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TRANSACTION ANALYSIS

(TESTING INTERNAL CONTROLS)

Advanced Cases in Assurance Services (ACCTG 521)

Class 6 | MPAcc class of 2026

Agenda

Review

Transaction Analytics

Lab: P-Card Case

- Review and Agenda
- Discussion Team Assignments
- Task 4 and Discussion
- Task 5 and Discussion

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Audit Risk Model

Audit Risk: risk that the auditor expresses an inappropriate audit opinion when the financial statements are materially misstated

$$AR = \underbrace{IR \times CR}_{RMM} \times DR$$

- **Inherent Risk**: risk that a management assertion is materially misstated (before considering internal controls)
- **Control Risk**: risk that internal controls fail to detect a misstatement
- **Detection Risk**: risk that auditors fail to detect a misstatement

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Market response to restating firm

- Average abnormal returns below negative 9%

- Why might investors perceive a restatement as bad news?

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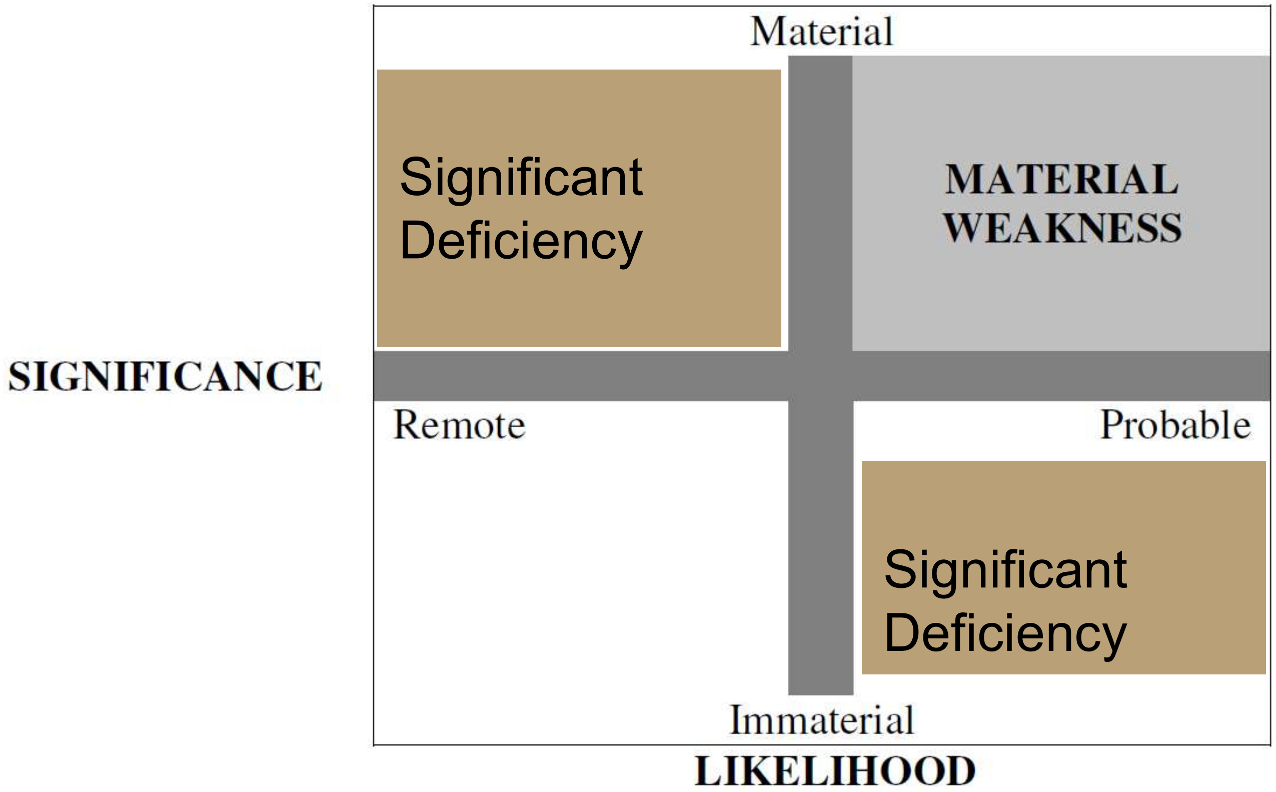
What are material weaknesses and significant deficiencies?



