

# System Overview

Priority	Feature	Functions Involved	Program file	Contents	Input parameter	Return values	Dependencies
Core functionality	Show input mask GUI version	reset	gui_input_main.py	resets program triggered by quit button	None	None	sys
		calculate	gui_input_main.py	calculate value of future investment triggered by calculate button	None	None	formula, tkinter
		read	gui_input_main.py	read file and show graph triggered by read .csv button	None	None	file
		store	gui_input_main.py	creates CSV file with investment data triggered by print.csv button	None	None	none
		table	gui_input_main.py	displays table with investment data triggered by show table button	None	None	sh_table
		plot	gui_input_main.py	plots graph with investment data, triggered by calculate button	None	None	graph
Core functionality	Process user input Terminal interface	print_options	term_input_main.py	Prints a menu with several options and returns the selected option	user input	option	os, default, formula, sh_table, graph, file, sys, items_operations
		edit_parameter	term_input_main.py	edit parameter in dictionary the input list_of_parameters is a list of 5 data sets, 1 for each parameter	user input	None	
		fetch_data	term_input_main.py	# the function extracts the actual data from each of them	list_of_parameters	start_balance, monthly_cont,i nterest,compo und_freq,num_ years	
		get_file_name	term_input_main.py	gets the file name from user and check for plausibility	none	file name	
		read_csv	term_input_main.py	read out .csv file and return lists of annual contribution and future capital for	none	none	none
		calculate	term_input_main.py	triggers the calculation with the input from fetch data display result	none	none	
		default_values	default.py	set dictionary with default values	none	5 data sets	
		print_list_of_pa rameters	items_operations.py	prints a list of the used data	Start balance. Monthly contribution, interest rate in %, compound frequency, number of years	none	
		update_param eter_value	items_operations.py	iterate through the list looking for the parameter	parameter set, data_set_nr	none	none

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Core functionality	Calculate value of a future investment based on the input values: 'initial Investment', Monthly Contribution, Annual interest rate, Compound frequency, Number of years of investment	fetch_data	gui_input_main.py	get data from input form, handle exceptions and make sure that program gets clean data	None	List containing: start_balance, monthly_cont, interest, compound_freq, num_years  Bool False if data incorrect	tkinter
		formula.calculate_capital	formula.py	Calculate value of future investment	Start balance. Monthly contribution, interest rate in %, compound frequency, number of years	future value of investment or overflow	none
Core functionality	Show value of investment and monthly contribution in a table for each year of investment	fetch_data formula.calculate_capital	gui_input_main.py formula.py	as above Calculate value of future investment			tkinter  none
		sh_table.show_table	sh_table.py	construct table with ttk.Treeview show money accrued and total contribution for each year	Start balance. Monthly contribution, interest rate in %, compound frequency, number of years	None	formula tkinter tkinter.ttk
Core functionality	Store value of investment and monthly contribution in a file for each year.	fetch_data formula.calculate_capital	gui_input_main.py formula.py				tkinter  none
		file.store_csv	file.py	create .CSV store money accrued and total contribution for each year	Start balance. Monthly contribution, interest rate in %, compound frequency, number of years	None	formula datetime

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Nice to have	Plot chart with investment value and contribution over time	read() formula.calculate_capital	gui_input_main.py formula.py	as above Calculate value of future investment			tkinter  none
		graph.plot_graph	graph.py	plot graph, 1 each for investment value and contributions	Start balance. Monthly contribution, interest rate in %, compound frequency, number of years	None	matplotlib.pyplot numpy matplotlib.lines formula
Nice to have	Read from previous file , show data in a chart.	file.read_csv	file.py	read file line by line and update 3 lists time, contribution and capital check for inconsistencies	None	lists for contribution and capital	csv datetime matplotlib.pyplot numpy
		graph.plot_data	graph.py	show graph with list data as input	file name, lists for contribution and capital	None	matplotlib.lines formula