

MGMT 675

AI-ASSISTED FINANCIAL ANALYSIS



RICE | BUSINESS
Jones Graduate School of Business

INTRODUCTION

MEET YOUR PROF

- At Rice since 2009, in Jones and in Econ Dept.
 - teach core finance, quantitative investments, investments theory, and python for business research
 - to PhDs, MBAs, and Masters in Data Science students
- Previously at Northwestern, Indiana, Washington Univ. in St. Louis, and Texas A&M. Associate dean at Wash U.
- Former and current editor and associate editor of several journals. Two textbooks (derivatives and PhD asset pricing theory). Materials and info at kerryback.com

COURSE OUTLINE

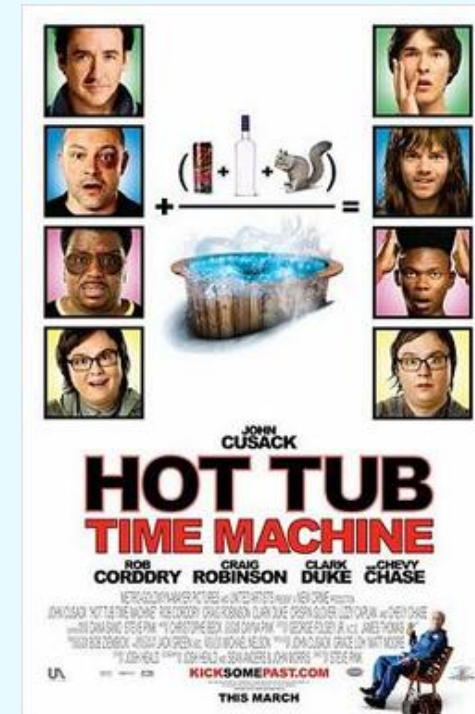
- Weekly assignments: use AI to do something, submit a report of the results
- Seated final exam: use AI to do something, submit a report of the results
- Syllabus, slides, data sets, assignments, links to conversations at mgmt675.kerryback.com
- Submit assignments through Canvas

COURSE TOPICS

1. Simulation
2. Data handling
3. Cost of capital and performance evaluation
4. Visualization
5. Optimal portfolios
6. Autocorrelation and autoregression
7. Machine learning

WHY ARE WE HERE?

LET'S DO SOME TIME TRAVELING





First hand-held calculator, introduced by Texas Instruments in 1972



First financial calculator, introduced by HP in 1973

C11 (L) TOTAL				C1
				25
	A	B	C	D
	ITEM	NO.	UNIT	COST
	-----	----	----	----
	HUCK RAKE	43	12.95	556.85
	BUZZ CUT	15	6.75	101.25
	TOE TONER	250	49.95	12487.50
	EYE SNUFF	2	4.95	9.90

