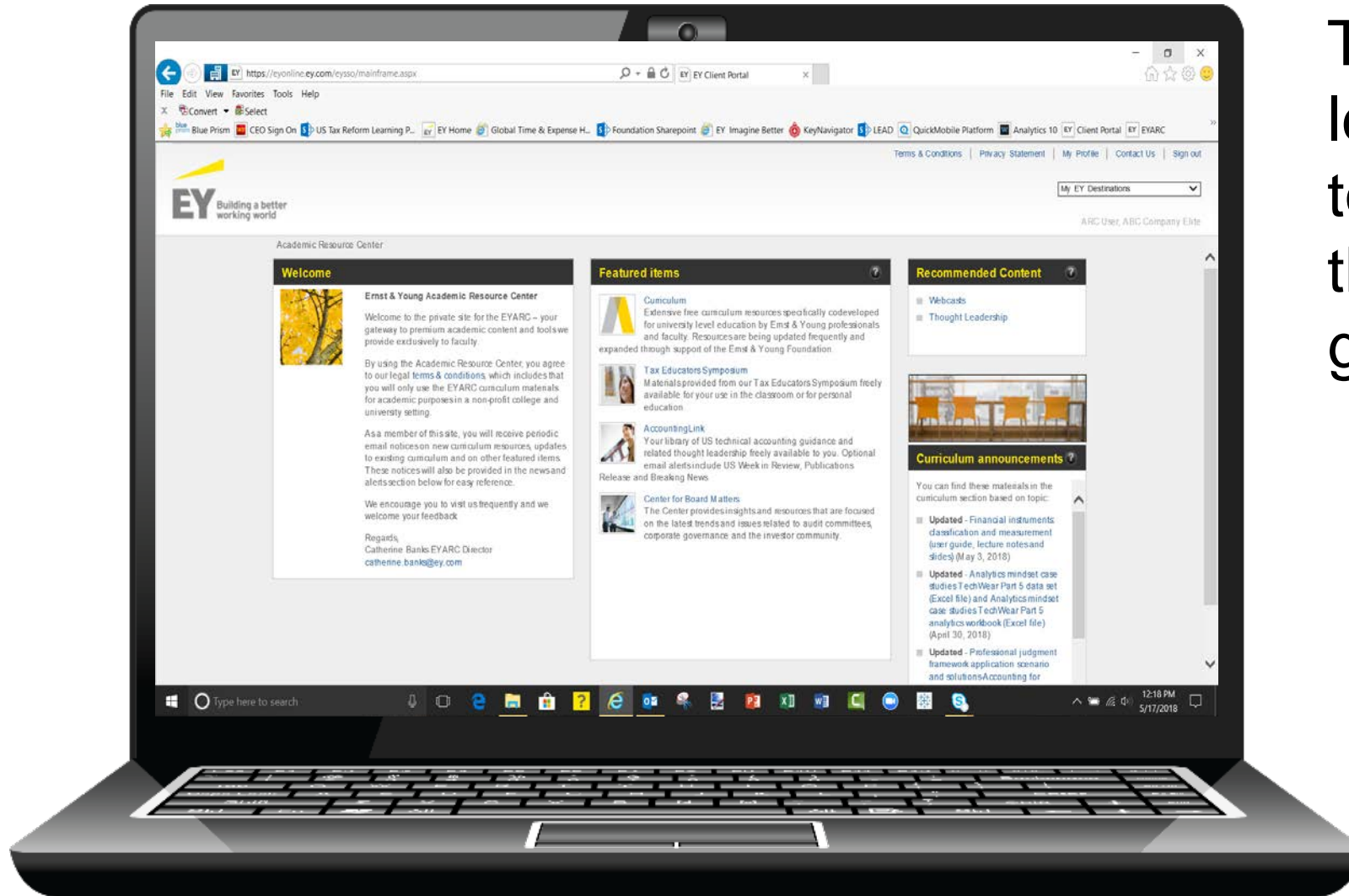


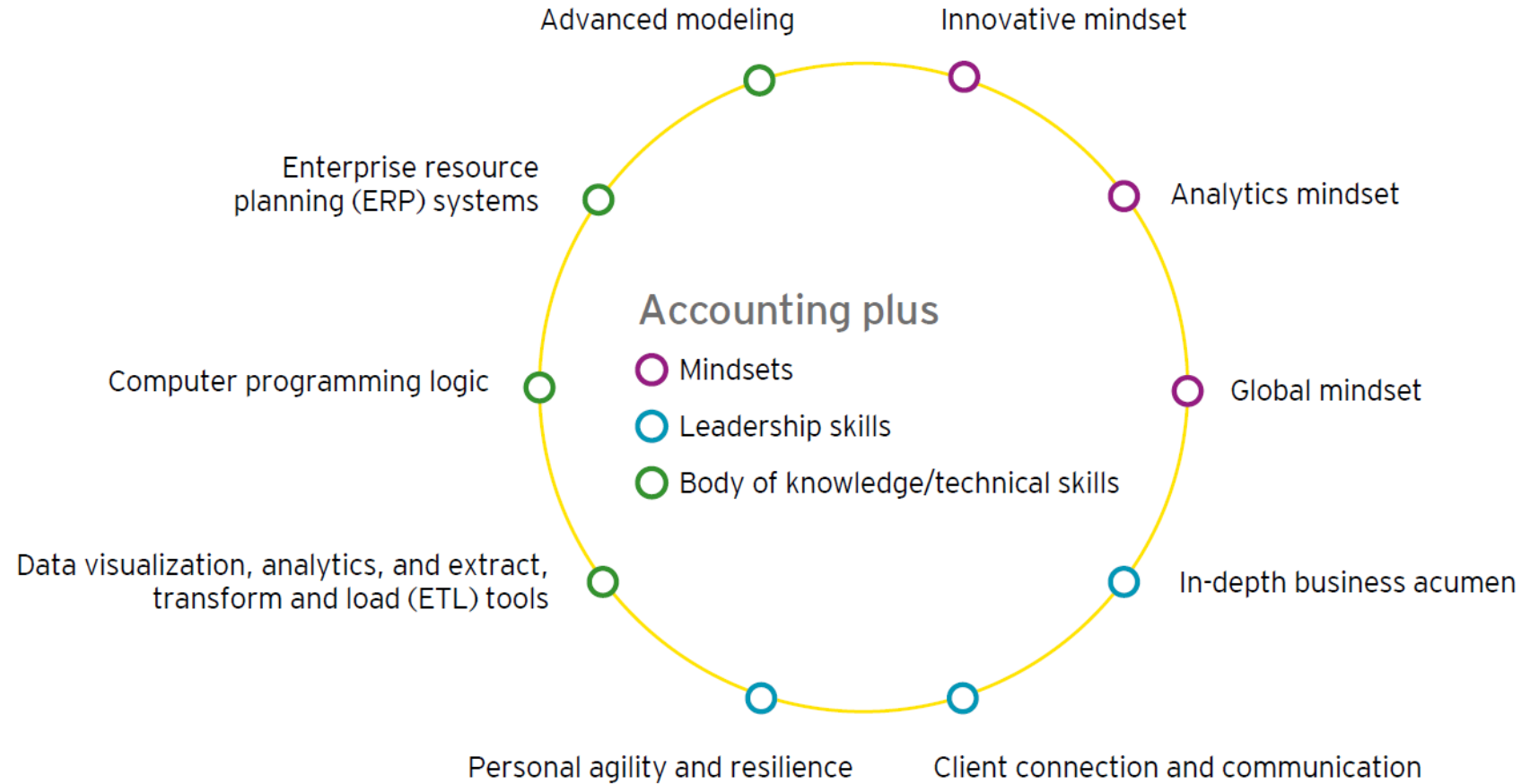
EY Academic Resource Center – mission



To provide free, leading-edge resources to prepare students for the fast-changing, global marketplace



Innovation



What skills and mindsets are needed for the Accountant of the Future?

Analytics

Global



Analytics mindset



Ernst & Young
FOUNDATION[™]
Academic Resource Center

Analytics mindset

An analytics mindset is the ability to:

- ▶ Ask the right questions.
- ▶ Extract, transform and load relevant data (i.e., the ETL process).
- ▶ Apply appropriate data analytics techniques.
- ▶ Interpret and share the results with stakeholders.



Analytics mindset curriculum offerings

- ▶ Introduction to the analytics mindset: Competency framework, lecture and slides
- ▶ Introduction to data visualization: Lecture and slides
- ▶ EYARC Colloquium presentations
- ▶ Case studies (master case study guide available):
 - ▶ User guide, case, solutions, data sets, analytic workbooks, how to videos
 - ▶ All cases focus on the development of the analytics mindset, but to different degrees and emphasis on detailed competencies
 - ▶ Many ways to modify the cases to shorten or focus on select learning objectives and provide coverage in any core accounting course



Analytics mindset competency framework

Ask the right questions

Understand and define the objective of the relevant stakeholders

Understand the business context and the problem if one does, or could, exist

Develop an expectation of what you expect to see before analyzing your data, if appropriate

Recognize that questions are iterative and answers may lead to more questions, and judgment is needed to determine if deeper analysis is warranted

Analytics mindset competency framework

Extract, transform and load relevant data (ETL process)

Understand data characteristics and their relevance	▶ Variety – financial, customer, social media, video, voice, text, machine data, and other structured and unstructured
	▶ Volume – general size parameters and implications
	▶ Velocity – frequency of data updates and implications
	▶ Veracity – trustworthiness of sources
Understand the flow of data in accounting information systems	▶ Types of accounting information systems <ul style="list-style-type: none">– Size– Real-world application
	▶ Modules <ul style="list-style-type: none">– Purpose– Relationships between modules
	▶ Capabilities and limitations
	▶ Routine and non-routine flow
	▶ Who generates and oversees the data and in what capacity
Capture data	▶ Extractions <ul style="list-style-type: none">– What to ask for– How to ask– In what format<ul style="list-style-type: none">▶ AICPA data standards
	▶ Transformation (data cleansing) – before and after loading
	▶ Loading, including knowing which tool the data should be loaded into for the most efficient and effective analysis
	▶ Maintaining data integrity (data validation)
	▶ Automation

Analytics mindset competency framework

Apply appropriate data analytic techniques

<p>Understand the purpose of different types of data analytics techniques and how to determine which techniques are most appropriate for the objectives of your analysis (objectives might include a need to prove or disprove an expectation, if one was developed)</p>	<ul style="list-style-type: none"> ▶ Master <ul style="list-style-type: none"> – Ratio – Sorting – Aggregation – Trends – Comparison – Forecasting – Basic descriptive statistics (mean, standard deviation, maximum and minimum, quartiles) – Querying 	<ul style="list-style-type: none"> ▶ Working knowledge <ul style="list-style-type: none"> – Cluster analysis – Inferential statistics (T-statistics, P-values) – Correlation analysis – Regression 	<ul style="list-style-type: none"> ▶ Awareness <ul style="list-style-type: none"> – Artificial intelligence – Machine learning – Cognitive computing – Neural networks – Data mining – Other emerging technologies
<p>Gain familiarity with analytics tools</p>	<ul style="list-style-type: none"> ▶ Master <ul style="list-style-type: none"> – Excel – Basic database (Access) – Visualization (Tableau, Spotfire, Qlik, Microsoft BI) 	<ul style="list-style-type: none"> ▶ Working knowledge <ul style="list-style-type: none"> – Querying languages (SQL) – Career-path specific <ul style="list-style-type: none"> ▶ Audit – ACL, IDEA, TeamMate ▶ Tax ▶ Managerial ▶ Forensic 	<ul style="list-style-type: none"> ▶ Awareness <ul style="list-style-type: none"> – Programming languages (VBA, Python, Perl, Java, PHP) – Statistics (R, SAS, SPSS) – Database tools (SAP, Oracle, Microsoft) – SSIS packages

Analytics mindset competency framework

Interpret and share the results with stakeholders

Interpret results of your analysis appropriately, based on your question and expectations, if appropriate

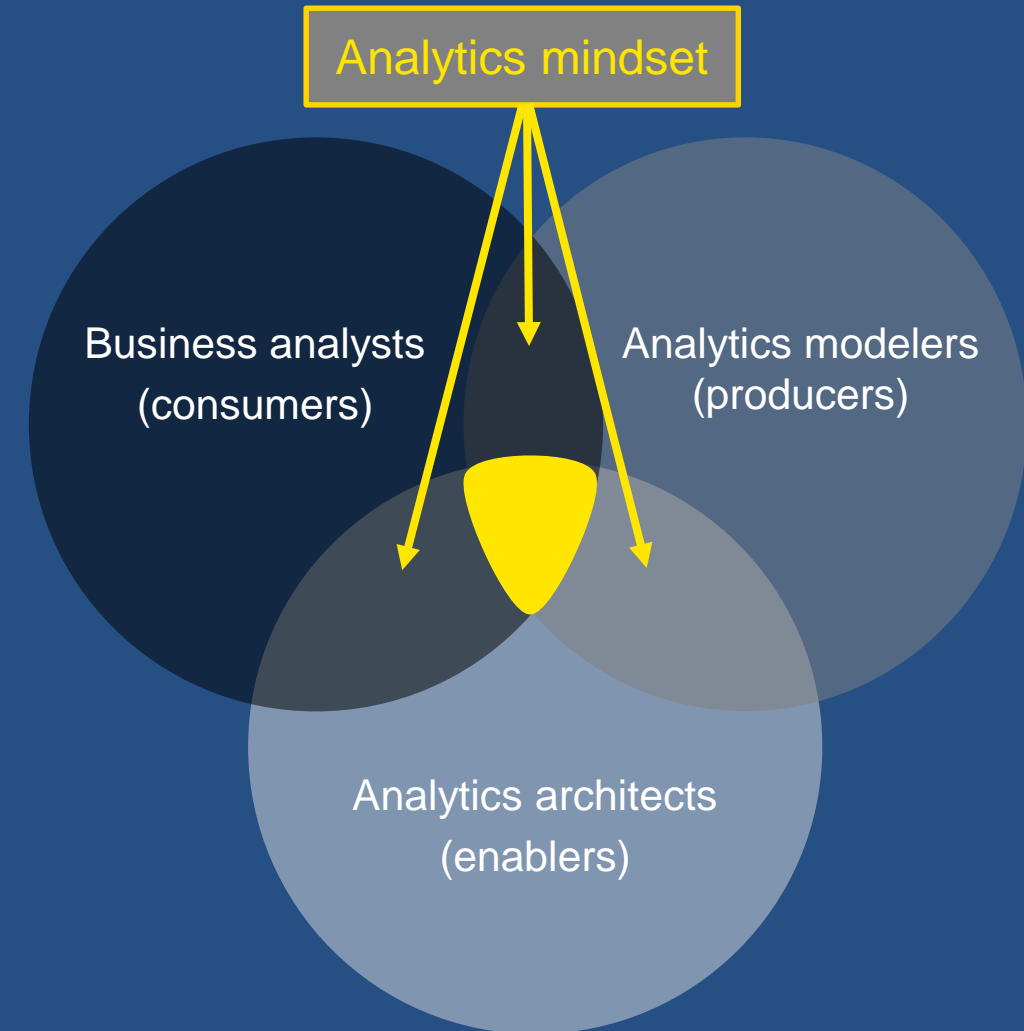
Summarize results from your analysis in a manner conducive to and compelling for your stakeholder

Apply appropriate visualization design techniques

Analytics mindset – lecture material

Introduction to the analytics mindset

- ▶ Introduction
- ▶ Definition of the analytics mindset
- ▶ Overview of big data and analytics
- ▶ The importance of data and analytics in business
- ▶ Ask the right questions
- ▶ Extract, transform and load relevant data (i.e., the ETL process)
- ▶ Apply appropriate data analytics techniques
- ▶ Interpret and share the results with stakeholders