- Material weaknesses need to be disclosed in the 10-K under Section 302 (and 404)
- Significant deficiencies do not need to be publicly disclosed, but must be disclosed to the audit committee

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Disclosure requirements

Annual report

Required

Section 302

Section 404a

Section 404b

Management Disclosure

Management Document and Test

Auditor Opinion

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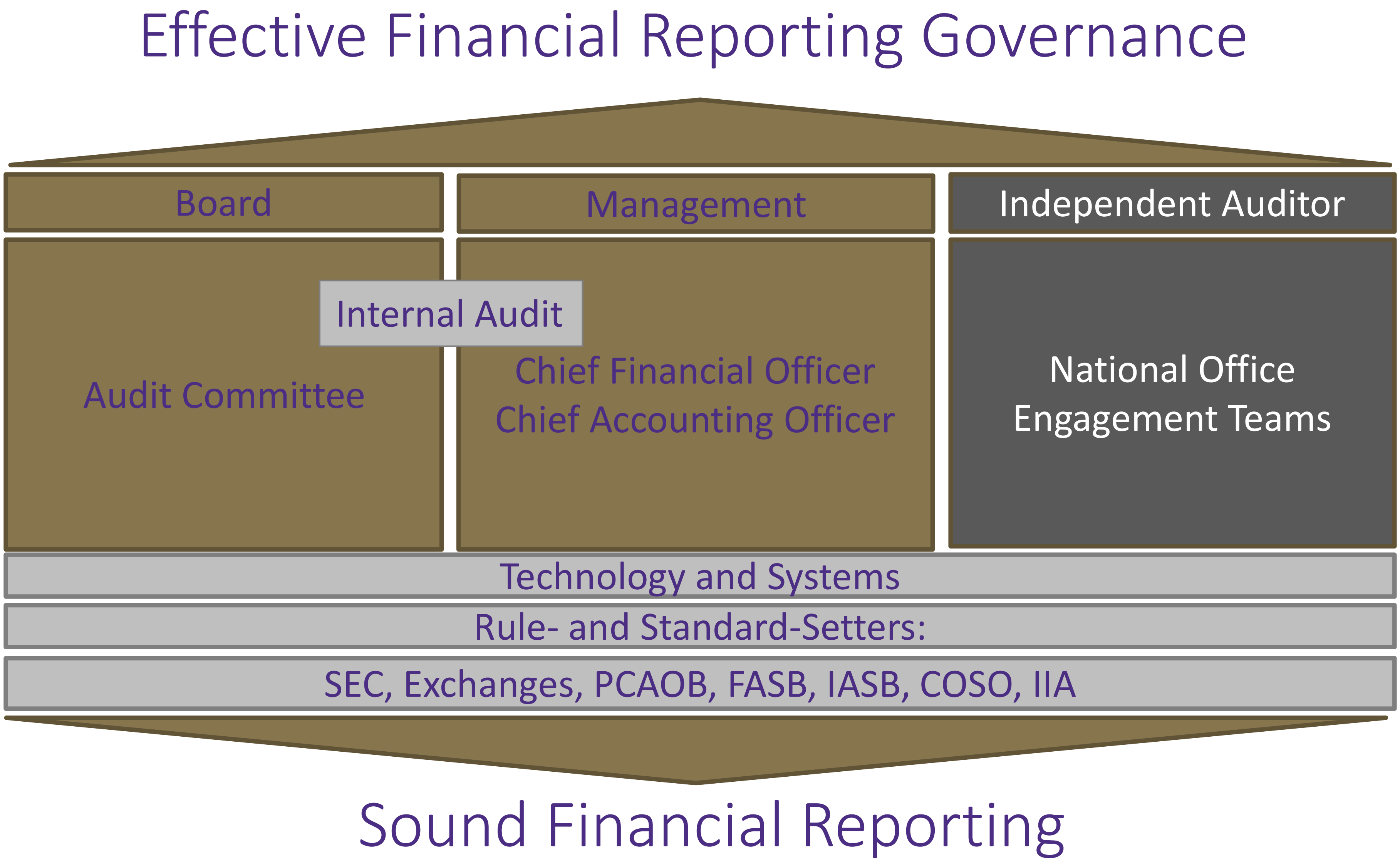
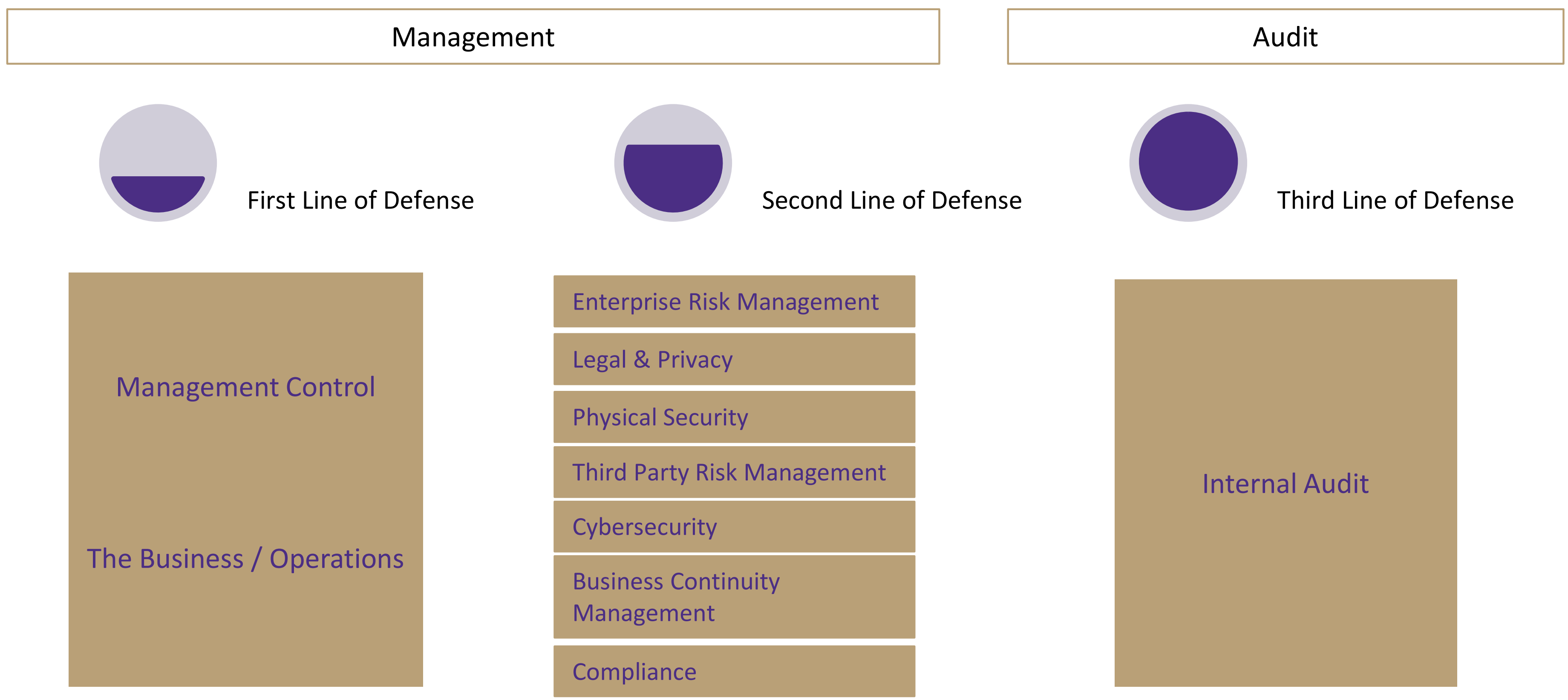
Why is transaction analysis important?


