

# STAA57 Final Project

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March 30, 2025

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```
library(tidyverse)
```

```
## -- Attaching core tidyverse packages ----- tidyverse 2.0.0 --
## v dplyr      1.1.4      v readr      2.1.5
## v forcats    1.0.0      v stringr   1.5.1
## v ggplot2    3.5.1      v tibble    3.2.1
## v lubridate  1.9.4      v tidyr     1.3.1
## v purrr      1.0.2
## -- Conflicts ----- tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()     masks stats::lag()
## i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors
```

```
library(dplyr)
library(dplyr)
library(knitr)
library(stringr)
```

```
##      Sector Last.name First.name      Salary Benefits
## 1 Colleges   Aarts      Cheri $113,586.57  $71.01
## 2 Colleges   Aaslepp      Drew $113,685.85  $117.26
## 3 Colleges   Abba        Corinne $102,214.17  $117.36
## 4 Colleges   Abbott      Brian $102,855.46  $117.36
## 5 Colleges   Abbott      Kathleen $160,854.89  $326.33
## 6 Colleges   Abbott      Timothy M $119,452.26  $71.01
##
##                                     Employer
## 1                                     Fanshawe College Of Applied Arts and Technology
## 2   Humber College Institute Of Technology and Advanced Learning
## 3                                     George Brown College Of Applied Arts and Technology
## 4 Conestoga College Institute Of Technology and Advanced Learning
## 5                                     George Brown College Of Applied Arts and Technology
## 6                                     Seneca College Of Applied Arts and Technology
```

##		Job.title	Year
## 1		Professor	2020
## 2		Professor	2020
## 3		Librarian	2020
## 4		Professor	2020
## 5	Associate Dean, Centre for Continuous Learning		2020
## 6		Professor	2020

##	Sector	Last.Name	First.Name	Salary.Paid	Taxable.Benefits
## 1	Colleges	Aarts	Cheri	111359.1	68.04
## 2	Colleges	Aaslepp	Drew	104315.4	110.88
## 3	Colleges	Abbas	Sadiq	111442.4	68.16
## 4	Colleges	Abbott	Kathleen	162020.1	283.34
## 5	Colleges	Abbott	Timothy M	116898.8	68.04
## 6	Colleges	Abbott	Valerie	111451.5	110.76
##					Employer
## 1					Fanshawe College Of Applied Arts and Technology
## 2	Humber				College Institute Of Technology and Advanced Learning
## 3					Algonquin College Of Applied Arts and Technology
## 4					George Brown College Of Applied Arts and Technology
## 5					Seneca College Of Applied Arts and Technology
## 6	Conestoga				College Institute Of Technology and Advanced Learning
##					Job.Title
## 1					Professor
## 2					Professor
## 3					Professor
## 4	Associate Dean, Centre for Continuous Learning				
## 5					Professor
## 6					Professor

##	Sector	Last.Name	First.Name	Salary.Paid	Taxable.Benefits
## 1	Colleges	Jensen	Cheryl	337533.2	3408.12
## 2	Colleges	Brule	Claude	230976.8	374.96
## 3	Colleges	Wotherspoon	Doug	230788.4	186.58
## 4	Colleges	Mcnair	Duane	221744.6	366.12
## 5	Colleges	Stanbra	Laura	221744.6	366.12
## 6	Colleges	Anderson	Scott	194628.0	331.04

##		Employer
## 1	Algonquin	College
## 2	Algonquin	College
## 3	Algonquin	College
## 4	Algonquin	College
## 5	Algonquin	College
## 6	Algonquin	College
##		
##		Job.Title
## 1		President
## 2		Senior Vice President Academic
## 3		Vice President Innovation and Strategy
## 4		Vice President Finance and Administration
## 5		Vice President