module `data_entry` to get user input.
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Keyword	One-line Definition
<code>import</code>	Used to bring external modules or custom code into the current script.
<code>from ... import</code>	Imports specific classes, functions, or variables from a module into the current script.
<code>pandas (pd)</code>	A Python library for data manipulation and analysis, especially for structured (tabular) data.
<code>csv</code>	A Python module for reading from and writing to CSV (Comma-Separated Values) files.
<code>datetime</code>	A module that supplies classes for manipulating dates and times.
<code>matplotlib.pyplot (plt)</code>	A library for creating static, animated, and interactive visualizations in Python.
<code>class</code>	A blueprint for creating user-defined objects consisting of attributes and methods.
<code>@classmethod</code>	A decorator to define a method that works with the class itself instead of instances.
<code>try-except</code> block	Structure used for handling exceptions and preventing program crashes.
<code>ValueError</code>	Exception raised when an operation receives an argument of the right type but an inappropriate value.
<code>raise</code>	Command used to trigger an exception manually in Python.
<code>read_csv()</code>	A pandas function to load a CSV file into a DataFrame.
<code>DataFrame</code>	A 2D labeled data structure in pandas, similar to a table or spreadsheet.
<code>to_csv()</code>	A pandas function to save a DataFrame as a CSV file.
<code>open()</code>	A built-in function that opens a file and returns a file object.
<code>DictWriter</code>	A csv class that writes dictionaries into a CSV file.
<code>writerow()</code>	A method that writes a single dictionary row into a CSV file.
<code>input()</code>	Built-in function to take input from the user through the console.

<code>float()</code>	A function that converts a string or number to a floating-point number.
<code>strptime()</code>	A method to convert a date string into a datetime object according to a specified format.
<code>strftime()</code>	A method to convert a datetime object into a string with a specified format.
<code>print()</code>	Built-in function to display output text to the console.
<code>set_index()</code>	A pandas method to assign a DataFrame column as the row index.
<code>resample()</code>	A pandas method to change the frequency of time-series data (e.g., daily, monthly).
<code>reindex()</code>	A pandas method to change the index (row labels) and optionally fill missing values.
<code>figure()</code>	A matplotlib method to create a new figure for plotting.
<code>plot()</code>	A method to plot data points on a graph using matplotlib.
<code>xlabel()</code>	A matplotlib function to label the x-axis of a plot.
<code>ylabel()</code>	A matplotlib function to label the y-axis of a plot.
<code>title()</code>	A matplotlib function to set the title of a plot.
<code>legend()</code>	A matplotlib function to show labels for plotted data.
<code>grid()</code>	A matplotlib function to add grid lines to a plot.
<code>show()</code>	A matplotlib function to display the plot.
<code>loc[]</code>	A pandas method for selecting data based on labels or conditional filtering.
<code>mask</code> (boolean mask)	A condition applied to a DataFrame to filter data based on True/False values.
<code>empty</code> (DataFrame property)	A property to check whether a DataFrame is empty (no rows).
<code>sum()</code>	A function that adds up numerical values.
<code>lower()</code>	A string method that converts all characters to lowercase.
<code>dictionary {}</code>	A data structure that stores key-value pairs (like <code>CATEGORIES</code>).

recursion

A programming technique where a function calls itself until a condition is met.

break

A statement used to immediately exit the nearest enclosing loop.