Effective Financial Reporting Governance
Board
Management
Independent Auditor
Internal Audit
Audit Committee
Chief Financial Officer
Chief Accounting Officer
National Office
Engagement Teams
Technology and Systems
Rule- and Standard-Setters:
SEC, Exchanges, PCAOB, FASB, IASB, COSO, IIA
Sound Financial Reporting


Management
Audit
First Line of Defense
Second Line of Defense
Third Line of Defense
Management Control
The Business / Operations
Enterprise Risk Management
Legal & Privacy
Physical Security
Third Party Risk Management
Cybersecurity
Business Continuity Management
Compliance
Internal Audit

Transaction analytics

Why is analyzing transaction data important:

- Central to both the **external audit** function and **internal audit** function.
- Transaction analysis can also be used by **management** to assess operational decisions.

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Transaction analytics

- External auditors provide opinions a company’s financial statements are **presented fairly**, in all material respects, in accordance with financial reporting framework (such as GAAP).
  - External auditors can also provide advisory services to help the company become more financially secure/agile, among other areas.
- Internal auditors ensure that company policies and procedures are followed and that the company is financially efficient.

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Transaction analytics

- Internal auditors ensure that company **policies** and **procedures** are followed and that the company is financially efficient.
- **Better financial reporting governance leads to better quality financial reporting**.
  - One potential avenue is from detecting and preventing fraud.
  - **Transaction analytics** for fraud prevention and detection is seen as a major step **towards efficiently reducing fraud**.

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Team	Risk	Control
1	Unauthorized cardholder	Make cardholder always have ID when purchasing
2	Splitting purchases	Look for similar purchase amounts on the same day from same company
3	P-Card purchases in prohibited categories	Test how many p card transactions are in each category
4	Cash credit/Cash advance	Generate withdrawal receipts at ATMs
5	Purchases at gas stations	Have a system flag purchases at gas stations
6	Can spend an abundant amount of money	Credit limit and spending limit
7	Not enough evidence to prove policy violation	Require receipts to be submitted with most/every purchase
8	OSU Gets charged too much for purchase	Require user to keep receipts
9	Pay Oklahoma sales tax	Check location of purchases
10	Personal purchases on P-Card	Review receipts/approve purchases

P-Card Case Overview

Task 1: Overview (Discussed Earlier)

Task 2: Describing Data (Skip – work into Task 4)

Task 3: ETL Process (Skip – optional see workflow)

Task 4: Descriptive Data Analysis (24Qs)

Task 5: Control tests (7 tests)

Task 6: Prohibited Transactions Tests (Word searches)

Task 7: Forensic Audit (Multiple ledger-level tests)

Real-Time Analysis 07-09, 2025 and memo write-up (Individual Deliverable -- Thursday)

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Control Test Assignments

Discussion Team	Agency Name	Agency Number	Calendar_Year	Sum_Amount	Count
1	OKLAHOMA STATE UNIVERSITY	1000	2010	10069808.98	22653
2	OKLAHOMA STATE UNIVERSITY	1000	2011	44939177.45	116188
3	OKLAHOMA STATE UNIVERSITY	1000	2012	41568372.2	117711
4	OKLAHOMA STATE UNIVERSITY	1000	2013	34331217.29	116595
5	OKLAHOMA STATE UNIVERSITY	1000	2014	33504148.34	116031
6	UNIVERSITY OF OKLAHOMA	76000	2010	33982135.44	83210
7	UNIVERSITY OF OKLAHOMA	76000	2011	38380465.59	97547
8	UNIVERSITY OF OKLAHOMA	76000	2012	34736171.04	90434
9	UNIVERSITY OF OKLAHOMA	76000	2013	28185725.01	76118
10	UNIVERSITY OF OKLAHOMA	76000	2014	26021689.11	77321

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Set up

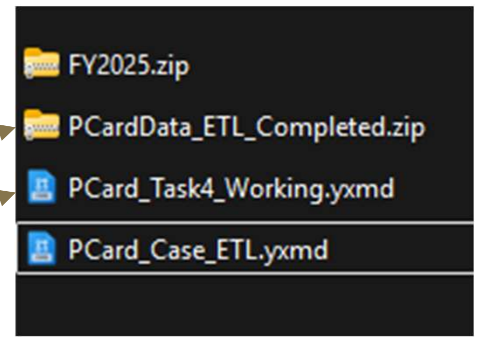
cd to datasets.io folder and run git pull