Student Services
## 6	Executive Director	Communications Marketing External Relations

##	Sector	Last.Name	First.Name	Salary.Paid	Taxable.Benefits
## 1	Colleges	Abiscott	Alexa	197073.2	2033.69
## 2	Colleges	Ahn	Song Ho	114331.6	51.57
## 3	Colleges	Aitken	Sharon	118650.8	1250.00
## 4	Colleges	Ali	Shirook	104398.3	101.50

## 5	Colleges	Allcott Austin Micha	124307.7	1264.54
## 6	Colleges	Andrews Greg	100208.7	62.88
##				Employer
## 1	Sheridan College	Institute of Technology and Advanced Learning		
## 2	Sheridan College	Institute of Technology and Advanced Learning		
## 3	Sheridan College	Institute of Technology and Advanced Learning		
## 4	Sheridan College	Institute of Technology and Advanced Learning		
## 5	Sheridan College	Institute of Technology and Advanced Learning		
## 6	Sheridan College	Institute of Technology and Advanced Learning		
##			Job.Title	Calendar.Year
## 1	General Counsel And Information Privacy Officer			2017
## 2	Visualization Researcher - Part-Time Faculty			2017
## 3	Director Development and Campaign			2017
## 4	Professor			2017
## 5	Dean			2017
## 6	Professor			2017

##	Sector	Last.Name	First.Name	Salary.Paid	Taxable.Benefits
## 1	Colleges	Abiscott	Alexa	197073.2	2033.69
## 2	Colleges	Ahn	Song Ho	114331.6	51.57
## 3	Colleges	Aitken	Sharon	118650.8	1250.00
## 4	Colleges	Ali	Shirook	104398.3	101.50
## 5	Colleges	Allcott Austin Micha		124307.7	1264.54
## 6	Colleges	Andrews Greg		100208.7	62.88
##					Employer
## 1	Sheridan College	Institute of Technology and Advanced Learning			
## 2	Sheridan College	Institute of Technology and Advanced Learning			
## 3	Sheridan College	Institute of Technology and Advanced Learning			
## 4	Sheridan College	Institute of Technology and Advanced Learning			
## 5	Sheridan College	Institute of Technology and Advanced Learning			
## 6	Sheridan College	Institute of Technology and Advanced Learning			
##				Job.Title	Calendar.Year
## 1	General Counsel And Information Privacy Officer				2017
## 2	Visualization Researcher - Part-Time Faculty				2017
## 3	Director Development and Campaign				2017
## 4	Professor				2017
## 5	Dean				2017
## 6	Professor				2017

##		Sector	Last.Name	First.Name	Salary.Paid
## 1	Government of Ontario - Ministries	Aniol	Richard		106143.8
## 2	Government of Ontario - Ministries	Bennett	Phyllis		116374.2
## 3	Government of Ontario - Ministries	Bliss	Rose		104306.1
## 4	Government of Ontario - Ministries	Bozzo	Sandra		129825.8
## 5	Government of Ontario - Ministries	Carr	Douglas		192375.4
## 6	Government of Ontario - Ministries	Carty	Stephen		124071.8
##	Taxable.Benefits		Employer		
## 1	\$177.35	Aboriginal Affairs			
## 2	\$187.86	Aboriginal Affairs			
## 3	\$177.79	Aboriginal Affairs			
## 4	\$187.79	Aboriginal Affairs			
## 5	\$296.82	Aboriginal Affairs			
## 6	\$203.23	Aboriginal Affairs			

## 1	Senior Negotiator / Négociateur
## 2	Manager, Issues Management & Media Relations / Chef, gestions des questions d'intérêt et relations avec
## 3	Manager, Performance Measures & Data / Chef, mesures et données o

## 4 Manager, Aboriginal Relationships / Chef, relations avec les  
 ## 5 Assistant Deputy Minister, Negotiations & Reconciliation / Sous-ministre adjoint, négociations et ré  
 ## 6 Director, Negotiations / Directeur, n  
 ## Calendar.Year  
 ## 1 2015  
 ## 2 2015  
 ## 3 2015  
 ## 4 2015  
 ## 5 2015  
 ## 6 2015

##	Sector	Last.name	