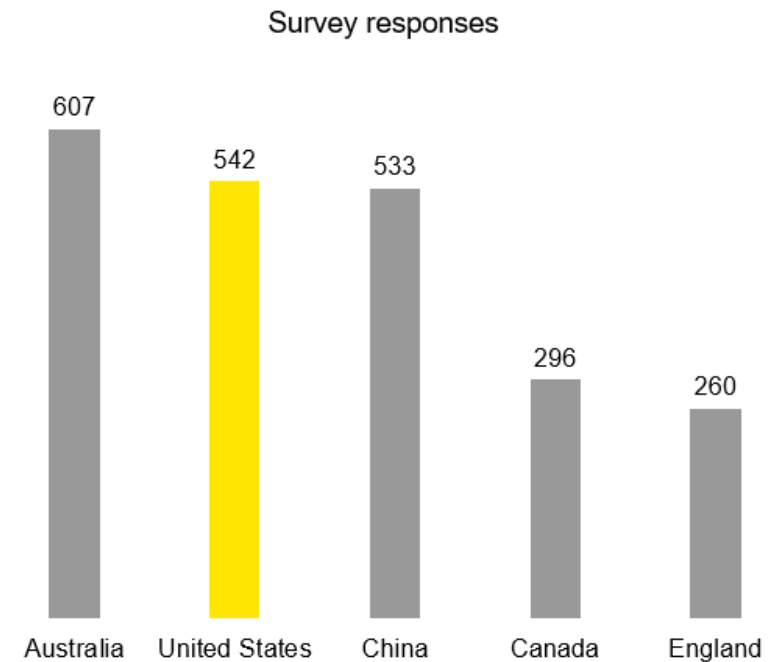
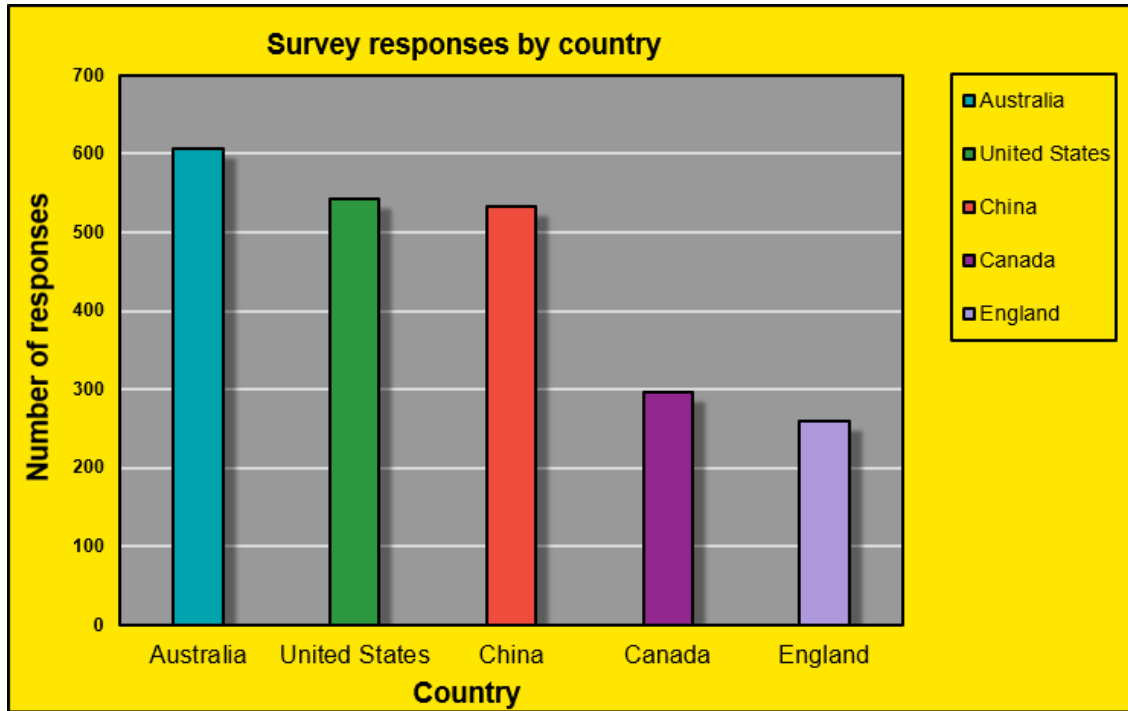
Analytics mindset – lecture material

Introduction to data visualization

- ▶ Introduction
 - ▶ Types of data visualization: exploratory and explanatory
 - ▶ Visualization design:
 - ▶ Design principles (Gestalt and Tufte)
 - ▶ Pre-attentive attributes:
 - ▶ Emphasis
 - ▶ Quantity
 - ▶ Color
 - ▶ Choosing the right chart
 - ▶ Visualization viewing patterns on different screens
 - ▶ Storytelling:
 - ▶ Narrative framework for data stories
 - ▶ Author-driven approach versus reader-driven approach
 - ▶ Understanding your audience
 - ▶ Conclusion
-

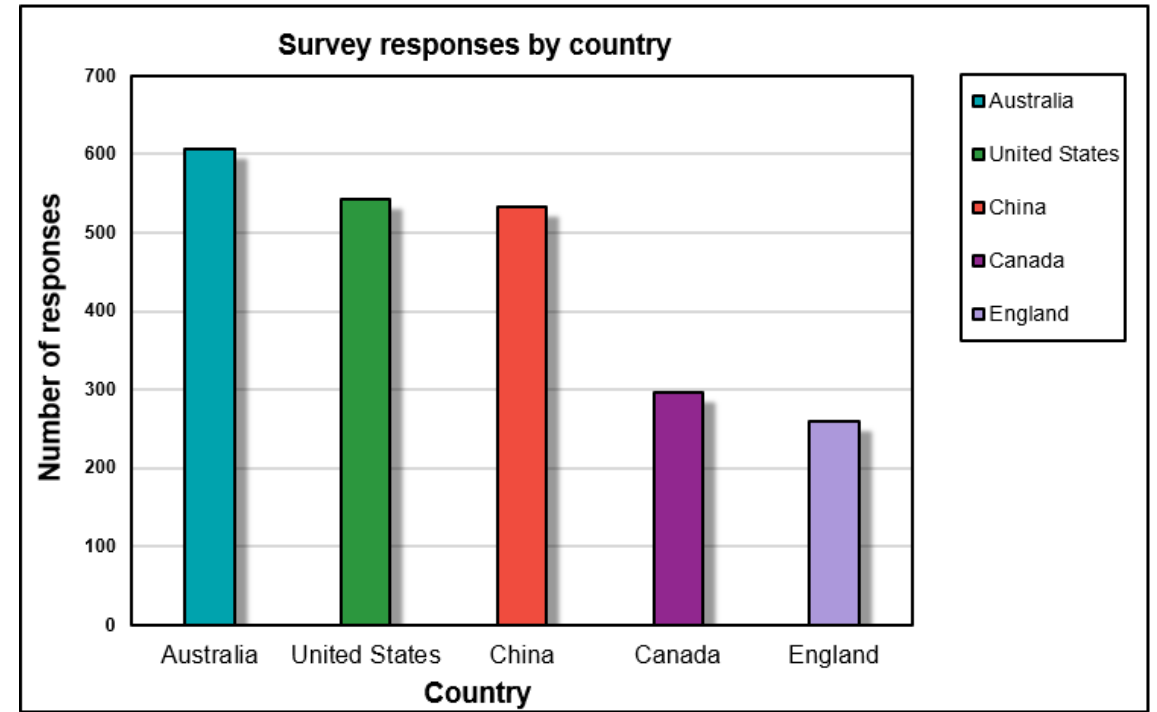
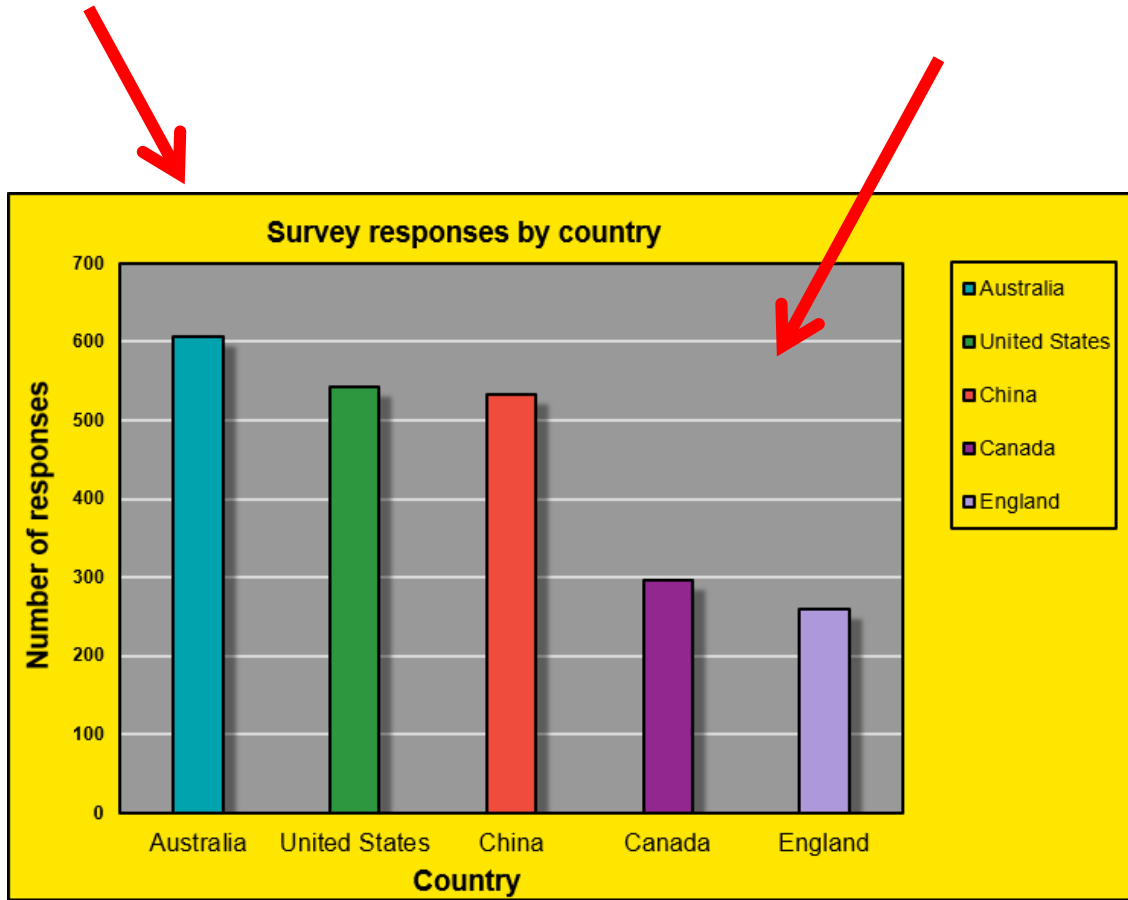
Tufte principles: data-to-ink ratio

Tufte believes you should show the data and essentially maximize the data-to-ink ratio. This essentially means you should remove all non-data ink and redundant data ink, often referred to as chart junk. The idea here is that **less can be more**.



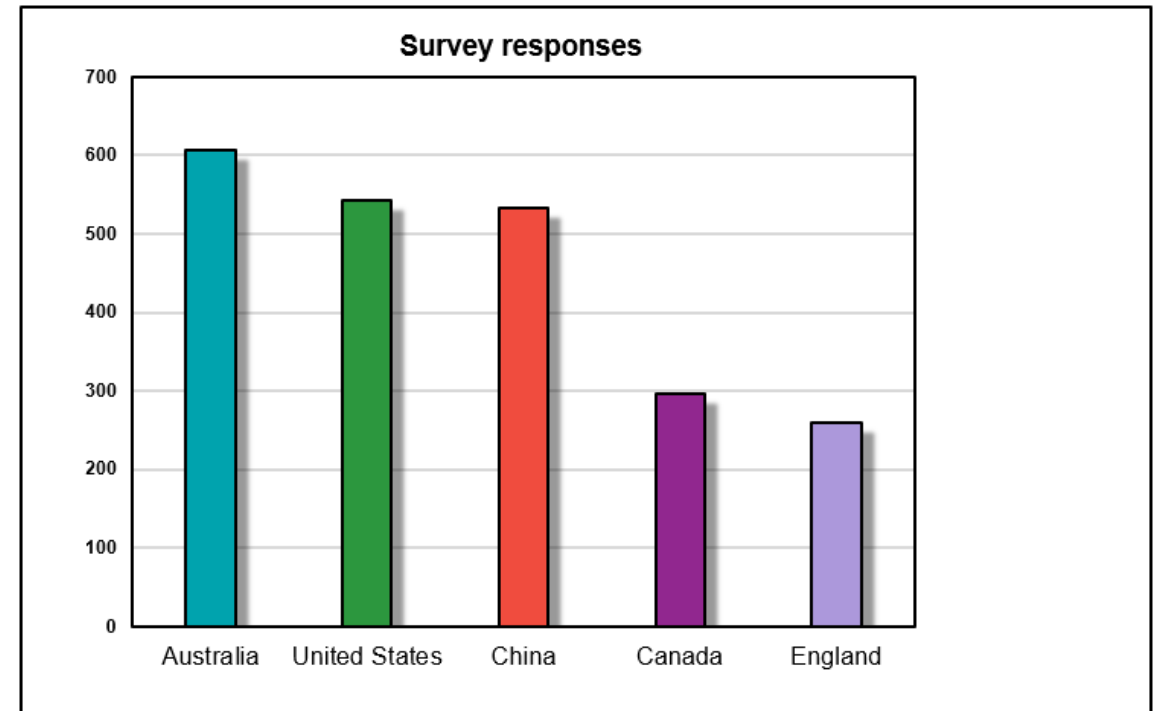
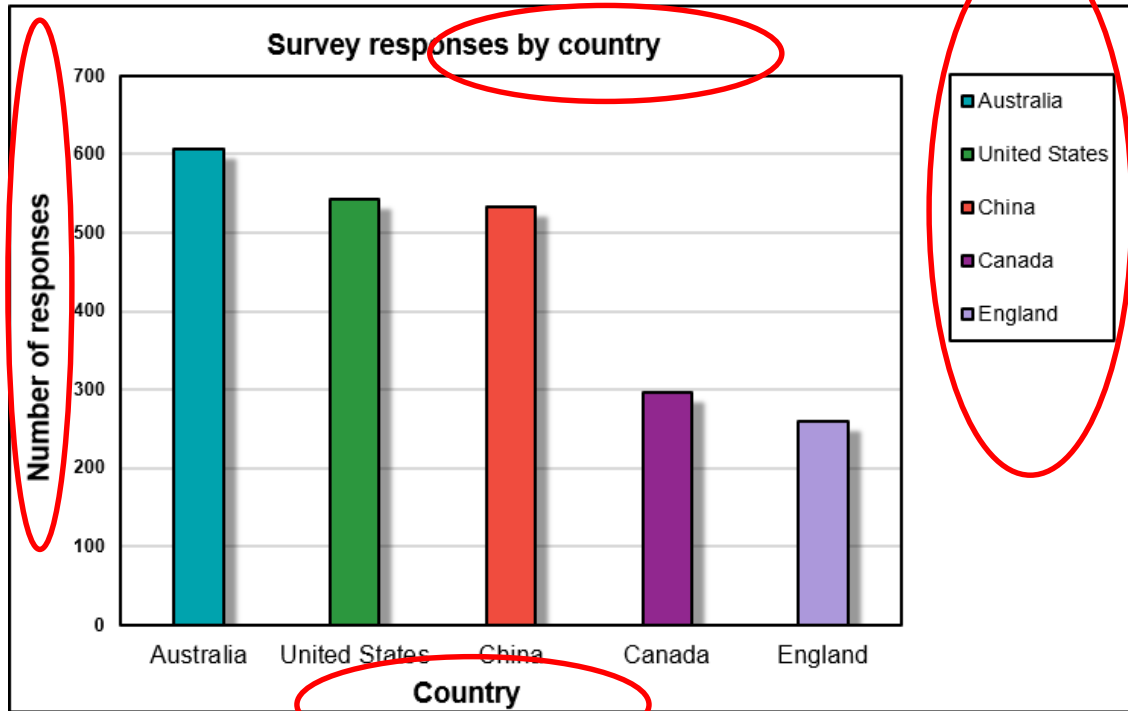
Tufte principles: data-to-ink ratio