New files Pcard_V2

Copy and paste to your /my_work/ folder

Unzip this file

Use this file



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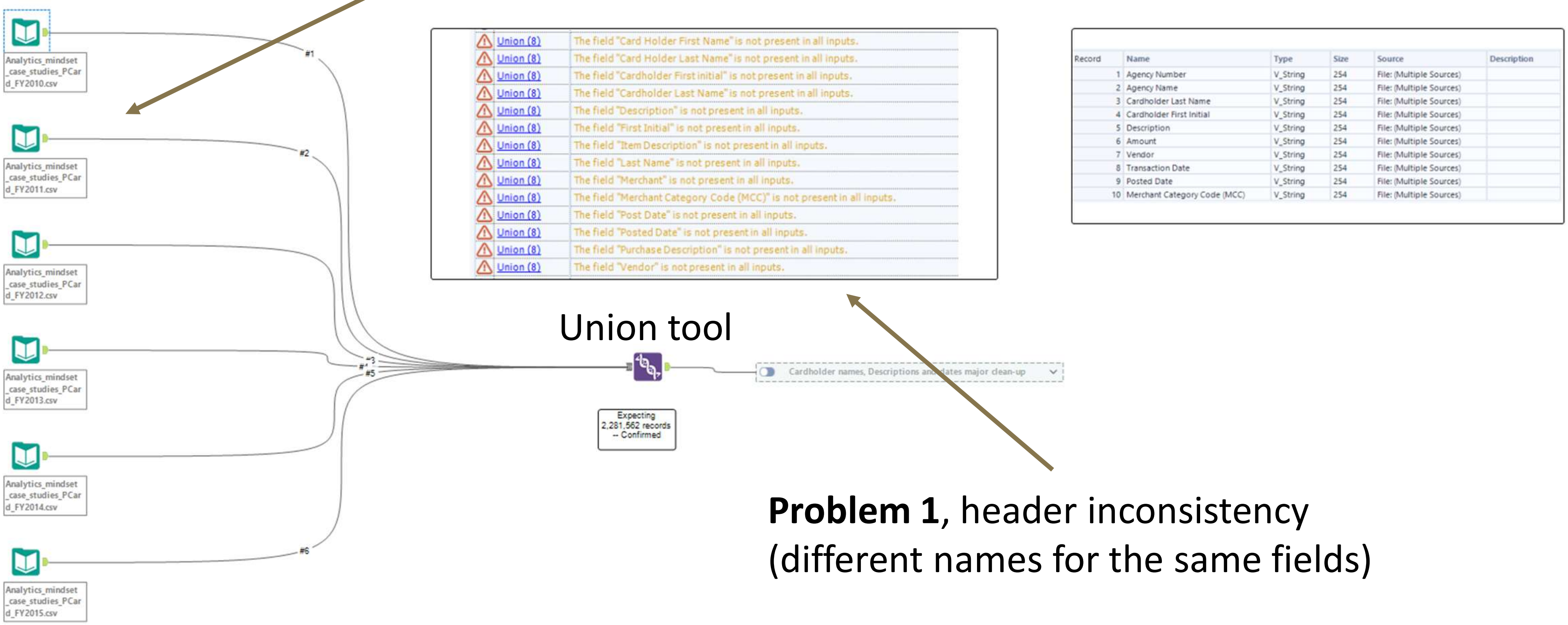
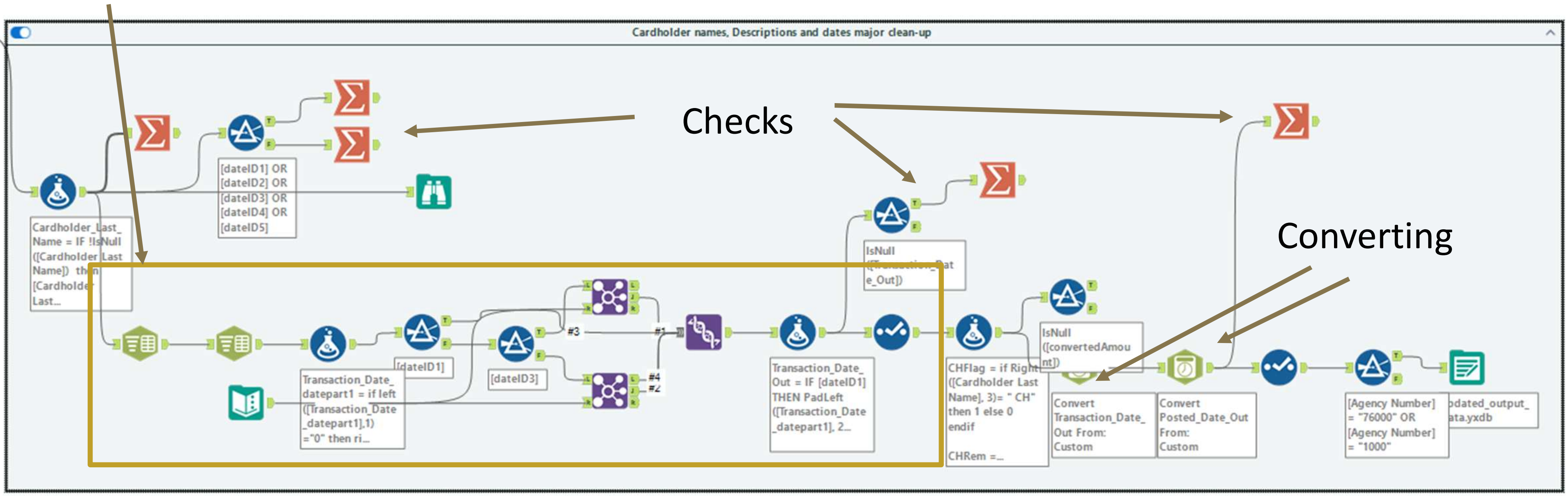
Input the original 6 files