First.Name	Salary.Paid
## 1	Government of Ontario - Ministries	Almond	Margot	123153.6
## 2	Government of Ontario - Ministries	Aniol	Richard	102860.6
## 3	Government of Ontario - Ministries	Bennett	Phyllis	114399.5
## 4	Government of Ontario - Ministries	Bird	Anne	103033.9
## 5	Government of Ontario - Ministries	Bliss	Rose	102045.8
## 6	Government of Ontario - Ministries	Carr	Douglas	185661.9

##	Taxable.Benefits	Employer
## 1	204.96	Aboriginal Affairs
## 2	173.98	Aboriginal Affairs
## 3	189.54	Aboriginal Affairs
## 4	176.37	Aboriginal Affairs
## 5	175.66	Aboriginal Affairs
## 6	298.74	Aboriginal Affairs

## 1 Director, Corporate Management / Directrice, gestion  
 ## 2 Senior Negotiator / Négociat  
 ## 3 Manager, Issues Management and Media Relations / Chef, gestions des questions d'intérêt et relations av  
 ## 4 Team Lead /  
 ## 5 Manager, Performance Measures and Data / Chef, mesures et données  
 ## 6 Assistant Deputy Minister, Negotiations and Reconciliation / Sous-ministre adjoint, négociations et r  
 ## Calendar.year  
 ## 1 2014  
 ## 2 2014  
 ## 3 2014  
 ## 4 2014  
 ## 5 2014  
 ## 6 2014

##	Sector	Last.Name	First.Name	Salary.Paid	Taxable.Benefits
## 1	Colleges	ABBAS	SADIQ	102186.0	114.48
## 2	Colleges	AGATE	JEFFERY MICHAEL	108564.6	371.78
## 3	Colleges	AL-AZZAWI	ABDUL	102186.0	173.44
## 4	Colleges	ALLAIRE	DAN	103738.8	355.81
## 5	Colleges	ALLEN	IAN D.	104255.2	114.48
## 6	Colleges	ALMUHTADI	WAHAB	104893.1	173.44

##	Employer	Job.Title	Calendar.Year
## 1	Algonquin College	Professor	2013
## 2	Algonquin College	Manager, Counselling and Testing Services	2013
## 3	Algonquin College	Professor	2013
## 4	Algonquin College	Manager, Client Support Services	2013
## 5	Algonquin College	Professor	2013
## 6	Algonquin College	Professor	2013

##	Sector	Last.Name	First.Name	Salary.Paid	Taxable.Benefits
## 1	Colleges	ABBAS	SADIQ	102186.0	119.88

## 2	Colleges	AGATE	JEFFERY MICHAEL	104656.6	335.15
## 3	Colleges	AL-AZZAWI	ABDUL	103133.5	185.88
## 4	Colleges	ALLAN	GAIL	104893.1	185.88
## 5	Colleges	ALLEN	IAN D.	104140.8	119.88
## 6	Colleges	ALMUHTADI	WAHAB	104893.1	185.88
##	Employer				Job.Title Calendar.Year
## 1	Algonquin College				Professor 2012
## 2	Algonquin College				Manager, Counselling and Testing Services 2012
## 3	Algonquin College				Professor 2012
## 4	Algonquin College				Professor 2012
## 5	Algonquin College				Professor 2012
## 6	Algonquin College				Professor 2012
##	Sector	Last.Name	First.Name	Salary.Paid	Taxable.Benefits Employer
## 1	Colleges	ABBAS	SADIQ	\$100,763.83	\$120.42 Algonquin College
## 2	Colleges	ADAMYK	MIKE	\$100,814.67	\$175.50 Algonquin College
## 3	Colleges	AL-AZZAWI	ABDUL	\$103,485.49	\$186.42 Algonquin College
## 4	Colleges	ALLAN	GAIL	\$103,485.49	\$186.42 Algonquin College
## 5	Colleges	ALLEN	IAN D.	\$102,692.85	\$120.42 Algonquin College
## 6	Colleges	ALMUHTADI	WAHAB	\$103,485.49	\$186.42 Algonquin College
##	Job.Title	Calendar.Year			
## 1	Professor	2011			
## 2	Professor	2011			
## 3	Professor	2011			
## 4	Professor	2011			
## 5	Professor	2011			
## 6	Professor	2011			
##	Sector	Last.Name	First.Name	Salary.Paid	Taxable.Benefits
## 1	Colleges	ABRAHAM	STEPHEN	\$136,704.67	\$547.02
## 2	Colleges	ALLAN	GAIL	\$101,464.04	\$192.36
## 3	Colleges	ALMUHTADI	WAHAB	\$101,464.04	\$192.36
## 4	Colleges	AUBUT	JOANN	\$120,387.58	\$488.13
## 5	Colleges	BALASEVICIUS	DEBRA	\$121,202.26	\$486.09
## 6	Colleges	BARKER	GERRY A.	