			SUBTOTAL	13155.50
			9.75% TAX	1282.66

			TOTAL	14438.16

VisiCalc, released for Apple II in 1979

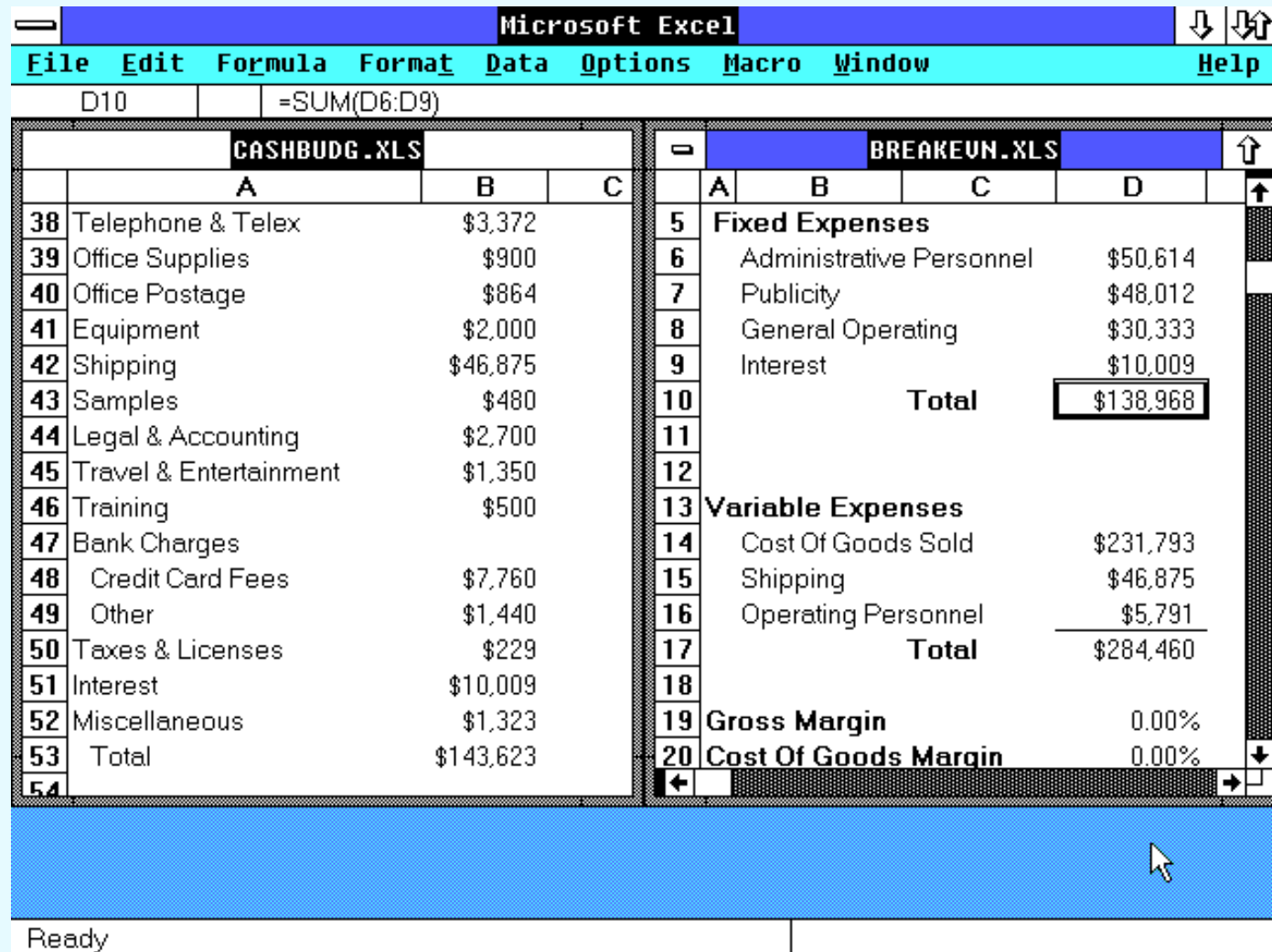
A:A1: 'EMP' MENU

Worksheet Range Copy Move File Print Graph Data System Quit
Global Insert Delete Column Erase Titles Window Status Page Hide

A	A	B	C	D	E	F	G
1	EMP	EMP NAME	DEPTNO	JOB	YEARS	SALARY	BONUS
2	1777	Azibad	4000	Sales	2	40000	10000
3	81964	Brown	6000	Sales	3	45000	10000
4	40370	Burns	6000	Mgr	4	75000	25000
5	50706	Caeser	7000	Mgr	3	65000	25000
6	49692	Curly	3000	Mgr	5	65000	20000
7	34791	Dabarrett	7000	Sales	2	45000	10000
8	84984	Daniels	1000	President	8	150000	100000
9	59937	Dempsey	3000	Sales	3	40000	10000
10	51515	Donovan	3000	Sales	2	30000	5000
11	48338	Fields	4000	Mgr	5	70000	25000
12	91574	Fiklore	1000	Admin	8	35000	---
13	64596	Fine	5000	Mgr	3	75000	25000
14	13729	Green	1000	Mgr	5	90000	25000
15	55957	Hermann	4000	Sales	4	50000	10000
16	31619	Hodgedon	5000	Sales	2	40000	10000
17	1773	Howard	2000	Mgr	3	80000	25000
18	2165	Hugh	1000	Admin	5	30000	---
19	23907	Johnson	1000	VP	1	100000	50000
20	7166	Laflare	2000	Sales	2	35000	5000

DATA.WK3

Lotus 1-2-3, released for IBM PC in 1983



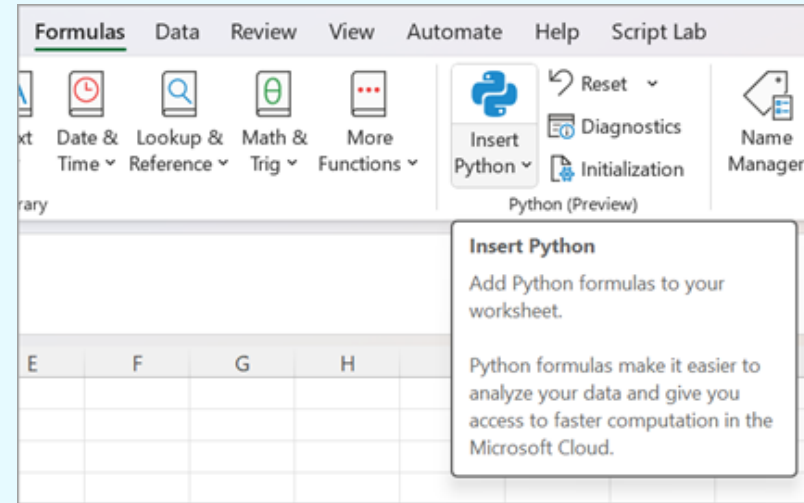
Microsoft Excel, released for Windows in 1987