Remove backgrounds



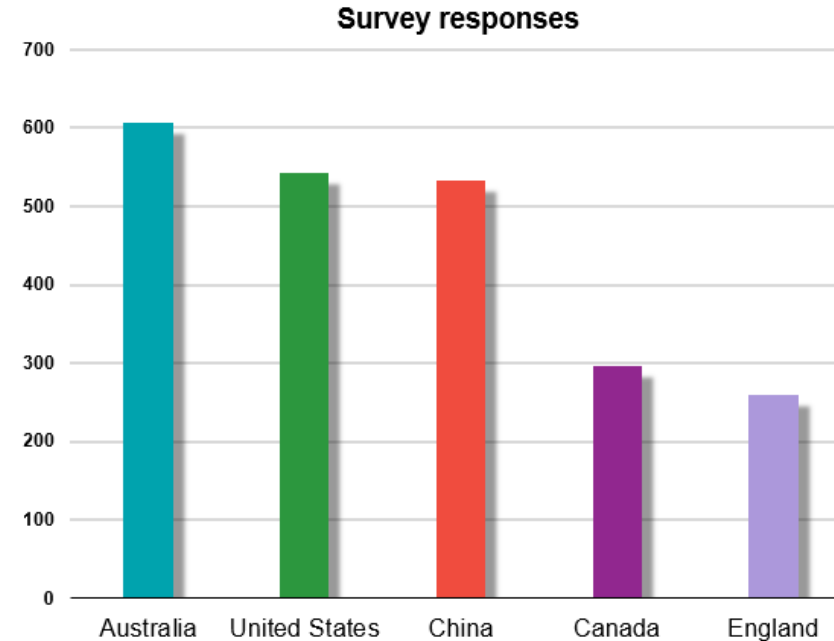
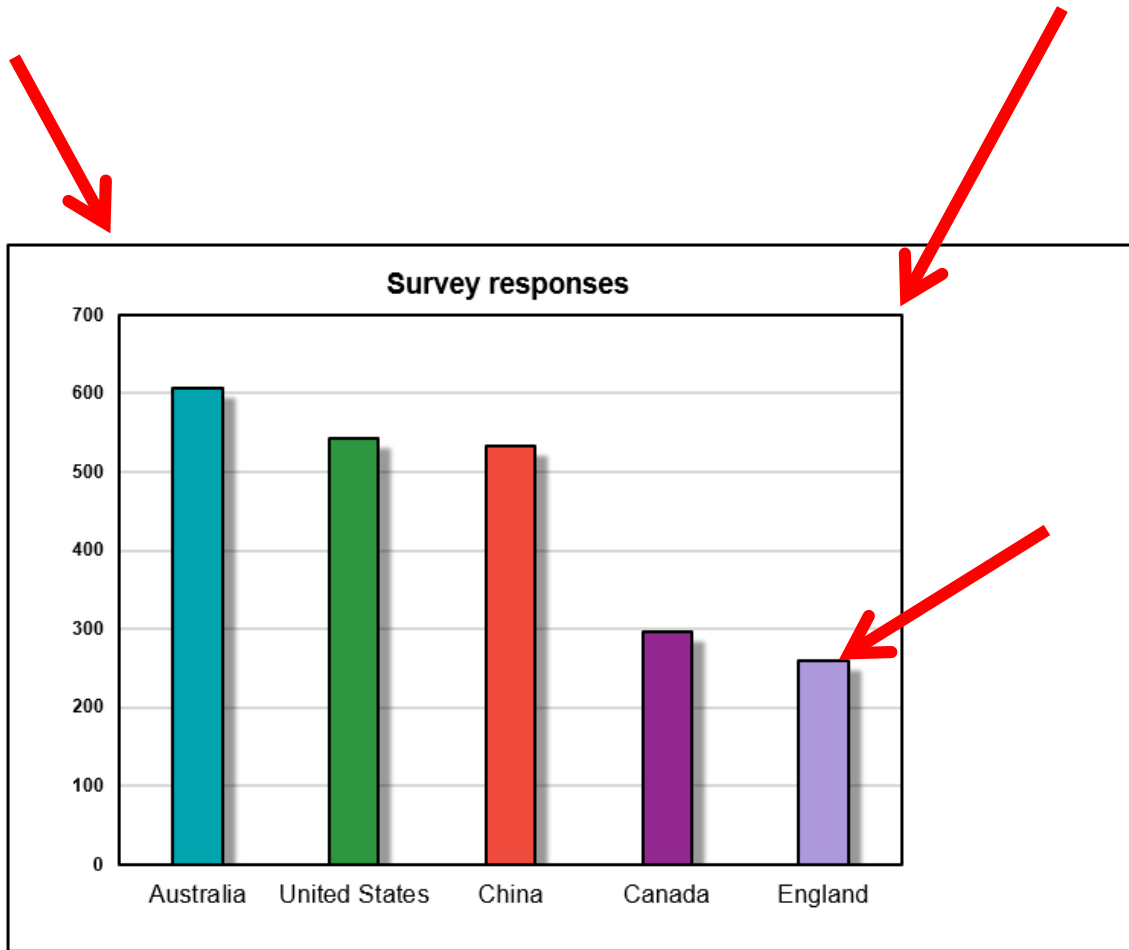
Tufte principles: data-to-ink ratio

Remove redundant labels



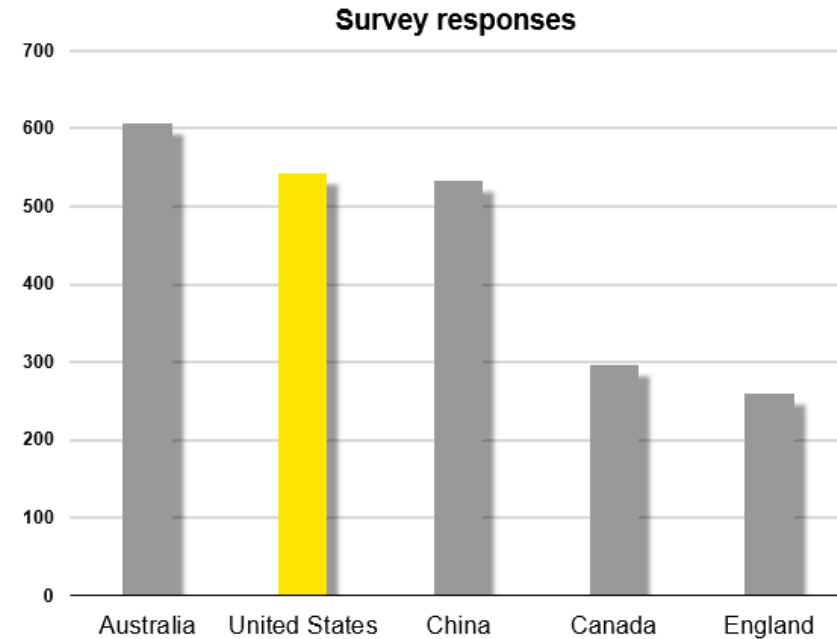
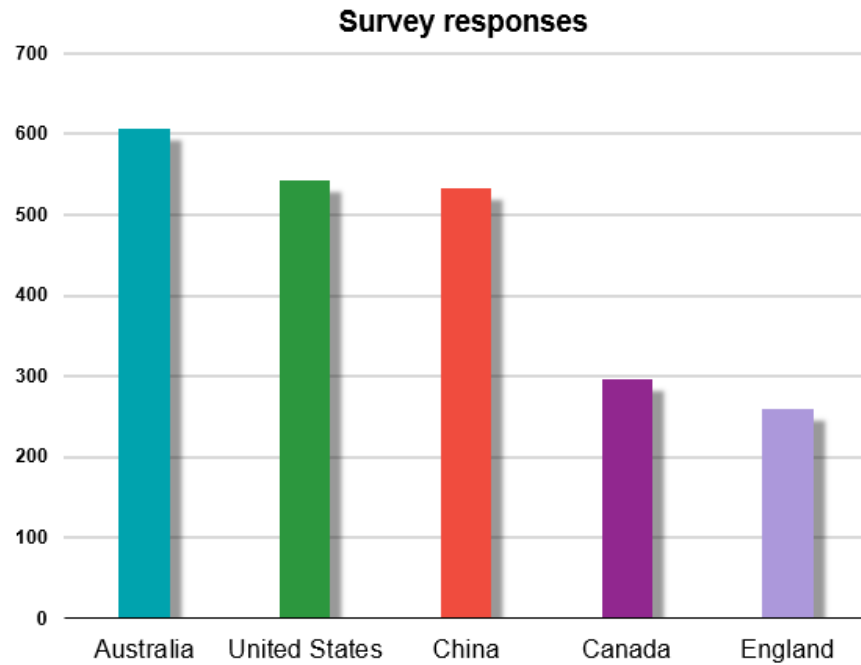
Tufte principles: data-to-ink ratio

Remove borders



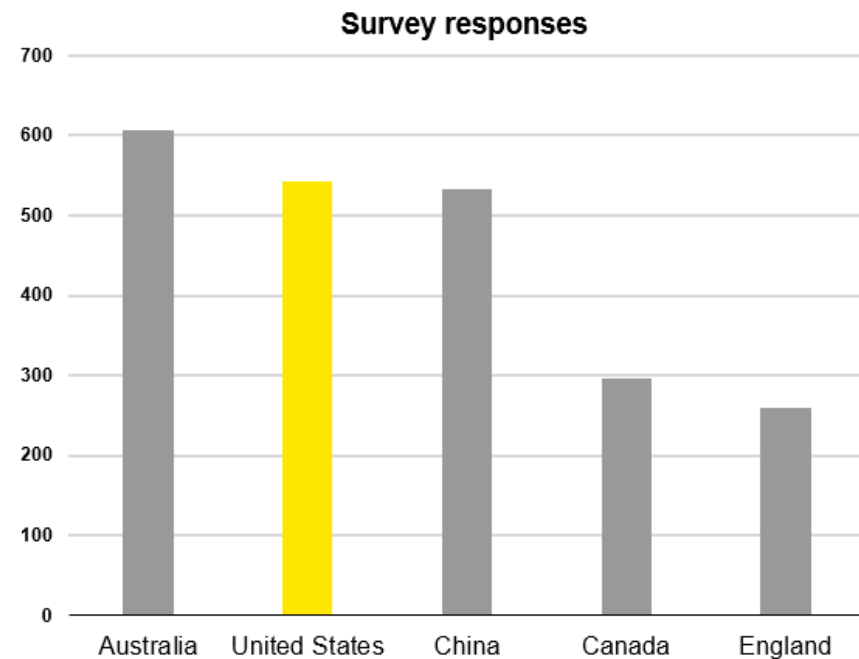
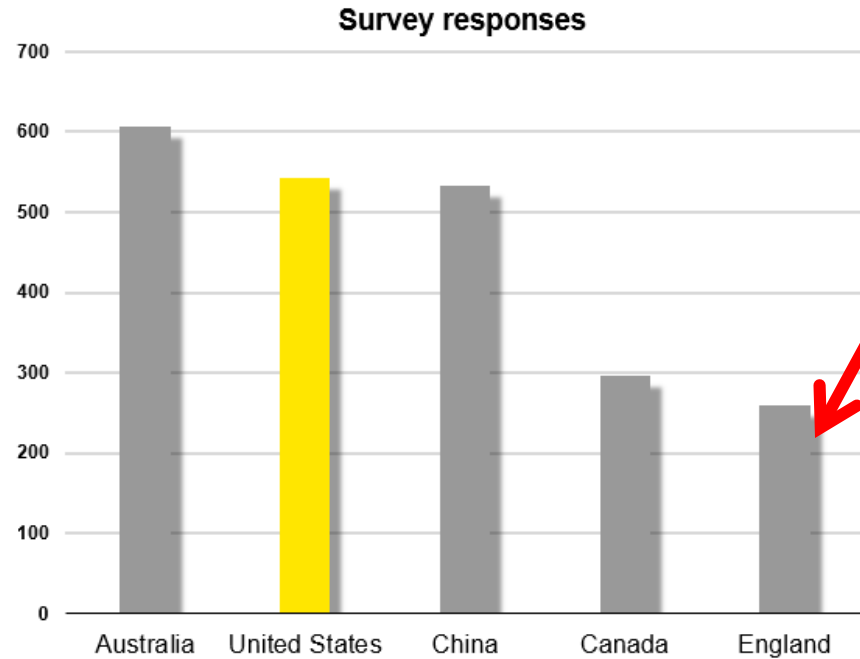
Tufte principles: data-to-ink ratio

Remove colors



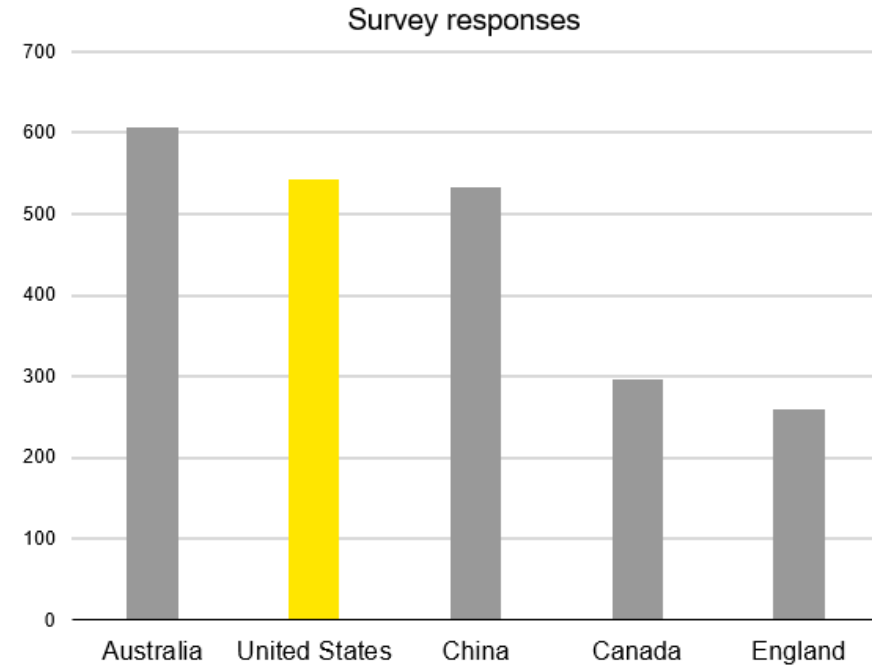
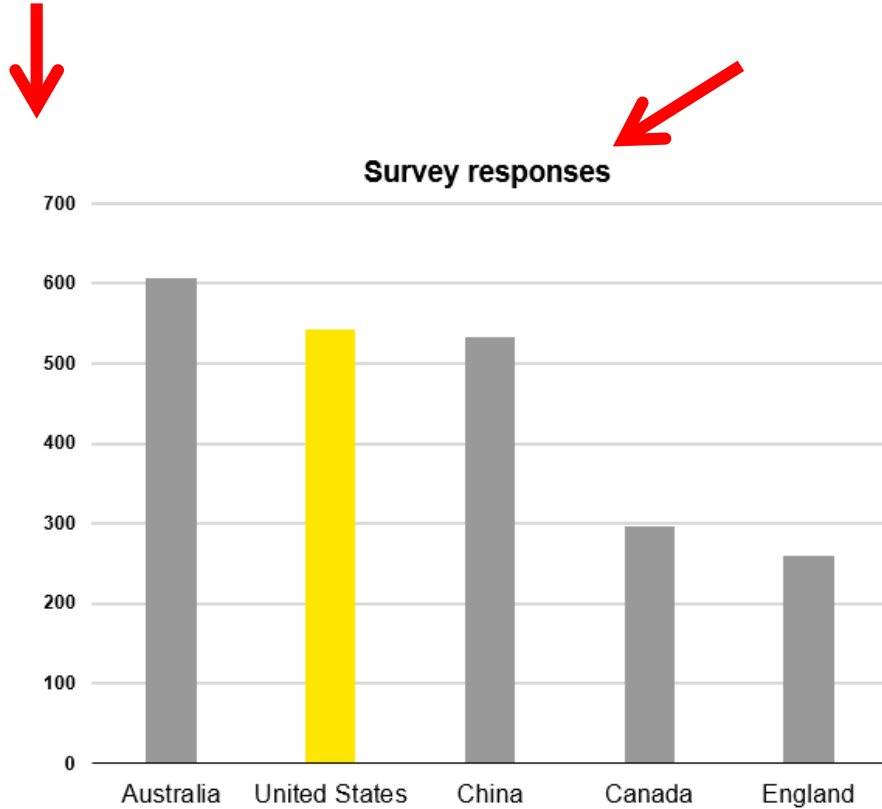
Tufte principles: data-to-ink ratio