\$201,088.93	\$716.75
##	Employer				
## 1	Algonquin College				
## 2	Algonquin College				
## 3	Algonquin College				
## 4	Algonquin College				
## 5	Algonquin College				
## 6	Algonquin College				
##					Job.Title
## 1	Director, Information Technology Services -				Chief Information Officer
## 2					Professor
## 3					Professor
## 4					Chair, Allied Health Programs
## 5					Chair, Health and Community Studies Department
## 6					Vice President, Human Resources
##	Calendar.Year				
## 1	2010				
## 2	2010				
## 3	2010				
## 4	2010				
## 5	2010				
## 6	2010				
##	Sector	Last.Name	First.Name	Salary.Paid	Taxable.Benefits

## 1	Colleges	ABRAHAM	STEPHEN	\$136,794.34	\$622.39
## 2	Colleges	ALMUHTADI	WAHAB	\$107,007.81	\$193.02
## 3	Colleges	ANDERSON	JEREMY	\$104,586.89	\$193.02
## 4	Colleges	AUBUT	JOANN	\$123,287.56	\$552.82
## 5	Colleges	BALASEVICIUS	DEBRA	\$123,020.57	\$552.82
## 6	Colleges	BARKER	GERRY A.	\$198,409.06	\$809.90
##	Employer				
## 1	Algonquin College				
## 2	Algonquin College				
## 3	Algonquin College				
## 4	Algonquin College				
## 5	Algonquin College				
## 6	Algonquin College				
##					Job.Title
## 1	Director, Information Technology Services - Chief Information Officer				
## 2					Professor
## 3					Professor
## 4					Chair, Allied Health Programs
## 5					Chair, Health & Community Studies Department
## 6					Vice President, Human Resources
##	Calendar.Year				
## 1	2009				
## 2	2009				
## 3	2009				
## 4	2009				
## 5	2009				
## 6	2009				
##	Sector	Last.Name	First.Name	Salary.Paid	Taxable.Benefits
## 1	Colleges	ABRAHAM	STEPHEN	\$135,053.28	\$716.86
## 2	Colleges	ALEXANDRIDIS	ANGELOS	\$128,836.81	\$200.92
## 3	Colleges	AUBUT	JOANN	\$125,064.36	\$651.15
## 4	Colleges	BALASEVICIUS	DEBRA	\$116,035.76	\$609.98
## 5	Colleges	BARKER	GERRY A	\$176,482.85	\$887.80
## 6	Colleges	BARNABE	LOUISE M	\$102,327.70	\$542.09
##	Employer				
## 1	Algonquin College				
## 2	Algonquin College				
## 3	Algonquin College				
## 4	Algonquin College				
## 5	Algonquin College				
## 6	Algonquin College				
##					Job.Title
## 1	Director, Information Technology Services/Chief Information Officer				
## 2					Professor
## 3					Executive Dean, Academic Development
## 4					Chair, Health & Community Studies Department
## 5					Vice President, Human Resources
## 6					Chair, Business Sector
##	Calendar.Year				
## 1	2008				
## 2	2008				
## 3	2008				
## 4	2008				
## 5	2008				
## 6	2008				
##	Sector	Last.Name	First.Name	Salary.Paid	Taxable.Benefits

## 1	Colleges	ABRAHAM	STEPHEN	\$131,895.52	\$760.97
## 2	Colleges	AUBUT	JOANN	\$111,736.56	\$650.84
## 3	Colleges	BALASEVICIUS	DEBRA	\$118,839.63	\$693.74
## 4	Colleges	BARKER	GERRY A	\$152,607.80	\$888.56
## 5	Colleges	BOOGERD	JAN	\$111,736.56	\$650.84
## 6	Colleges	BRAMBURGER	JAMIE	\$103,352.30	\$178.23
##	Employer				
## 1	Algonquin College				
## 2	Algonquin College				
## 3	Algonquin College				
## 4	Algonquin College				
## 5	Algonquin College				
## 6	Algonquin College				
##				Job.Title	
## 1	Director, Information Technology Services/Chief Information Officer				
## 2	Chair, Allied Health Programs				
## 3	Chair, Health & Community Studies Department				
## 4	Executive Dean, Faculty of Health, Public Safety & Community Studies				
## 5	Chair, Architecture/Civil/Geographic Information Systems Department				