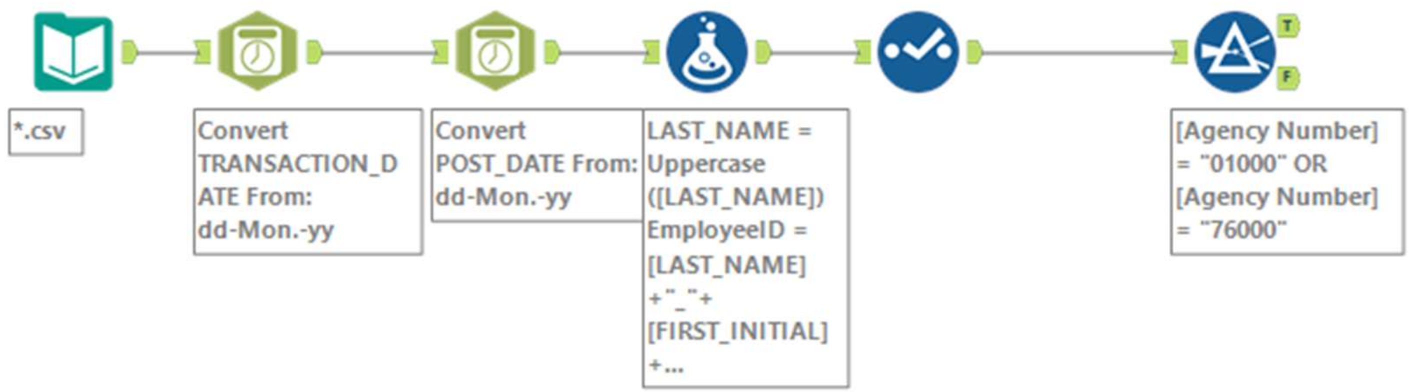


Problem 1, header inconsistency (different names for the same fields)

Problem 2, Date format inconsistencies:
dd-Mon.-yy (01-Jan-14)
d/M/yyyy (1/1/14)
dd.MM.yyyy HH:mm:ss (01.01.2014 00:00:00)
dd/MM/yyyy H:mm (01/01/2014 0:00)
d/M/yyyy H:mm (1/1/2014 0:00)
Solution



Some good news: Real Time 2025 files are formatted consistently!



