



UM Datathon

Problem Statement and Dataset
Briefing



Agenda

- 1 Business Context
- 2 What is provided?
- 3 What is required?
- 4 Tips for Students
- 5 Good to have!



Business Context

Cash Flow Challenge

- The business operates **multiple legal entities** across regions with subscription revenues and routine vendor payments
- Cash **timing varies** due to billing cycles, customer payment behaviour, and periodic operational events.
- Finance team need reliable **short-term visibility** of net cash and ending balances, along with **simple flags for irregular transactions** they should investigate.



What is provided?

The Dataset

- A masked Dataset of cashflow **for period 1-10 year 2025**
- Data dictionary: **Explanation** of what each **column means.**



What is required?

Time Series Forecasting (1/3)

- **Time Series Forecasting**
- How would you build a **1-month-ahead weekly cash flow** forecast, selecting at least two cash flow categories.
Explain:
 - Model choice and assumptions
 - Key drivers behind the forecasted trend
 - (*Optional but highly recommended*) *How would you extend this to a 6-month ahead weekly forecast?*
- How would you:
 - Compare forecasted values against actual cash flows
 - Evaluate forecast accuracy using appropriate metrics
 - Explain forecast performance and limitations to finance stakeholders?



What is required?

Time Series Forecasting (1/3)

Time Series Forecasting

- Near-term cash flow (short-term liquidity focus)
 - Based on the weekly cash flow forecast for the next one month, what is the **expected net cash position**, and which cash flow categories are **the primary drivers of short-term liquidity risk or stability**?
- Long-term cash flow (sustainability and planning focus)
 - Based on the six-month weekly cash flow forecast and its accuracy versus actuals, how **sustainable** is the company's cash position over the medium term, and what **structural cash flow patterns** should finance leadership monitor or act on.



What is required?

Anomaly Detection (2/3)

Impact and Communication (3/3)

Anomaly detection

- Which transactions or weeks **show unusual inflows/outflows** (e.g. duplicates, spikes/drops)?

Impact and Communication

- How **can finance teams use your dashboard/report to monitor** weekly cash and quickly triage irregularities?



Tip for students

- **Direction of cash:** Check the sign of “Amount in doc. curr.” Negative usually means cash out; positive means cash in. Validate with Type/PK if unsure.
- **Reconciliation keys:** Use DocumentNo, Clrng doc., Reference, and Assignment to tie payments to invoices and bank references.
- **Currency handling:** Always keep Curr., LCurr, Rate (USD), and Amount in USD together to avoid mistakes when aggregating across entities.
- **Cashflow buckets:** Category and Category Index make it easy to create an Operating/Investing/Financing view—just map your business categories accordingly.



Good to have!

Use our brand colours

- Please use the **AZ digital branding colours** to make your visuals more appealing, provided in next slide

Power BI as suggested tool

- **Power BI is recommended**; other tools are accepted (e.g., Python).
- **Clearly list** the tools and libraries used.



Brand colours

We use the full range of the vibrant AstraZeneca colour palette. It is important to follow the rules for primary, accent and interaction colour as this ensures consistency for the users.

Primary colour



Mulberry

#830051

42, 100, 40, 23

Accent colour



Lime Green

#C4D600

197, 215, 0, 1.00

Interaction colour



Magenta

#D0006F

210, 0, 113, 1.00

Supporting colours



Gold

#F0AB00

240, 171, 0, 1.00



Graphite

#3C4242

62, 67, 67, 1.00



Navy

#003865

0, 57, 102, 1.00



Light Blue

#68D2DF

105, 210, 222, 1.00



Purple

#3C1053

62, 16, 85, 1.00



Platinum

#9DB0AC

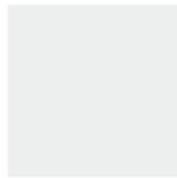
159, 176, 171, 1.00



Colour tints

Throughout astrazeneca.com we use tints of the brand colours. These can be used within iconography, or as background panels of components.

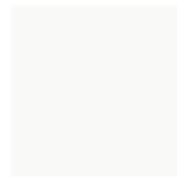
Background panel tints



Platinum | 20

#EBEFEE

235, 240, 238, 1.00



Off-White

#F8F8F8

248, 248, 248, 1.00



Light Grey

#D2D2D2

248, 248, 248, 1.00

Supporting tints



Magenta

#D0006F

210, 0, 113, 1.00



80

#DA338C

217, 51, 141, 1.00



60

#E366A9

227, 51, 141, 1.00



40

#EC99C5

238, 153, 197, 1.00



20

#F6CCE2

245, 204, 227, 1.00



Mulberry

#830051

42, 100, 40, 23



80

#9A3374

153, 51, 115, 1.00



60

#B36697

179, 102, 151, 1.00



40

#CC99B9

204, 153, 187, 1.00



20

#E6CCDC



Lime Green

#C4D600

197, 215, 0, 1.00



80

#D0DE33

210, 222, 51, 1.00



60

#DCE766

220, 233, 102, 1.00



40

#E7EF99

233, 240, 153, 1.00



20

#F3F7CC

243, 248, 204, 1.00



Gold

#F0AB00

240, 171, 0, 1.00



80

#F3BC33

243, 189, 51, 1.00



60

#F6CD66

245, 204, 102, 1.00



40

#F9DD99

250, 222, 153, 1.00



20

#FCEECC

253, 238, 204, 1.00





Thank you.



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