## 6	Manager, Community & Student Affairs				
##	Calendar.Year				
## 1	2007				
## 2	2007				
## 3	2007				
## 4	2007				
## 5	2007				
## 6	2007				

##	Sector	Last.Name	First.Name	Salary.Paid	Taxable.Benefits	Employer
## 1	Crown Agencies	BROWN	GREG	\$108,982.53	\$14,679.09	Agricorp
## 2	Crown Agencies	GALLAGHER	JOCELYN	\$110,895.04	\$424.54	Agricorp
## 3	Crown Agencies	IP	STEPHEN	\$107,843.92	\$6,422.84	Agricorp
## 4	Crown Agencies	JACKIW	RANDY	\$163,357.45	\$9,089.10	Agricorp
## 5	Crown Agencies	MCMORRIS	MIKE	\$110,629.35	\$430.18	Agricorp
## 6	Crown Agencies	STROETER	REINHOLD	\$123,332.69	\$6,476.72	Agricorp
##				Job.Title	Calendar.Year	
## 1	Executive Director, Business Development				2006	
## 2	Director, Human Resources				2006	
## 3	Director, Information Technology				2006	
## 4	Chef Executive Officer				2006	
## 5	Director, Operations				2006	
## 6	Director, Corporate Services				2006	

##	Sector	Last.Name	First.Name	Salary.Paid	Taxable.Benefits
## 1	Colleges	ABRAHAM	STEPHEN	\$102,543.28	\$549.29
## 2	Colleges	AUBUT	JOANN	\$100,391.51	\$524.04
## 3	Colleges	BALASEVICIUS	DEBRA	\$104,561.36	\$557.28
## 4	Colleges	BARKER	GERRY A.	\$133,321.69	\$625.58
## 5	Colleges	BOOGERD	JAN	\$104,561.36	\$557.28
## 6	Colleges	BRULE	CLAUDE	\$108,378.11	\$557.61
##	Employer			Job.Title	Calendar.Year
## 1	Algonquin College	Dir., Information Technology Srvcs.			2005
## 2	Algonquin College	Chair, Allied Health Services			2005
## 3	Algonquin College	Chair, Health & Community Srvcs.			2005
## 4	Algonquin College	Exec. Dean, Hlth., Public Safety & Comm.			2005
## 5	Algonquin College	Chair, Architecture/Civil/GIS			2005
## 6	Algonquin College	Chair, Computer Studies			2005

##	Sector	Last.Name	First.Name	Salary.Paid	Taxable.Benefits	Employer
## 1	Colleges	BARKER	GERRY A.	\$107,089.79	\$138.69	Algonquin College
## 2	Colleges	BROCK	BARRY	\$111,294.44	\$41.04	Algonquin College
## 3	Colleges	BRULE	CLAUDE	\$106,718.45	\$134.70	Algonquin College
## 4	Colleges	BURKE	MARK	\$119,677.73	\$0.00	Algonquin College
## 5	Colleges	CARTER	GARRY	\$114,386.18	\$67.87	Algonquin College
## 6	Colleges	CORMIER	MARIE	\$119,717.32	\$76.56	Algonquin College

##	Job.Title	Calendar.Year
## 1	Dean, Police & Public Safety Institute	2004
## 2	Dir., Information Tech. Svcs.	2004
## 3	Chair, Computer Studies	2004
## 4	Sr. Account, Exec.	2004
## 5	Professor	2004
## 6	Dean, Sch. of Hlth. & Community Svcs.	2004

##	Sector	Last.Name	First.Name	Salary.Paid	Taxable.Benefits	Employer
## 1	Colleges	BROCK	BARRY	\$101,518.74	\$159.68	Algonquin College
## 2	Colleges	BURKE	MARK	\$102,603.21	\$0.00	Algonquin College
## 3	Colleges	CORMIER	MARIE	\$106,057.76	\$289.76	Algonquin College
## 4	Colleges	DWORSCHAK	HERMANN	\$108,217.26	\$181.89	Algonquin College
## 5	Colleges	FAULKNER	KAREN	\$103,459.99	\$181.89	Algonquin College
## 6	Colleges	GILLET	ROBERT	\$201,766.62	\$16,069.83	Algonquin College

##	Job.Title	Calendar.Year
## 1	Director, Information Technology Svcs	2003
## 2	Senior Account Executive	2003
## 3	Dean, School of Health & Community Svcs	2003
## 4	Academic	2003
## 5	Academic	2003
## 6	President	2003

##	Sector	Last.Name	First.Name	Salary.Paid	Taxable.Benefits	Employer
## 1	Colleges	CORMIER	MARIE	\$103,293.85	\$159.68	Algonquin College
## 2	Colleges	DONOVEN	NANCY	\$109,189.06	\$0.00	Algonquin College
## 3	Colleges	GILLET	ROBERT	\$198,917.04	\$18,925.24	Algonquin College
## 4	Colleges	GREER	JANINE	\$102,960.90	\$0.00	Algonquin College
## 5	Colleges	HAMILTON	JOHN	\$155,342.27	\$194.10	Algonquin College
## 6	Colleges	HANSON	RAYMONDE	\$147,037.42	\$194.58	Algonquin College

##	Job.Title	Calendar.Year
## 1	Dean, School of Health & Community Svcs	2002
## 2	Senior Sales Executive	2002
## 3	President	2002
## 4	Manager, Customized Contracts	2002
## 5	Vice-President, Finance & Admin.	