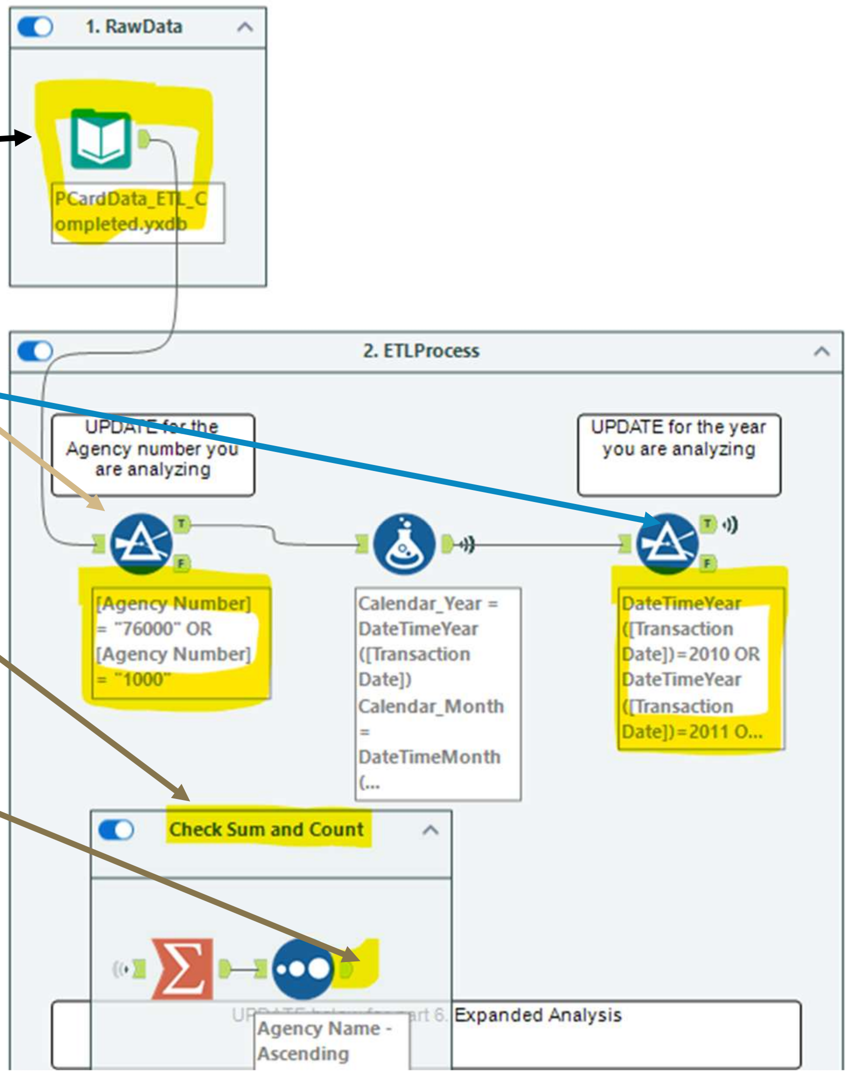
Task 4 Set up

Import unzipped data

Update Filter 1 to your Agency#

Update Year in the second filter

Run workflow with “Check Sum and Count” active and check your output matches mine.