Remove special effects



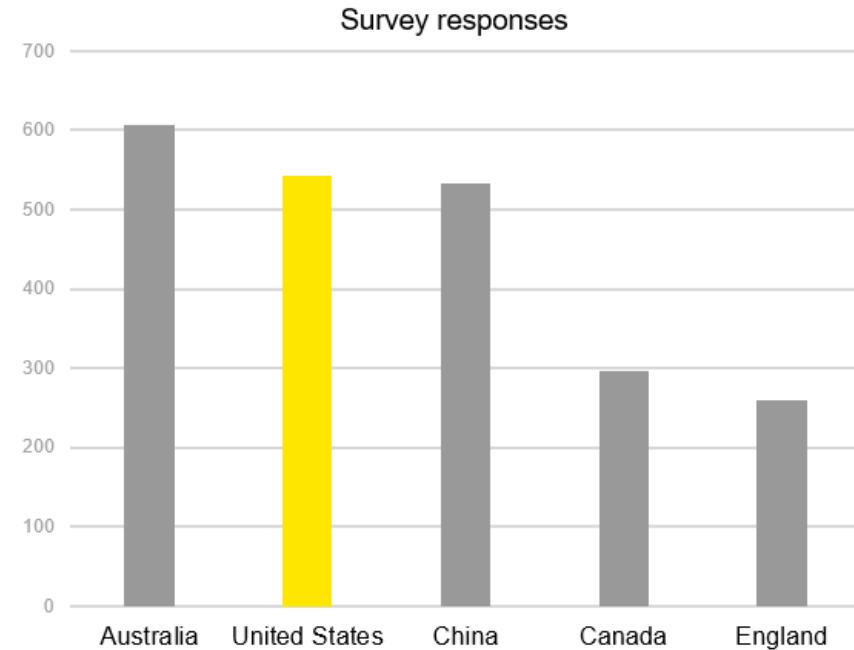
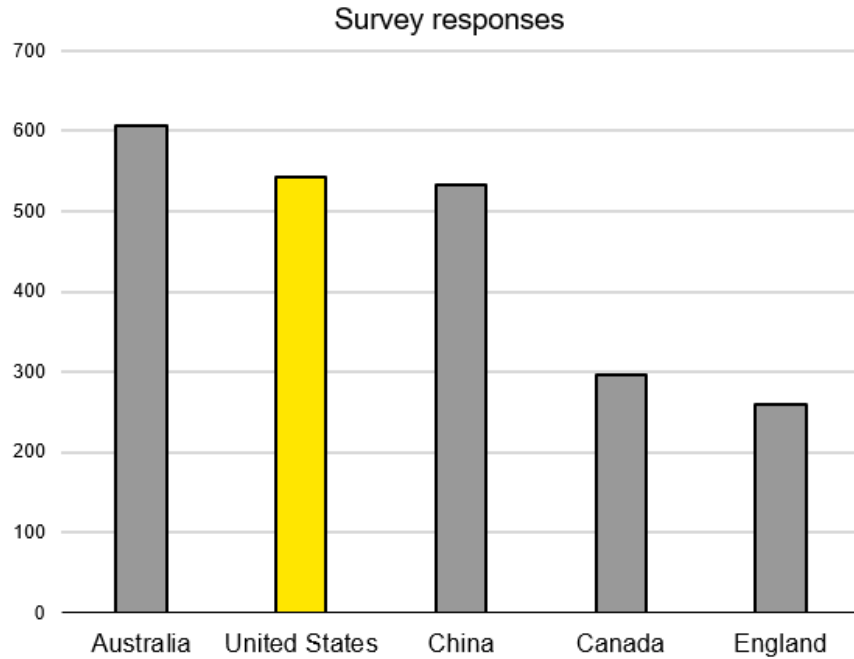
Tufte principles: data-to-ink ratio

Remove bold effect



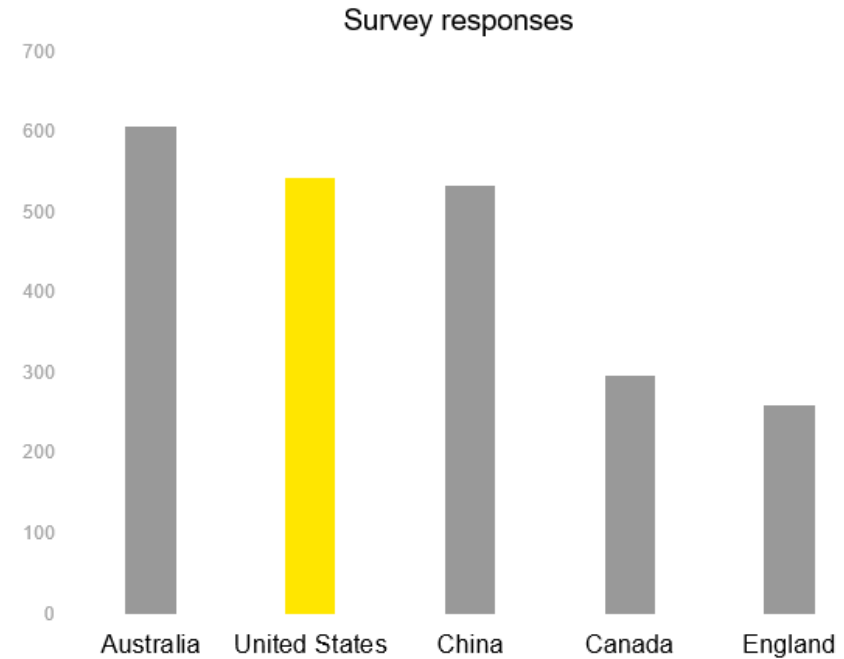
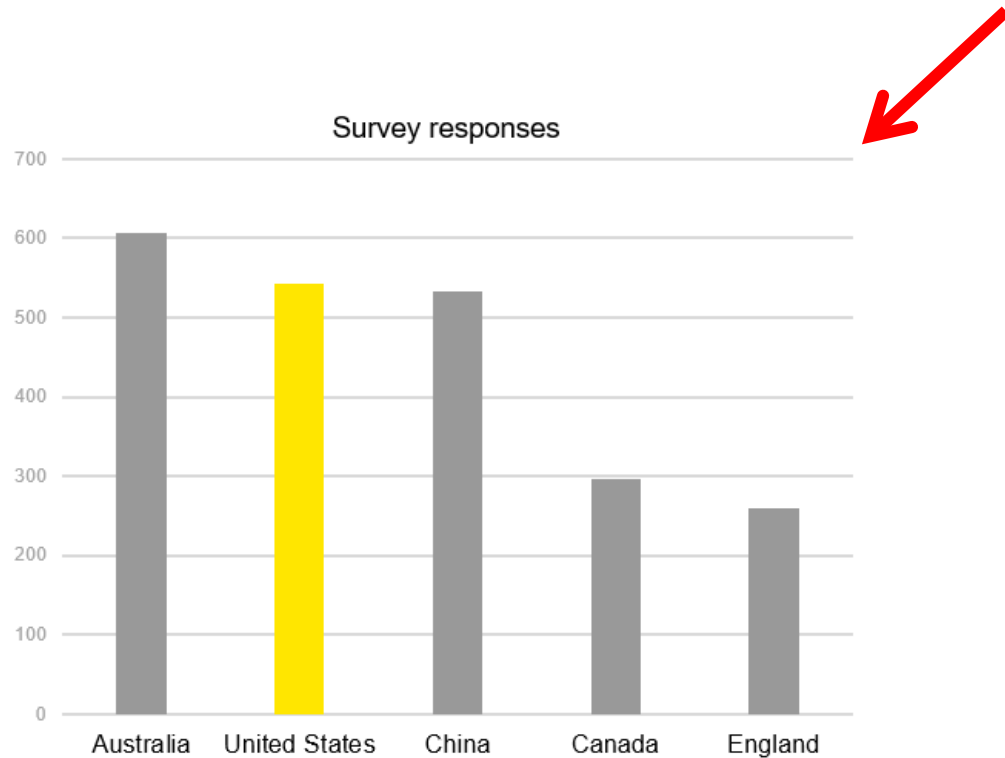
Tufte principles: data-to-ink ratio

Lighten labels



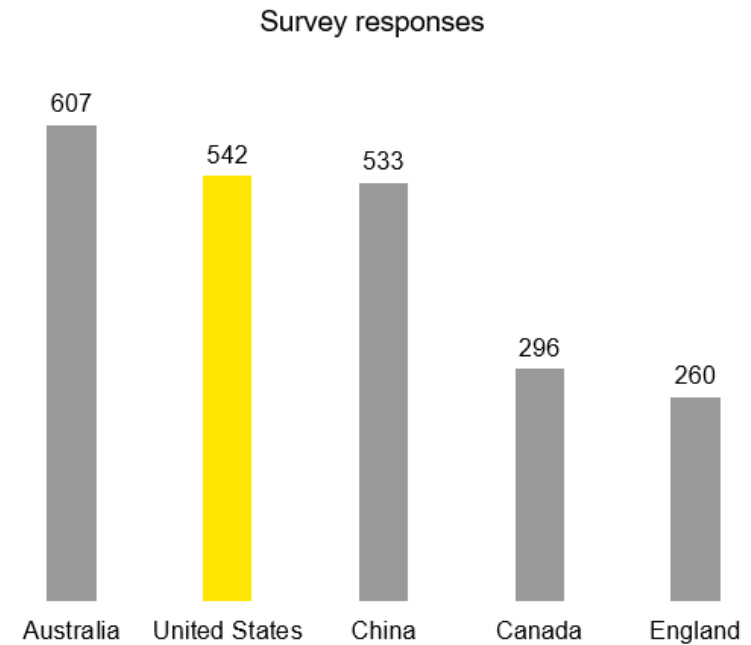
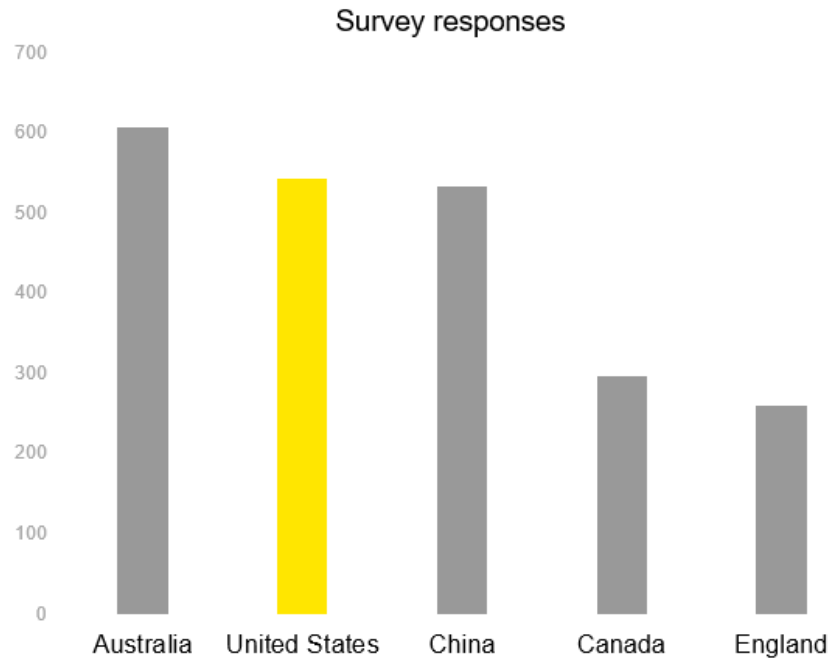
Tufte principles: data-to-ink ratio

Lighten or remove lines



Tufte principles: data-to-ink ratio

Label directly



Analytics mindset – Master case study guide

Course and competency *Optional **Variable, based on topic or student/faculty choice	Big Deals	DuPont	TechWear	Gamification	P-Card	Viz-a-thon	Timp Health	IntegrateCo	Tech Explorer	Peach State University Hotel (EY Helix)	Trina's Trinkets
Introduction to Accounting						**					
Cost and Management Accounting						**			**		
Intermediate Financial Accounting			I, II			**			**		
Accounting Information Systems									**		
Auditing (including both external and internal audit)						**			**		
Tax						**			**		
Fraud			IV		VII	**			**		
Data Analytics									**		
Business Statistics											

Analytics mindset – Master case study guide

Course and competency *Optional **Variable, based on topic or student/faculty choice	Big Deals	DuPont	TechWear	Gamification	P-Card	Viz-a-thon	Timp Health	IntegrateCo	Tech Explorer	Peach State University Hotel (EY Helix)	Trina's Trinkets
Ask the right questions											
Understand and define the objective of the relevant stakeholders											
Understand the business context and the problem if one does, or could, exist											
Develop an expectation of what you expect to see before analyzing your data, if appropriate											
Recognize that questions are iterative and answers may lead to more questions, and that judgment is needed to determine if deeper analysis is warranted											

Analytics mindset – Master case study guide

Course and competency *Optional **Variable, based on topic or student/faculty choice	Big Deals	DuPont	TechWear	Gamification	P-Card	Viz-a-thon	Timp Health	IntegrateCo	Tech Explorer	Peach State University Hotel (EY Helix)	Trina's Trinkets
Extract, transform and load relevant data (i.e., the ETL process)											
Understand data characteristics and their relevance	*	II	I		II			I			
Understand the flow of data in accounting information systems			I								
Capture data – extractions, American Institute of Certified Public Accountants data standards			III		III				*		*
Capture data – transformation (data cleansing)			I, IV		III			II			II
Capture data – loading	*	II			III			II			II
Capture data – maintain data integrity (data validation)		II			II, III			III			
Capture data – automation											