TODAY'S TOOLS

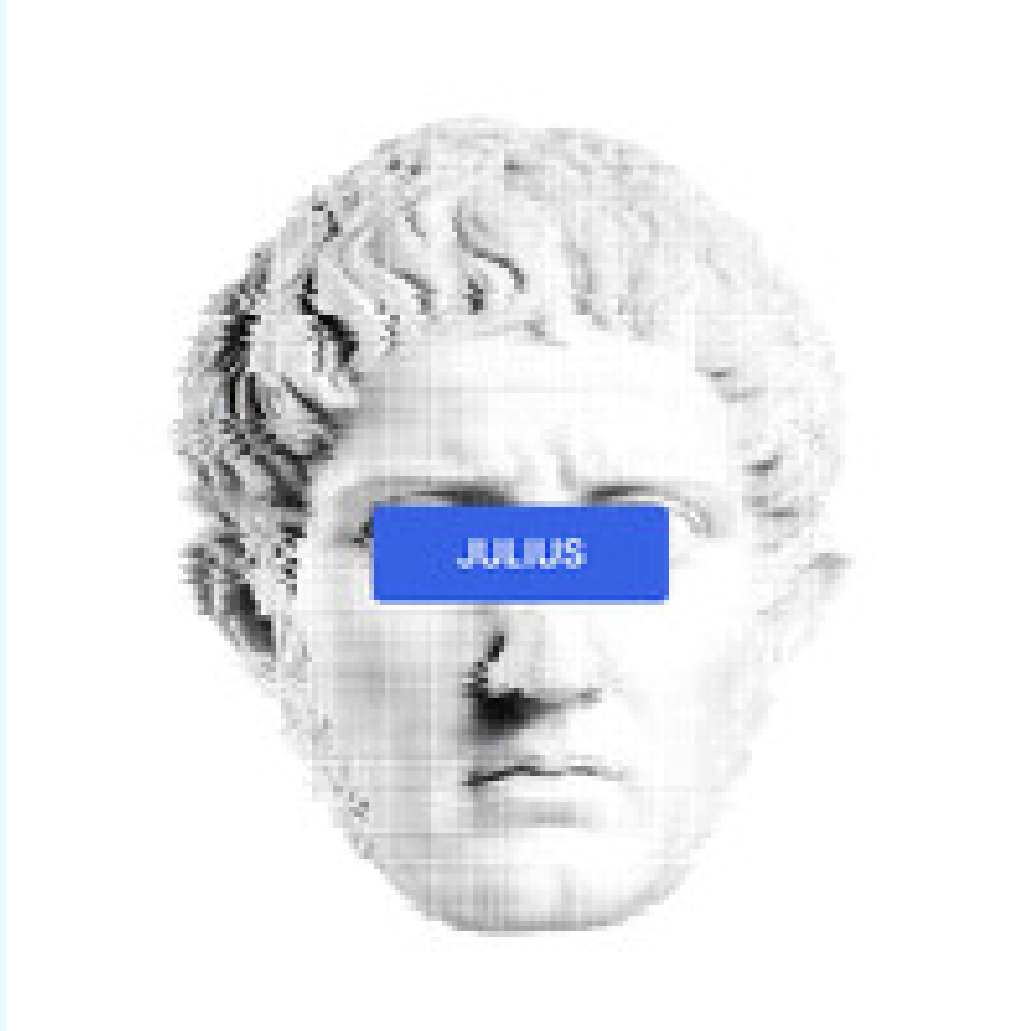


- Will Excel survive?
- Will Excel retain its dominance?

MAYBE ...



THE BEST WE HAVE TODAY (I THINK)



WHAT JULIUS DOES

- Python interpreter and proprietary LLM
- Julius executes and debugs code
- Provides links to images, tables, datasets it creates
- Provides download of conversation (and code) as Jupyter notebook or Word doc
- Allows us to upload our own data
- Can get some online data
- Can install any python libraries not pre-installed

GET A JULIUS ACCOUNT

- Free account has very strict message limit
- Basic allows 250 messages per month. Maybe enough?
- Essential allows unlimited messages.
- 50% academic discount. Sign up using your Rice email and enter the promo code STUDY2024.

WARM-UP

- Ask Julius to plot the function $y = x^2$.
- Ask Julius to plot the payoff diagram of a call option with a strike of 100.
- Ask Julius to use pandas datareader to get the 10-year Treasury yield from FRED, plot it, and save as a jpeg.
- Ask Julius to use yfinance to get AAPL's adjusted closing price from Yahoo Finance, plot it, and save as a jpeg.