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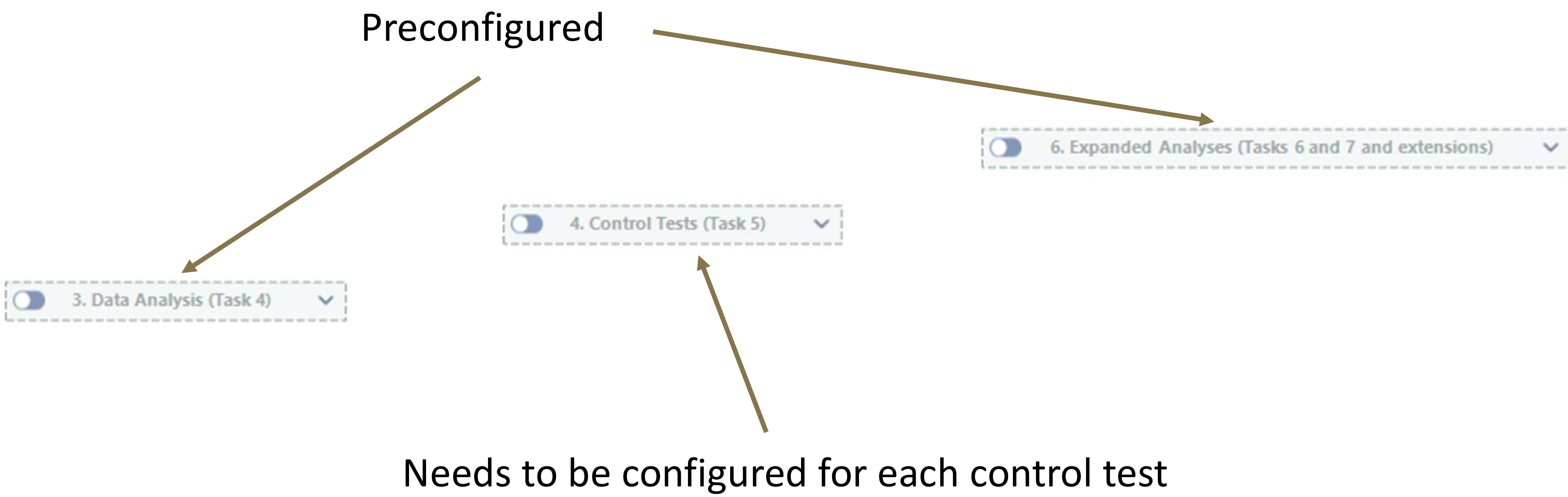
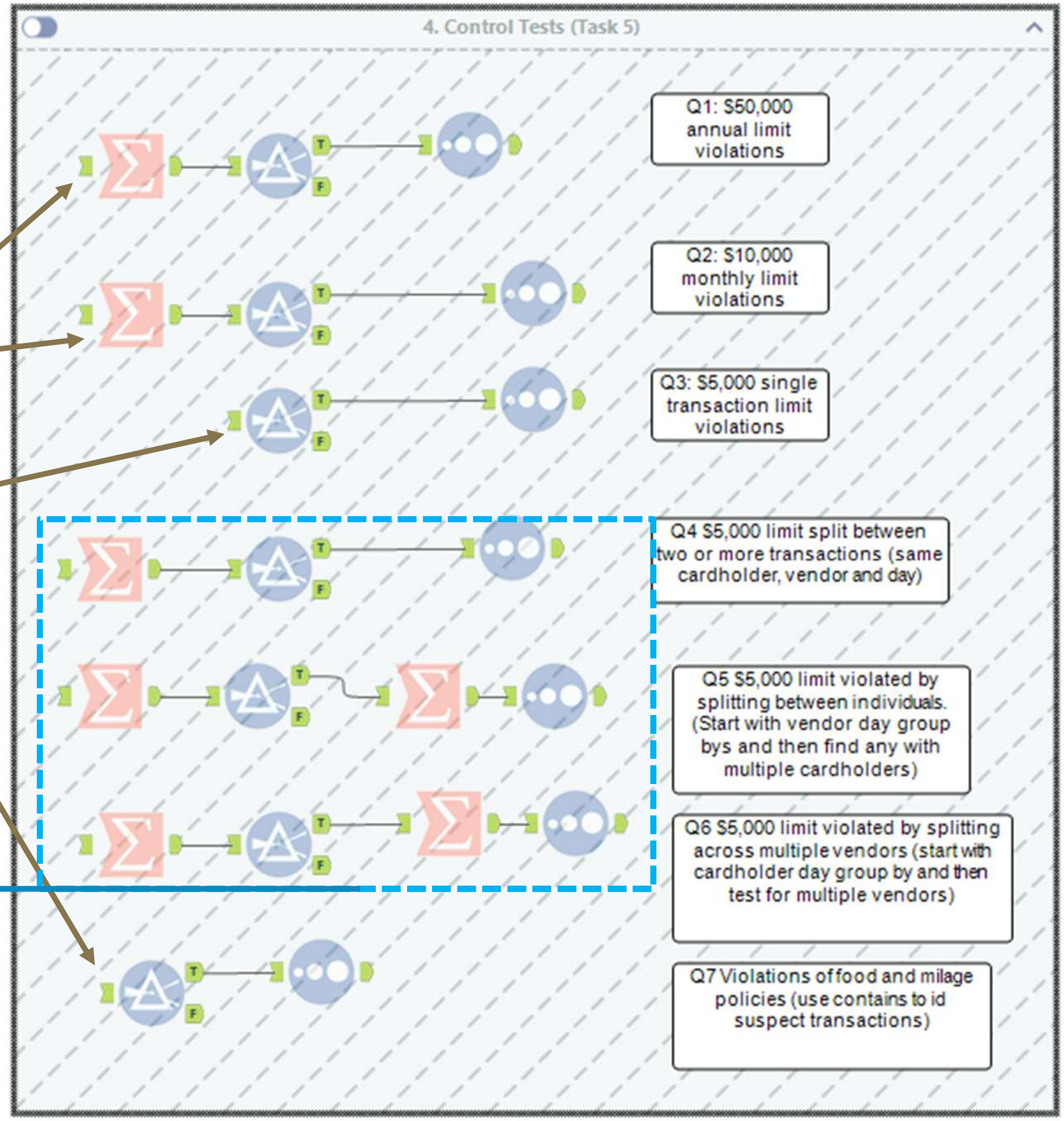

Preconfigured
6. Expanded Analyses (Tasks 6 and 7 and extensions)
4. Control Tests (Task 5)
3. Data Analysis (Task 4)
Needs to be configured for each control test

Control tests required are either:

1. Summarize the data to find an aggregate (summed) amount (e.g., spending limits) followed by filters and sorts
2. Flagging individual transactions by filtering data and then sorting by $ amount.



Trickier but same process just in multiple steps

Task 4 & 5 Discussion

1. Run the analysis, use Task 4 output:
    1. To help you understand the data and types of transactions being made on the PCard.
    2. From the 24 question outputs, highlight the most interesting 1-3 of the outputs and be prepared to talk about them.
2. Configure Task 5, internal controls tests:
    1. Run the workflow, identify and be prepared to discuss the potential violations using the output.
3. Each Team will present their findings
    1. Approx 2-3mins starting @ 2:50pm.

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Agenda for next class

Brief Review

Lab: P-Card Case

- Task 6 & 7 and Discussion
- Real Time ETL
- Real Time Analysis
- Memo Deliverable (Individual)

Thank you!