Analytics mindset – Master case study guide

Course and competency <small>*Optional</small> <small>**Variable, based on topic or student/faculty choice</small>	Big Deals	DuPont	TechWear	Gamification	P-Card	Viz-a-thon	Timp Health	IntegrateCo	Tech Explorer	Peach State University Hotel (EY Helix)	Trina's Trinkets
Apply appropriate data analytics techniques											
Analytics techniques – ratio		III	II, III			**					
Analytics techniques – sorting		III	II, III, V			**					
Analytics techniques – aggregation		III	II, III, V			**					
Analytics techniques – trends		III	II, V			**					
Analytics techniques – comparison		III	II, V			**					
Analytics techniques – forecasting		III				**					
Analytics techniques – descriptive statistics (mean, standard deviation, maximum and minimum, quartiles)		III				**					

Analytics mindset – Master case study guide

Course and competency *Optional **Variable, based on topic or student/faculty choice	Big Deals	DuPont	TechWear	Gamification	P-Card	Viz-a-thon	Timp Health	IntegrateCo	Tech Explorer	Peach State University Hotel (EY Helix)	Trina's Trinkets
Apply appropriate data analytics techniques											
Analytics tools – Excel			I, II		II, III			II, III, IV			**
Analytics tools – basic database (Access)					III, IV, V			II, III, IV			**
Analytics tools – visualization (Tableau, Power BI, etc.)		**	III, IV, V			**					**

Analytics mindset – Master case study guide

Course and competency *Optional **Variable, based on topic or student/faculty choice	Big Deals	DuPont	TechWear	Gamification	P-Card	Viz-a-thon	Timp Health	IntegrateCo	Tech Explorer	Peach State University Hotel (EY Helix)	Trina's Trinkets
Apply appropriate data analytics techniques											
Analytics techniques – querying					IV, V, VI, VII			II, III, IV			III
Analytics techniques – cluster analysis											
Analytics techniques – inferential statistics (T-statistics, P-values)											
Analytics techniques – correlation analysis											
Analytics techniques – regression											

Analytics mindset – Master case study guide

Course and competency *Optional **Variable, based on topic or student/faculty choice	Big Deals	DuPont	TechWear	Gamification	P-Card	Viz-a-thon	Timp Health	IntegrateCo	Tech Explorer	Peach State University Hotel (EY Helix)	Trina's Trinkets
Apply appropriate data analytics techniques											
Analytics tools – querying languages (SQL)											
Analytics tools – career-path specific (audit)											
Analytics tools – career-path specific (tax)											

Analytics mindset – Master case study guide

Course and competency *Optional **Variable, based on topic or student/faculty choice	Big Deals	DuPont	TechWear	Gamification	P-Card	Viz-a-thon	Timp Health	IntegrateCo	Tech Explorer	Peach State University Hotel (EY Helix)	Trina's Trinkets
Apply appropriate data analytics techniques											
Analytics techniques – artificial intelligence									*		
Analytics techniques – machine learning									*		
Analytics techniques – cognitive computing									*		
Analytics techniques – neural networks									*		
Analytics techniques – data mining									*		
Analytics techniques – other emerging technologies									*		

Analytics mindset – Master case study guide

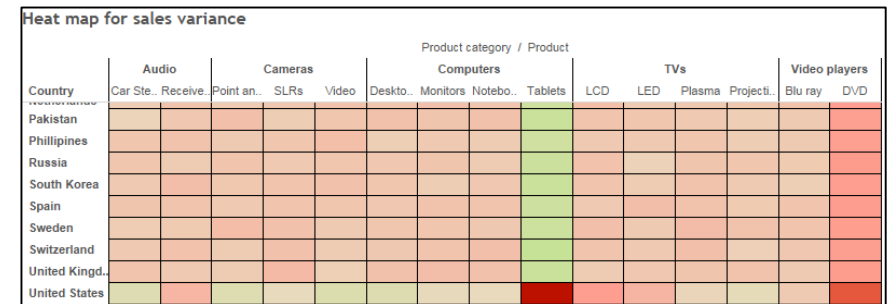
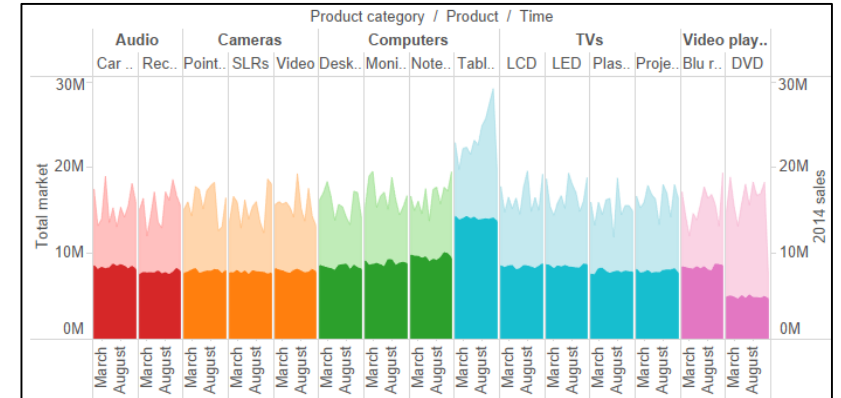
Course and competency *Optional **Variable, based on topic or student/faculty choice	Big Deals	DuPont	TechWear	Gamification	P-Card	Viz-a-thon	Timp Health	IntegrateCo	Tech Explorer	Peach State University Hotel (EY Helix)	Trina's Trinkets
Apply appropriate data analytics techniques											
Analytics tools – programming languages (VBA, Python, Perl, Java, PHP)											
Analytics tools – statistics (R, SAS, SPSS)		**									
Analytics tools – database tools (SAP, Oracle, Microsoft)											
Analytics tools – SSIS packages											

EYARC analytics mindset cases



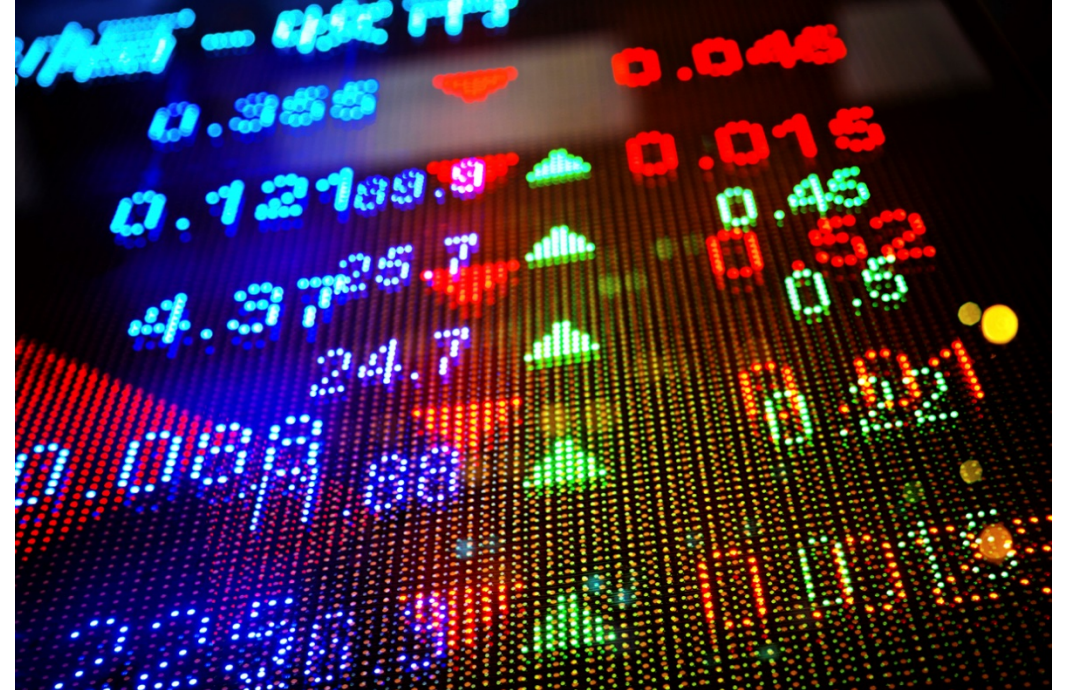
Big Deals

- ▶ Global big box retailer that sells audio, cameras, computers, TVs and video player products in 25 countries.
- ▶ Courses: introductory financial accounting class, cost or management accounting, data analytics
- ▶ Tool: Tableau
- ▶ Data:
 - ▶ Three years of country level sales and sales forecast data for 25 countries for 14 products
 - ▶ Florida state individual store and product sales and customer data for one year
 - ▶ Global competitor sales data for three years and market share data
- ▶ Overview: Two-part case
 - ▶ Students analyze sales data to make recommendations to management on inventory obsolescence, sales variances and consumer marketing strategy



DuPont

- ▶ Courses: introductory financial accounting class, intermediate financial accounting, accounting information systems, data analytics
- ▶ Data: three years of balance sheet and income statement data for 174 companies in six industries
- ▶ Tool: Tableau and R
- ▶ Overview: Four-part case
 - ▶ Students learn about the DuPont Method to evaluate company performance and make a recommendation of which companies to invest in.



TechWear

- ▶ TechWear, a start-up company that manufactures and sells upper-end, high-tech sportswear
- ▶ Courses: intermediate financial accounting (Parts I&II), accounting information systems, auditing, fraud (Part IV), data analytics
- ▶ Data: three fiscal years of transaction level data for the order-to-cash cycle
- ▶ Tools: Excel and Tableau
- ▶ Overview: Seven-part case
 - ▶ Students assume the role as auditor for TechWear and are assigned to audit the order-to-cash cycle.
 - ▶ Students perform risk assessment and develop data plan; prepare an accounts receivable trial balance, aging schedule, post year end cash analysis and assess overall collectability.



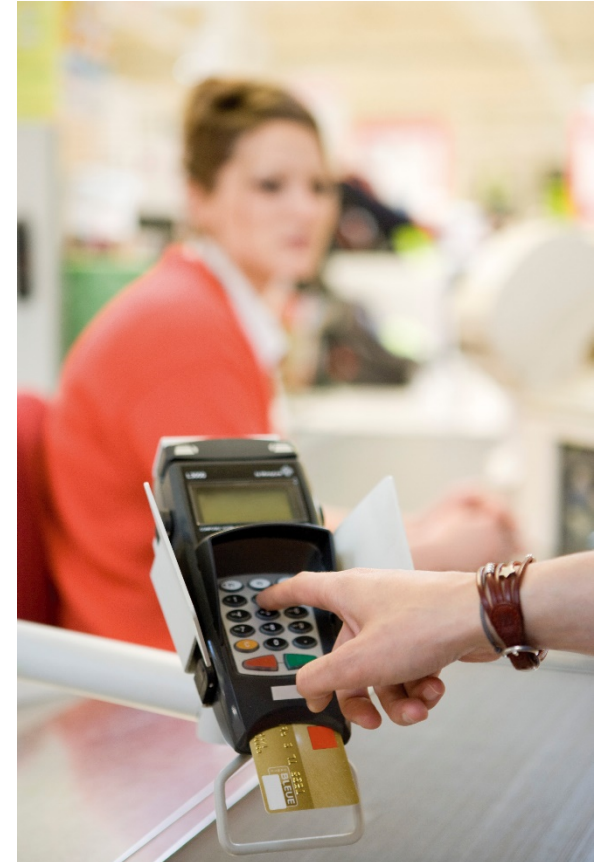
Gamification

- ▶ Courses: cost/management accounting class, accounting information systems, data analytics
- ▶ Data: two sets of survey data
- ▶ Overview: Two-part case
 - ▶ Students assume the role of a Chief Technology Officer and decide whether the IT compliance training for their organization should be changed to a “gamified” training model.



PCard

- ▶ Oklahoma State University purchasing card transactions
- ▶ Courses: accounting information systems, auditing, fraud (Part VII) data analytics
- ▶ Data: Over 2.2 million purchasing transactions
- ▶ Tools: Access
- ▶ Overview: Seven-part case
 - ▶ Students are asked to assume the role of an internal auditor and perform various audit procedures on purchasing card transactions for Oklahoma State University.
 - ▶ Significant ETL work and development of queries to assess compliance with policies and review for fraud



Timp Health

- ▶ Timp Health, a pharmacy benefit management (PBM) company
- ▶ Courses: cost/management accounting, data analytics, business statistics
- ▶ Data: Text files of seven months of drug costs and other relevant data
- ▶ Tools: R
- ▶ Overview: Four-part case
 - ▶ Students assume the role of an analyst asked to analyze drivers of gross drug costs and ultimately develop a model to best predict future gross drug costs.



IntegrateCo

- ▶ IntegrateCo, a company that installs and services integrated building management systems
- ▶ Courses: cost/management accounting, accounting information systems, auditing, data analytics
- ▶ Data: Two years of payroll data
- ▶ Overview: Three-part case
 - ▶ Students assume the role of an analyst and are asked to review payroll between two years and analyze variances

	This Pay	Year
Gross Pay	388.27	388.00
Pension	0.00	0.00
AVC's	0.00	0.00
Taxable Pay	388.27	388.00

Trina's Trinkets

- ▶ Trina's Trinkets Inc. (Trina's), a corporation based in Utah that sells more than 3,600 different types of small trinkets and gifts throughout various states in the West
- ▶ Courses: tax, data analytics
- ▶ Data: real-world individual sales transactions (approximately 395,000), invoice information, product information (more than 3,600) and customer information; ZIP code data and current state tax rates
- ▶ Tools: Excel, Tableau and Access
- ▶ Overview: Three-part case
 - ▶ In completing this case, students will learn more about the operational and tax policy issues around the state sales tax collection process and use data analytics to provide solutions to an entity's challenges around state sales taxes.
 - ▶ Moderate ETL work



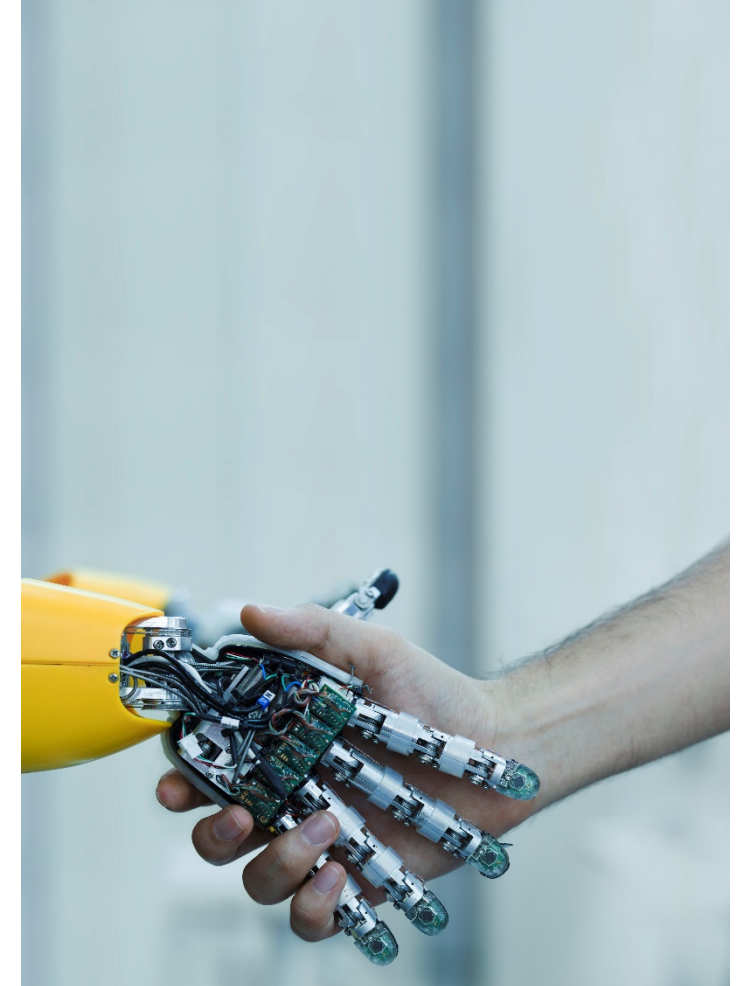
Viz-a-thon

- ▶ Courses: this case can be used in virtually all accounting courses based on the topic chosen for their visualization
- ▶ Data: Open-students are expected to find their own data; we offer select resources
- ▶ Overview: Two-part case
 - ▶ Students must generate their own question, find and ETL data, develop their own visualization and present their findings to the class.
 - ▶ It is structured to be delivered as a competition at a student or group level.

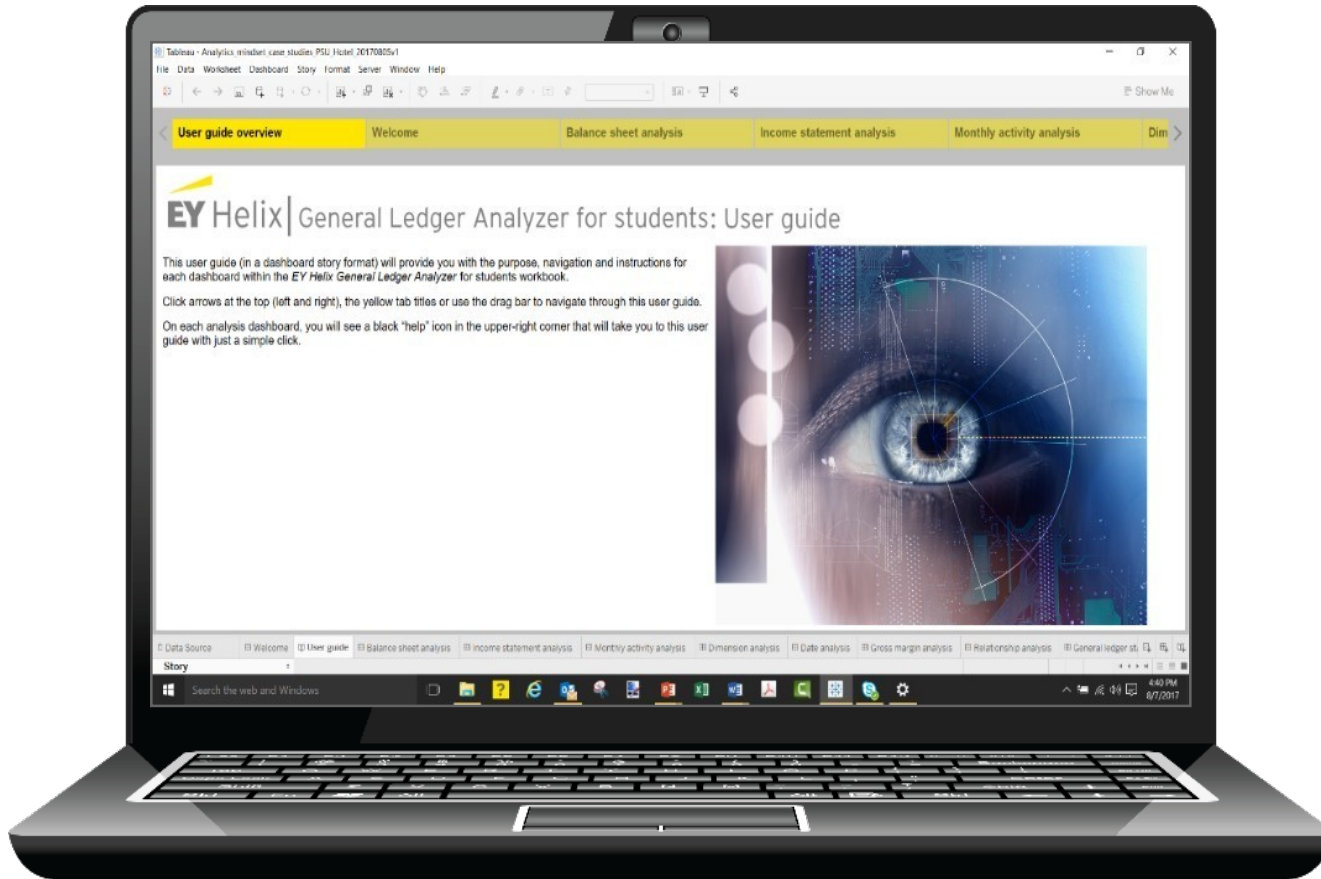


Tech Explorer

- ▶ Courses: this case can be used in virtually all accounting courses
- ▶ Data: N/A
- ▶ Overview: One-part case
 - ▶ The case asks student groups to research emerging data and technology topics, prepare and present a presentation to the class on the topic and to write a memo about the topic.
 - ▶ The case is designed to help students achieve the [awareness](#) level competency for emerging developments in data (and better facilitation of ETL) and analytic techniques and tools.
 - ▶ We provide some resources that you can share with students to aid with research or you can require them to do exclusively on their own.
 - ▶ A grading rubric is provided.

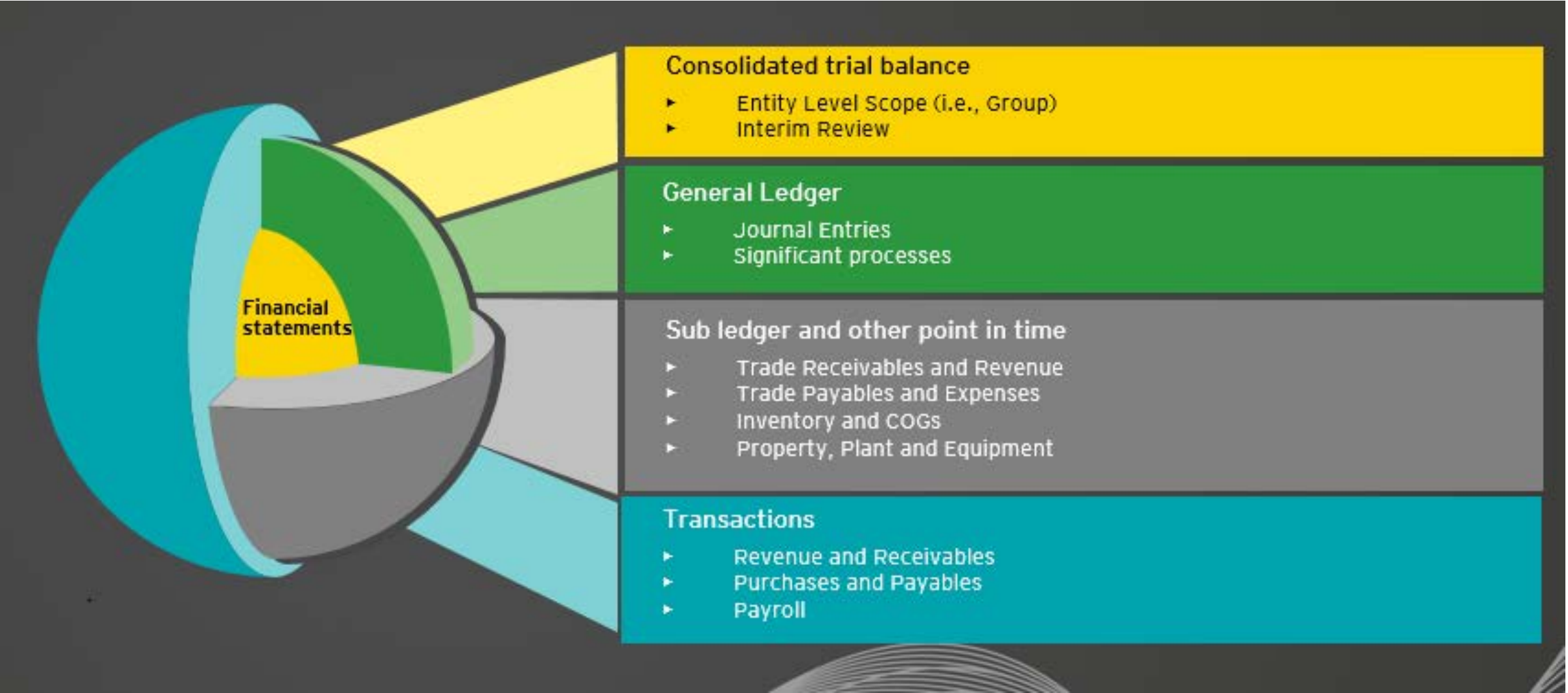


EY Helix General Ledger Analyzer for students



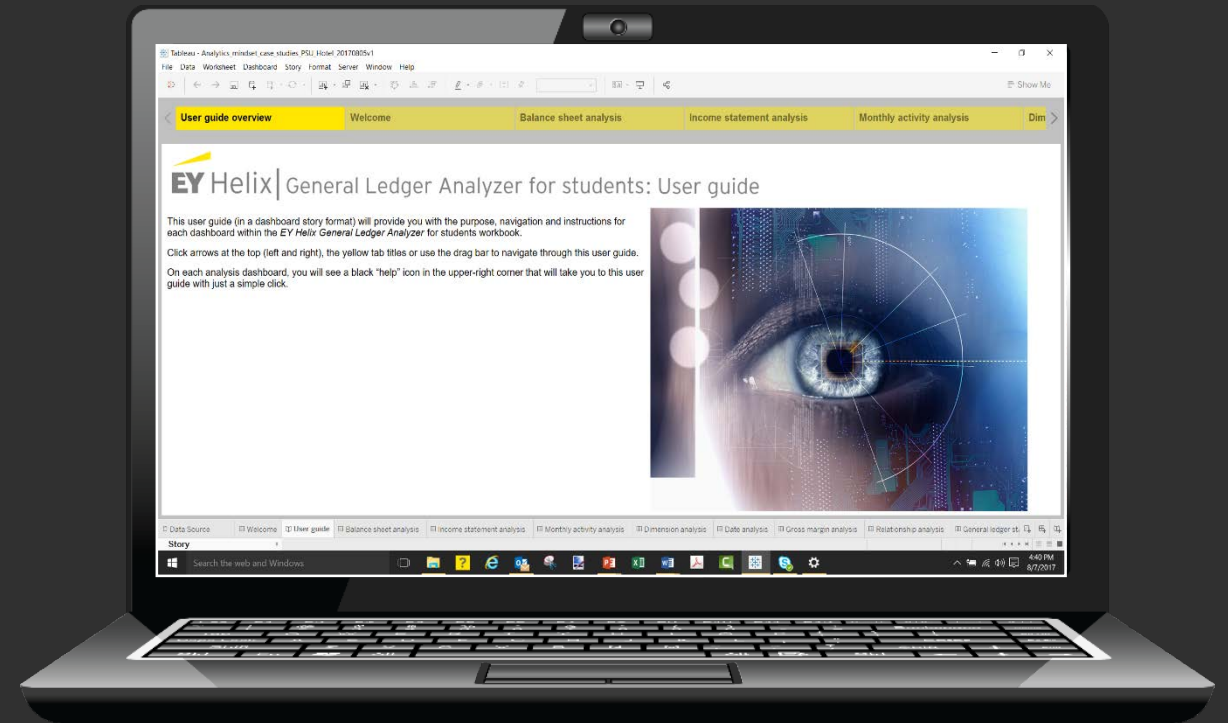
- ▶ Real-world, auditing learning experiences using leading-edge tools similar to those utilized by EY Assurance professionals within EY Helix
- ▶ Packaged in Tableau with data and developed analyses and visualizations
- ▶ You do NOT need to know how to use Tableau. It is point and click.
- ▶ There are some software limitations that sometimes make the tool “clunky”
- ▶ Includes storyboard user guide (and separate pdf also)

EY Helix Analyzers



EY Helix General Ledger Analyzer for students

- ▶ Balance sheet analysis
- ▶ Income statement analysis
- ▶ Monthly account activity analysis
- ▶ Dimension analysis
- ▶ Date analysis
- ▶ Gross margin analysis
- ▶ Relationship analysis
- ▶ General ledger statistics
- ▶ Journal entry line items
- ▶ Journal entry summary and details



Peach State University Hotel (EY Helix cases)

- ▶ Students simulate the role of the staff auditor for Peach State University Hotel, a hotel and conference center
- ▶ Real data: Two fiscal years of all journal entry transactions, the trial balance and other operational, non-financial data
- ▶ Cases:
 - ▶ Background case
 - ▶ Understanding audit analytics case
 - ▶ Revenue case
 - ▶ Fraud case



- ▶ Audit of June 30, 2016 year end; first time using audit analytics
- ▶ Hotel and conference center in a small college town: 200 rooms, meeting and event space, restaurant, café, coffee shop, gift shop
- ▶ Average daily room rate pricing
- ▶ Dates and volume chart of key events, unusual events (November, December 2015 and January 2016 and mechanical failure August 2015) and corporate holiday schedule
- ▶ Monthly occupancy rates and Rooms occupied
- ▶ Business unit descriptions
- ▶ Chart of accounts
- ▶ Employee job descriptions
- ▶ Approved employee authorization list
- ▶ Hospitality industry background and KPIs

Key background information

Operating processes



Peach State University

Hotel and Conference Center

- ▶ POS-Point of Sale system-used to record incidentals and food and beverage related transactions
- ▶ GuestSYS-GuestSystem-the Property Management System (PMS) used to record room related transactions
 - ▶ Credit card-Recorded as CREDIT CARD RECEIPT
 - ▶ Cash or Check-Recorded as CASH RECEIPT
- ▶ Generally, there is a one to four day lag between the time a guest charge occurs and when it is recorded to the GL by the corporate accounting office.
 - ▶ The lag occurs because Corporate verifies that the money has been received before recording it into the system.
 - ▶ The lag is longer near weekends and holidays when Corporate is closed.
 - ▶ There is always at least a one-day lag because Corporate processes receipts the day after they are sent from the hotel.
 - ▶ The Entry Date is the field that identifies the date the transaction was posted to the subsystems (GuestSYS or POS). Generally, this is one day after the activity occurred.
 - ▶ The Effective Date is the date upon which the transaction is posted in the GL and recognized as revenue.
 - ▶ **Corporate is recognizing revenue based on this posting date rather than the date it is meeting its performance obligations; however, Corporate performs cutoff off procedures at year end to account for this at a level of materiality that, year over year, would suit corporate and ensure that amounts are properly stated.**

Key background information

Operating processes



Peach State University

Hotel and Conference Center

- ▶ Conference and catering revenue makes up 75-90% of dining revenue
- ▶ Gross margin is typically between 75-85% on a monthly basis.
- ▶ Contract and payments recorded by Catering Manager
 - ▶ Credit card-Recorded as CREDIT CARD RECEIPT
 - ▶ Cash or Check-Recorded as CASH RECEIPT
- ▶ There can be two to three week lag between the time an event occurs and when the processing is complete and payment recorded in the GL

100% of general ledger data for two fiscal years ending June 30, 2016:

- ▶ Account class and type
- ▶ Amount (debit and credit classification)
- ▶ Business unit
- ▶ Effective date: date the entry was posted to the GL as occurring
- ▶ Entry date: date that the entry was entered into the subsystem or GL, depending on the type of transaction.
- ▶ GL Account name, account number
- ▶ JE Description and Identifier
- ▶ Period: by month and FY
- ▶ Preparer ID: employee or subsystem
- ▶ Source: payment type or source type-CASH RECEIPT, CHECK, CREDIT CARD RECEIPT, CREDIT MEMO, PAYROLL JV, PAYROLL MANUAL JV, PAYROLL S/B JV, PURCHASE CARD, REGULAR JV

Part Ia: Analyze the income statement

- ▶ Small decrease in overall revenue (1.2%)
- ▶ Dining and hotel revenues both significant accounts
- ▶ Identify items that would impact our expectations and see that results are in line with our expectations

Income statement lead sheet ↗

GL Account	Current year	Prior year	Change \$	Change %
40910 - Interest on Investment	5,145	9,853	(4,708)	(47.8%)
43180 - Rents - Hotels	4,601,518	4,909,465	(307,947)	(6.3%)
43310 - Sales - Dining Halls	4,602,228	4,380,202	222,026	5.1%
43440 - Sales - Other	79,400	95,327	(15,927)	(16.7%)
43620 - Vending Operations	2,431	4,817	(2,386)	(49.5%)
43770 - Other Enterprises	6,500	9,559	(3,059)	(32.0%)
Grand Total	9,297,222	9,409,224	(112,002)	(1.2%)

Part Ib: Analyze the balance sheet

- ▶ Decrease in cash overall (6.4%)
- ▶ Operating cash is a significant account

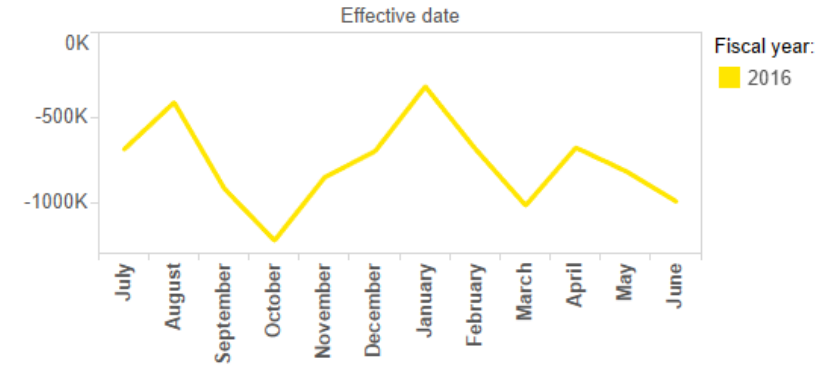
Balance sheet lead sheet

GL Account	Current year	Prior year	Change \$	Change %
11200 - Petty Cash	5,000	5,000	0	0.0%
11845 - Operating Bank Account	4,149,727	4,434,538	(284,811)	(6.4%)
Grand Total	4,154,727	4,439,538	(284,811)	(6.4%)

Part Ic: Analyze monthly trends and relationships

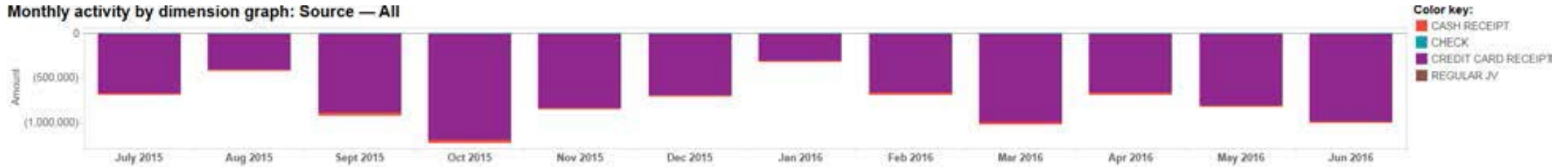
- ▶ Comparison to revenue based on expectations and comparative to the prior year
- ▶ Utilize occupancy room and rate charts as well as events by month charts to establish expectations along with an understanding of key events, unusual events and other information that would impact revenue
- ▶ We do not know pricing information by month, event participant counts or enough details about the athletic contract so follow up is needed to get more precise insights
- ▶ Some patterns don't align with expectations

Monthly account activity graph



Part Id: Understand the sources of journal entries

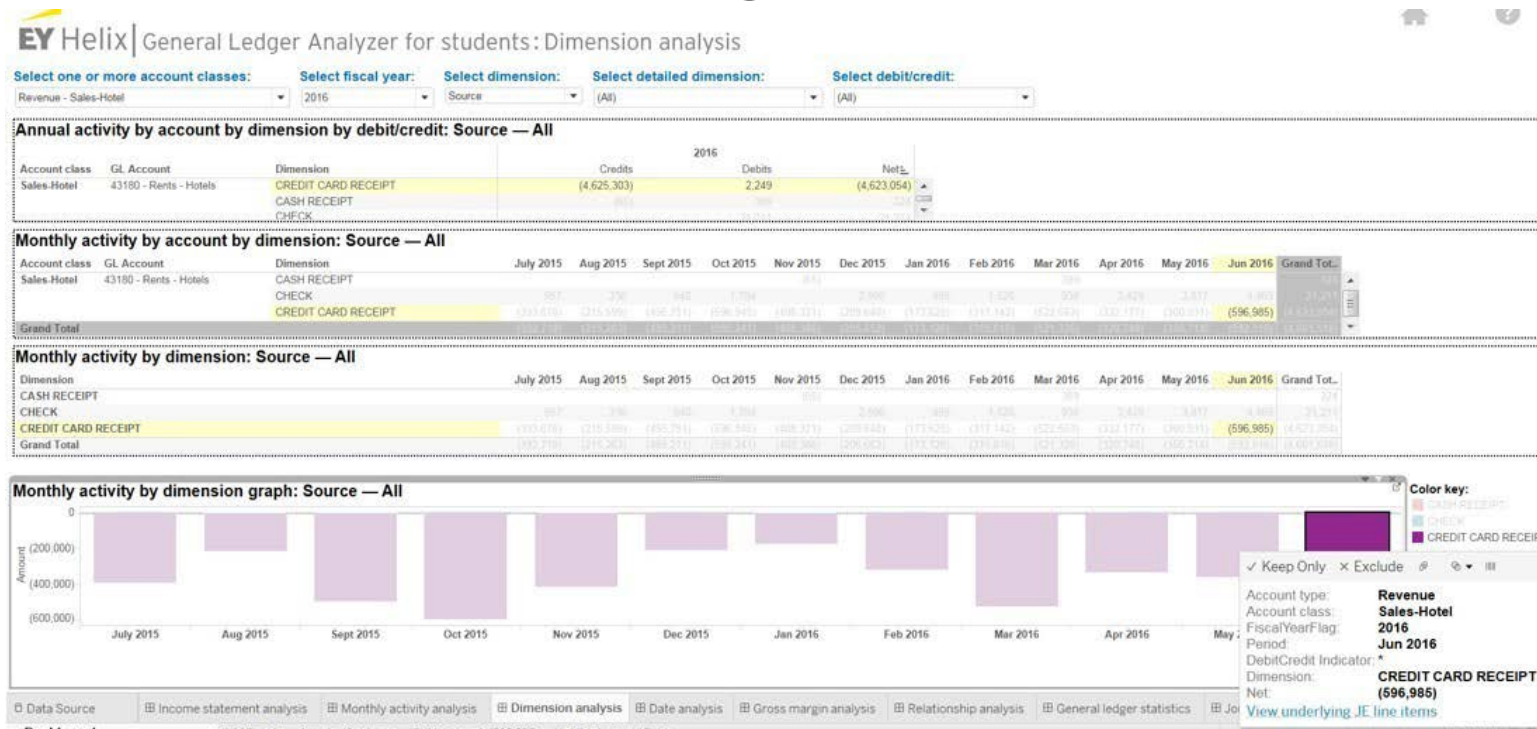
Monthly activity by dimension graph: Source — All



- ▶ There are four sources of journal entries for revenue accounts: cash receipts, credit card receipts, check and regular JV
- ▶ Credit card receipts accounted for 97% of total sources. This is consistent with the prior year and with our understanding that generally all revenue transactions flow from this source. Revenue from any other source would represent higher risk
- ▶ Credit card receipts would be considered significant to the financial statements due to the volume.
- ▶ Credit card, cash receipts and checks are routine classes of transactions. Regular JVs are non routine and there are no estimation classes of transactions.

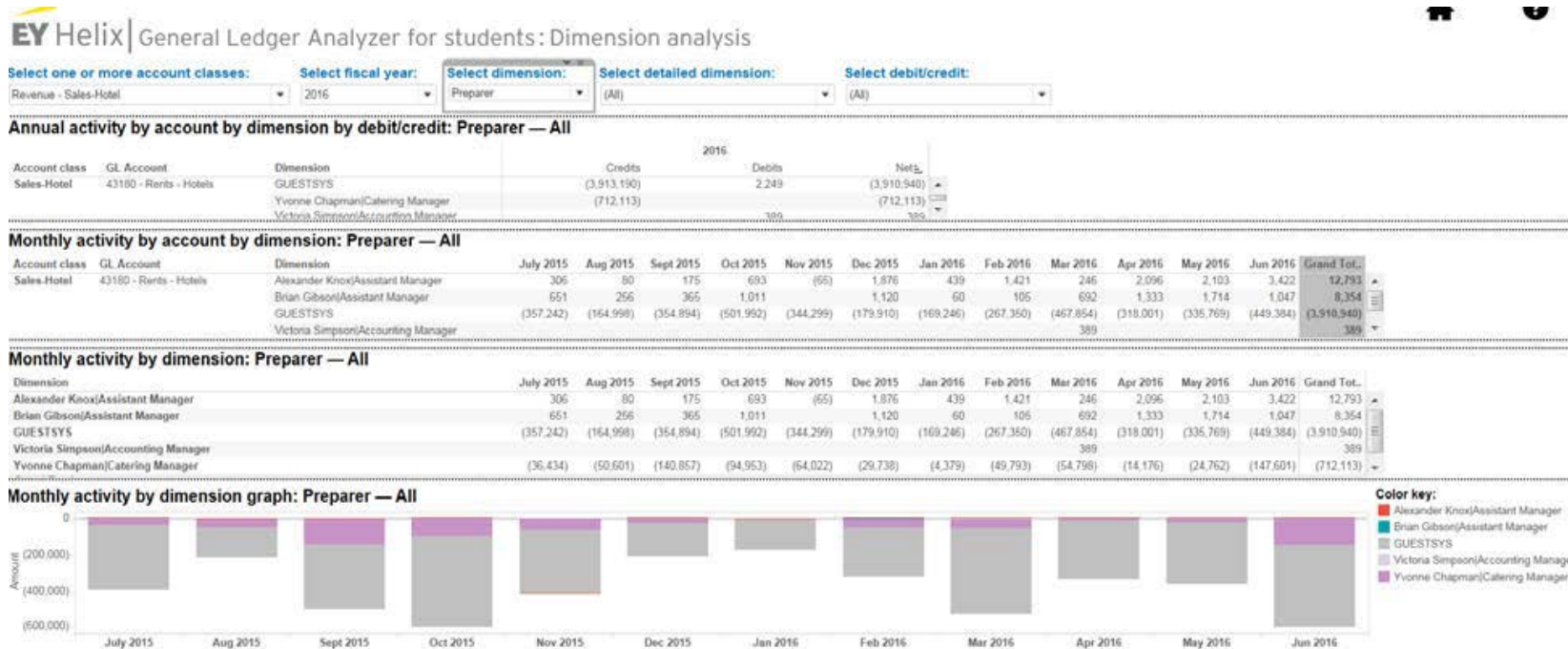
Part Ie: Understand how journal entries are posted

- ▶ We walk through a transaction flow for credit card transactions for hotel sales.
- ▶ We were able to see that the preparer is GuestSYS and debit to cash to confirm our understanding



Part If: Understand who is posting journal entries

- ▶ There are four preparers for dining sales and five for hotel sales.
- ▶ The percentage of activity by preparer was closely in line with expectations. There was some debit activity by preparers that, while small, deserves inquiry.



Part Ig: Understand debit and credit activity

Select one or more account classes: Select fiscal year: Select dimension: Select detailed dimension: Select debit/credit:

Annual activity by account by dimension by debit/credit: All — Null

Account class	GL Account	Dimension	2016		Net
			Credits	Debits	
Sales-Hotel	43180 - Rents - Hotels	Null	(4,625,368)	23,849	(4,601,518)
Grand Total			(4,625,368)	23,849	(4,601,518)

Select one or more account classes: Select fiscal year: Select dimension: Select detailed dimension: Select debit/credit:

Annual activity by account by dimension by debit/credit: All — Null

Account class	GL Account	Dimension	2016		Net
			Credits	Debits	
Sales-Dining	43310 - Sales - Dining Halls	Null	(4,604,391)	2,163	(4,602,228)
Grand Total			(4,604,391)	2,163	(4,602,228)

- ▶ Debit activity was small and in line with expectations.

Part 1h: Understand the relationship between revenue and cash using journal entries



- ▶ Revenue accounts with a credit card source show a debit posting to cash for a significant portion of the activity; immaterial amounts and journal entries can all be identified and further investigated

Part IIb: Gross margin analysis

Gross margin trend



Gross margin percentage and account balance details of sales and cost of sales account classes

	Jul 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015	Jan 2016	Feb 2016	Mar 2016	Apr 2016	May 2016	Jun 2016
Gross margin percentage	76.1%	61.4%	75.7%	80.6%	79.6%	80.0%	76.7%	79.9%	79.5%	75.4%	79.5%	76.6%
Sales	287,321	191,454	416,243	616,743	434,801	480,974	141,805	364,286	485,402	340,640	449,389	393,169
Cost of sales	68,659	73,843	101,188	119,920	88,767	96,181	32,989	73,376	99,327	83,955	92,003	92,015

General ledger account details of Sales account classes

Account class	GL Account	Jul 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015	Dec 2015	Jan 2016	Feb 2016	Mar 2016	Apr 2016	May 2016	Jun 2016
Sales-Dining	43310 - Sales - Dining Halls	287,321	191,454	416,243	616,743	434,801	480,974	141,805	364,286	485,402	340,640	449,389	393,169
	Total	287,321	191,454	416,243	616,743	434,801	480,974	141,805	364,286	485,402	340,640	449,389	393,169
Grand Total		287,321	191,454	416,243	616,743	434,801	480,974	141,805	364,286	485,402	340,640	449,389	393,169

- ▶ August gross margin is not in line with expectations and should be further investigated

Part IIa: Monthly revenue trend analysis

	Source	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	
FY15 monthly revenue	Helix GL Analyzer	\$426,265	\$217,025	\$415,473	\$743,039	\$337,991	\$372,906	\$269,267	\$338,770	\$416,793	\$543,190	\$344,504	\$484,242	
FY16 occupied rooms/ FY15 occupied rooms		93.96%	76.64%	97.84%	108.29%	84.11%	43.30%	98.98%	109.36%	84.64%	82.42%	102.14%	98.02%	
Prior year monthly revenue adjusted for change in occupancy		\$ 400,516	\$ 166,338	\$ 406,480	\$ 804,610	\$ 284,293	\$ 161,485	\$ 266,525	\$ 370,483	\$ 352,754	\$ 447,697	\$ 351,871	\$ 474,637	
Percentage increase in average pricing	Page 4-The average daily room rate for FY15 was \$116.31 and for FY16 it was \$117.88	1.35%	1.35%	1.35%	1.35%	1.35%	1.35%	1.35%	1.35%	1.35%	1.35%	1.35%	1.35%	
Prior year monthly revenue adjusted for change in occupancy and pricing		\$ 405,922	\$ 168,583	\$ 411,967	\$ 815,471	\$ 288,131	\$ 163,665	\$ 270,123	\$ 375,484	\$ 357,515	\$ 453,740	\$ 356,621	\$ 481,043	
FY16 monthly revenue	Helix GL Analyzer	\$ 392,718	\$ 215,263	\$ 495,211	\$ 595,241	\$ 408,386	\$ 206,652	\$ 173,126	\$ 315,616	\$ 521,326	\$ 328,748	\$ 356,714	\$ 592,516	
Difference over (under) expectations		\$ (13,204)	\$ (46,680)	\$ (83,244)	\$ 220,230	\$ (120,255)	\$ (42,988)	\$ 96,997	\$ 59,868	\$ (163,810)	\$ 124,992	\$ (94)	\$ (111,472)	\$ (79,660)
FY16 occupancy rooms	Page 11	3,142	2,878	3,164	3,842	2,806	899	2,722	3,750	3,608	3,474	3,439	4,299	38,023
FY15 occupancy rooms	Page 11	3,344	3,755	3,234	3,548	3,336	2,076	2,750	3,429	4,263	4,215	3,367	4,386	41,703
		93.96%	76.64%	97.84%	108.29%	84.11%	43.30%	98.98%	109.36%	84.64%	82.42%	102.14%	98.02%	

- ▶ Expectations can be developed at a strong level of precision using rooms occupied, occupancy rates and price rate increase information. Two months do not appear to be in line with expectations and can be further investigated. Further precision can be obtained with more detailed pricing information



Innovation mindset

Innovation mindset

We are living in an **age of transformation** in which the marketplace is in constant demand for new and innovative ways of creating value.

Our reliance on being connected is also at an all-time high, whether it's connectivity to data, interfaces, people or experiences.

This is driving disruption and change at an unprecedented speed!



Innovation mindset

An innovation mindset includes the ability to:

- ▶ Be agile and adaptive to constant change
- ▶ Think critically and with curiosity
- ▶ Solve problems creatively and embrace technology;
- ▶ Redefine how work can get done faster, simpler and better.

An innovation mindset is key for a professional's ability to thrive in this age of transformation!

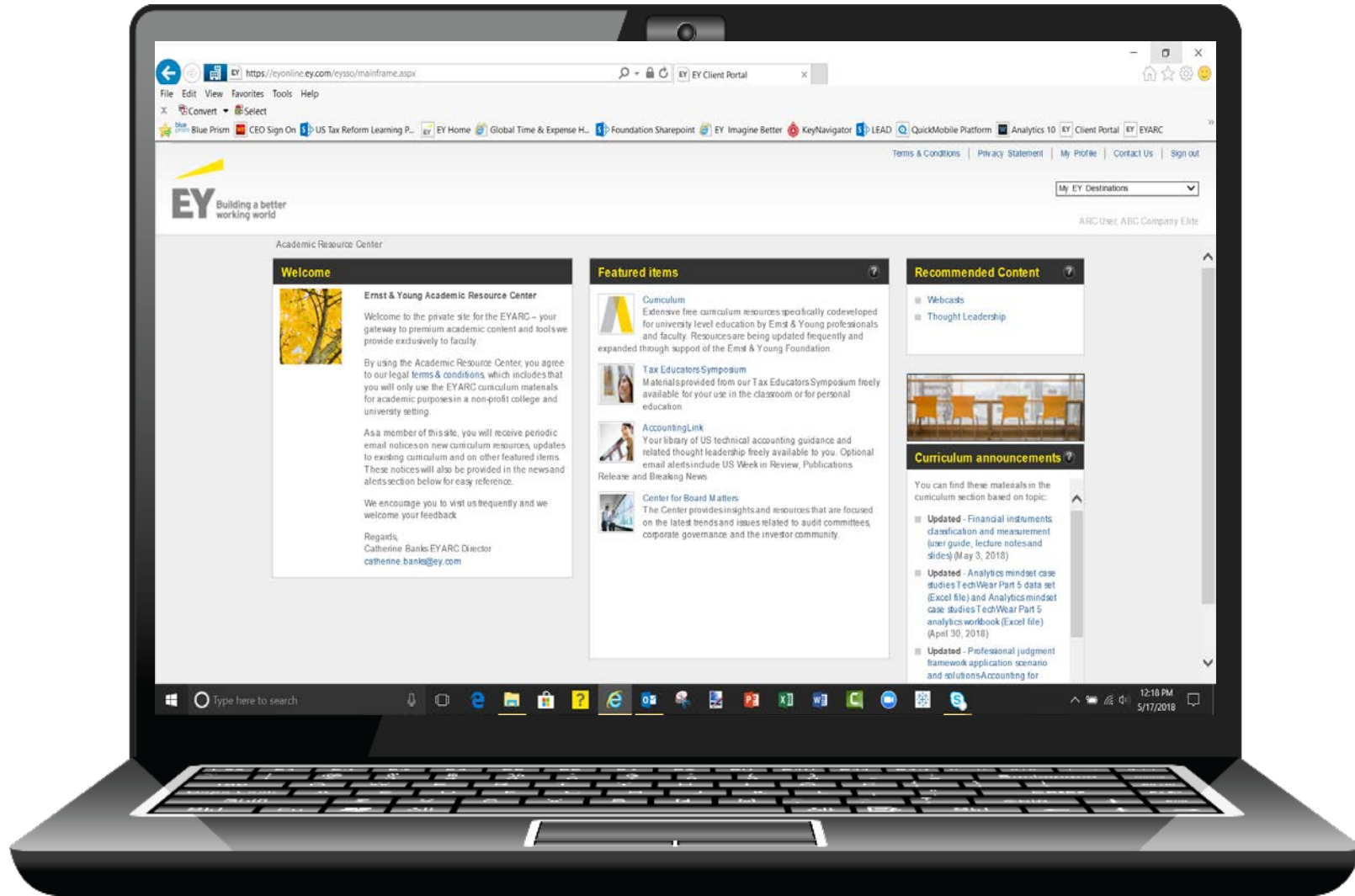


Innovation mindset curriculum offerings

- ▶ Videos on innovation from EYARC Colloquium
- ▶ Use of drones and automated counting software for inventory
- ▶ Robotic Process Automation:
 - ▶ Presentation
 - ▶ Case series for hands on (including how to videos):
 - ▶ Billing
 - ▶ Tax form preparation
 - ▶ Sales reporting
 - ▶ Bot-a-thon
- ▶ Blockchain primer and cases forthcoming




EY Academic Resource Center – website walkthrough



All curriculum offerings are found by clicking on this link

Academic Resource Center

Welcome



Ernst & Young Academic Resource Center

Welcome to the private site for the EYARC – your gateway to premium academic content and tools we provide exclusively to faculty.

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As a member of this site, you will receive periodic email notices on new curriculum resources, updates to existing curriculum and on other featured items. These notices will also be provided in the news and alerts section below for easy reference.

We encourage you to visit us frequently and we welcome your feedback

Regards,
Catherine Banks EYARC Director
catherine.banks@ey.com

Featured items


Curriculum
Extensive free curriculum resources specifically developed for university level education by Ernst & Young professionals and faculty. Resources are being updated frequently and expanded through support of the Ernst & Young Foundation.

AccountingLink
Your library of US technical accounting guidance and related thought leadership freely available to you. Optional email alerts include US Week in Review, Publications Release and Breaking News

Center for Board Matters
The Center provides insights and resources that are focused on the latest trends and issues related to audit committees, corporate governance and the investor community.

Recommended Content

- Webcasts
- Thought Leadership



Curriculum announcements

You can find these materials in the curriculum section based on topic:

- New - Analytics mindset case study-Tina's Trinkets (May 22, 2018)
- Updated - Analytics mindset master case guide (May 22, 2018)
- Updated - Financial instruments classification and measurement (user guide, lecture notes and slides) (May 3, 2018)
- Updated - Analytics mindset case studies TechWear Part 5 data set (Excel file) and Analytics mindset case studies TechWear Part 5 (Excel file)

EY Thoughtcenter webcasts and recommended Thought Leadership publications

Information about curriculum releases and updates is found here; dates are listed to ease tracking for currency

Key terms and conditions are found here:

- Non-profit higher ed use only
- You must maintain branding on any curriculum
- You will be subscribed to a periodic newsletter, *EYARC Access*

Users can subscribe to AccountingLink for technical accounting, regulatory and auditing updates or search for this content in publication libraries

The Center for Board Matters provides insights and resources on trends and issues for corporate governance, boards and audit committees and the investor community

Curriculum homepage

Curriculum



Academic Resource Center

The Ernst & Young Academic Resource Center (EYARC), sponsored by the Ernst & Young Foundation, is pleased to provide you with free curriculum resources focused on leading-edge business issues created through a collaboration of faculty and Ernst & Young professionals.

We update this curriculum frequently so you are encouraged to visit often to ensure that you have content that is the most current. The latest revision dates on materials are provided. Additionally, as an EYARC account holder, you will receive periodic communications regarding available curriculum in the newsletter, *EYARC Access*.

Please note that when using the curriculum, you are required to maintain the brand on all documents. Editable documents are provided where appropriate to enable you flexibility in choosing the material that you would like to cover and to add requirements or content as you desire. The materials may be distributed through paper copies or electronically to your students. Please protect solution sets as appropriate.

If you have questions or suggestions about the curriculum or have ideas about the way the EYARC can better support you, please contact Catherine Banks, EYARC Director, at catherine.banks@ey.com.

[The innovation mindset](#)

We are living in an age of transformation in which the marketplace is in constant demand for new and innovative ways of creating value. Our reliance on being connected is also at an all-time high, whether it's connectivity to data, interfaces, people or experiences; this is driving disruption and change at an unprecedented speed. An innovation mindset includes the ability to be agile and adaptive to constant change; the ability to think critically and with curiosity; the ability to solve problems creatively and embrace technology; the ability to redefine how work can get done faster, simpler and better and a willingness to try and fail. An innovation mindset is key to professionals' ability to thrive in this environment.

[The analytics mindset](#)

Analytics is changing the role of the business professional by placing analytics at the heart of all business decisions. Therefore, students need to prepare for this changing role by developing an analytics mindset. What is this? An analytics mindset is the ability to: ask the right questions; extract, transform and load relevant data (i.e., the ETL process); apply appropriate data analytics techniques; and interpret and share results with stakeholders. We offer a module that covers the introduction to the analytics mindset and a competency framework that outlines the competencies that support this mindset (a competency framework). We also offer a variety of presentations and cases as well that align with this framework to help develop these competencies in the classroom.

[Leases \(new standard ASC 842\)](#)

The FASB issued ASU 2016-02, which provides new guidance about accounting for leases. The new guidance is contained in ASC 842 Leases. We offer one module that covers a broad overview of the new standard.

[Financial instruments: classification and measurement \(new guidance under ASU 2016-01\)](#)

The FASB issued ASU 2016-01, which provides new guidance for the classification and measurement of certain financial instruments. We offer one module that covers a broad overview of the new guidance.

[Revenue recognition \(new standard ASC 606\)](#)

The FASB and IASB issued a comprehensive new revenue recognition standard, *Revenue Recognition – Revenue from Contracts with Customers* (ASC 606 (ASU 2014-09) and IFRS 15). We offer one module that covers a broad overview of the new standard.

Topic homepage



Academic Resource Center > Curriculum > The Analytics Mindset >

Academic Resource Center

Introduction to the analytics mindset

Introduction to data visualization

Master case guide

Big Deals case

DuPont case

Tech Wear case

P-card case

Gamification case

Viz-a-thon case

Temp Health case

IntegrateCo case

Tech Explorer case

Peach State University Hotel case

Trina's Trinkets case

The introduction to the analytics mindset module includes a user guide, competency framework (that defines the analytics mindset and corresponding competencies), lecture notes and slides.

This material can also be supplemented with additional presentation and video materials from our EYARC Colloquium as shown below.

See the tabs at the top right of this page for analytics mindset cases.

User guide: (Last update July 15, 2016)

(MS Word)

(PDF)

Competency framework: (Last update June 7, 2017)

(MS Word)

(PDF)

Lecture notes: (Last update July 15, 2016)

(MS Word)

(PDF)

Slides: (Last update July 15, 2016)

(MS Powerpoint)

(PDF)

The following slides and videos were presented at the 2015 EYARC Colloquium and can supplement the introductory module.

The analytics transformation (Last update July 27, 2015)

(MS Powerpoint)

(PDF)

Video link: http://rsvp.ey.com/CSG3/?EYARC_Analytics_Transformation

The implication of analytics on professional services (Last update July 15, 2015)

(MS Powerpoint)

(PDF)

Video link: http://rsvp.ey.com/CSG3/?EYARC_Implications_of_Analytics

Analytics delivery methods (Last update July 15, 2015)

(MS Powerpoint)

(PDF)

Analytics in the corporate environment (Last update July 15, 2015)

Additional EY resources on The Analytics Mindset

10 things you need to know about rich data and reporting - February 2018

Overseeing strategy in a digital age - February 2018

Global Forensic Data Analytics Survey - February 2018

The Impact of digital technologies on internal audit - January 2017

Digital Innovation and transformation in the finance organization - January 2017

Data & Advanced Analytics: High Stakes, High Rewards, a report developed by EY and Forbes Insights

CAQ "Profession in Focus" Video Interview with EY's Americas Assurance Innovation Leader - October 2018 highlighting the opportunities, challenges and career implications of analytics for audit and the importance of an analytics mindset

Big data and analytics in the audit process - September 2015

Becoming an analytics driven organization - September 2015

Ready for take off?

Contact Catherine Banks (catherine.banks@ey.com) to:



- ▶ Learn more about the curriculum topics and offerings
- ▶ Discuss integration of curriculum
- ▶ Get demo of EY Helix General Ledger Analyzer for students
- ▶ Request an EYARC account for any other faculty friends



Busy season wellbeing and vitality

- ▶ Theme weeks
- ▶ Wellbeing and vitality communications and sharing
- ▶ Shout outs
- ▶ Engagement team spotlights
- ▶ Virtual visits

The image shows a digital communication graphic for 'Busy Season Weekly Week One'. At the top left is the EY logo with the tagline 'Building a better working world'. To its right is a cartoon character holding a sign that says 'Busy Season Weekly'. The main title 'Busy Season Weekly' is in a large, bold font, with 'Week One' underneath it. Below this is a dark grey banner with the text 'WELCOME TO THE BSW!' in red. Underneath the banner, it says 'Every week we will introduce a theme.' followed by 'This week is HAT WEEK!' in large yellow letters. Below that, there is a paragraph of text: 'The idea is engagement teams will coordinate the theme into a team picture and [submit here](#). Get creative, have fun and share your team photos! They will be posted along with the shout outs the following week. Can't wait to see the future weekly themes? For you planners, scroll to the bottom and let the planning begin!'. In the center is a photo of a dog wearing a blue sequined hat and sunglasses, with the text 'put a hat on it' overlaid. At the bottom, there is a navigation bar with tabs for 'Week 1' through 'Week 7', with 'Week 1' highlighted. Below the navigation bar are two main sections: 'Wellbeing+Vitality' with a small table icon below it, and 'Virtual Visit' with the text 'Need a change of scenery but can't get away right now? (We understand!) Today is your lucky day! Each week a city will be...'.

EY Building a better working world

Busy Season Weekly
Week One

WELCOME TO THE BSW!

Every week we will introduce a theme.

This week is HAT WEEK!

The idea is engagement teams will coordinate the theme into a team picture and [submit here](#). Get creative, have fun and share your team photos! They will be posted along with the shout outs the following week. Can't wait to see the future weekly themes? For you planners, scroll to the bottom and let the planning begin!

put a hat on it

Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 | Week 7

Wellbeing+Vitality

Virtual Visit

Need a change of scenery but can't get away right now? (We understand!) Today is your lucky day! Each week a city will be...

10X Digital Ambassador Program

- ▶ Unique, two week audit intern experience
- ▶ Advanced learning of data analytics tools
- ▶ Work alongside teams to develop digital solutions
- ▶ Exposure to digital and innovation thought leadership and emerging technologies
- ▶ Foster suits and jeans environment