2002
## 6	Vice-President, Academic	2002

##	X_id	Sector	Surname	First.Name	Salary.Paid	Taxable.Benefits
## 1	1	Colleges	CORMIER	MARIE	\$100,892.35	\$162.85
## 2	2	Colleges	GILLET	ROBERT	\$187,623.89	\$10,430.37
## 3	3	Colleges	HAMILTON	JOHN	\$143,139.95	\$224.02
## 4	4	Colleges	HANSON	RAYMONDE	\$123,784.96	\$224.72
## 5	5	Colleges	PAPADOLIAS	NICK	\$105,082.20	\$192.17
## 6	6	Colleges	THOMS	RICHARD	\$104,616.92	\$199.02

##	Employer	Position	Calendar.Year
## 1	Algonquin College	Dean, School of Health & Comm. Studies	2001
## 2	Algonquin College	President	2001
## 3	Algonquin College	VP, Finance & Admin.	2001
## 4	Algonquin College	Vice President, Academic Services	2001



## 5	Algonquin College	Director, Educational Services	2001
## 6	Algonquin College	Director, Marketing	2001

##	Sector	Last.Name	First.Name	Salary.Paid	Taxable.Benefits	Employer
## 1	Colleges	GILLET	ROBERT	\$166,098.26	\$10,826.56	Algonquin College
## 2	Colleges	HAMILTON	JOHN	\$118,978.35	\$5,433.30	Algonquin College
## 3	Colleges	HANSON	RAYMONDE	\$119,337.72	\$5,440.56	Algonquin College
## 4	Colleges	MORASH	FRANCINE	\$114,069.20	\$0.00	Algonquin College
## 5	Colleges	PATERSON	JANET	\$104,738.65	\$157.56	Algonquin College
## 6	Colleges	TEH	ALBERT	\$100,605.93	\$147.21	Algonquin College
##			Job.Title	Calendar.Year		
## 1			President	2000		
## 2			VP, Finance&Admin.	2000		
## 3	Vice President,	Academic Services		2000		
## 4		Sales Training Consultant		2000		
## 5		Director, Business Sector		2000		
## 6		Technical Supp. Specialist		2000		

##	X_id	Sector	Last.Name	First.Name	Salary.Paid	Taxable.Benefits
## 1	1	Colleges	CONROD	WILLIAM	\$103,428.18	\$5,375.72
## 2	2	Colleges	GILLET	ROBERT	\$147,293.02	\$11,311.15
## 3	3	Colleges	HAMILTON	JOHN	\$113,891.12	\$5,434.30
## 4	4	Colleges	HANSON	RAYMONDE	\$117,512.24	\$5,455.36
## 5	5	Colleges	REID	RICK	\$102,559.35	\$491.28
## 6	6	Colleges	WARBURTON	CHRISTOPHER	\$102,231.43	\$5,364.40
##		Employer		Job.Title	Calendar.Year	
## 1	Algonquin College		VP, Development	1999		
## 2	Algonquin College		President	1999		
## 3	Algonquin College		VP, Finance&Admin.	1999		
## 4	Algonquin College	Vice President,	Academic Services	1999		
## 5	Algonquin College	Director,	Hospitality&Tourism	1999		
## 6	Algonquin College	VP, Student Life&Human	Resources	1999		

##	Sector	Last.Name	First.Name	Salary.Paid	Taxable.Benefits
## 1	Colleges	GILLET	ROBERT	\$126,843.08	\$10,723.40
## 2	Colleges	HANSON	RAYMONDE	\$109,742.68	\$5,542.60
## 3	Colleges	MCTIERNAN	TIMOTHY	\$121,300.08	\$227.04
## 4	Colleges	JOHNSTON	JOHN	\$108,741.12	\$401.84
## 5	Colleges	SUMMERS	WILLIAM	\$102,496.12	\$678.22
## 6	Colleges	CHR\xc9TIEN	GISELE	\$104,741.79	\$496.96
##		Employer		Job.Title	Calendar.Year
## 1	Algonquin College		President	1998	
## 2	Algonquin College	Vice President,	Academic Services	1998	
## 3	Canadore College		President	1998	
## 4	Centennial College		President	1998	
## 5	Centennial College		Vice President, Academics	1998	
## 6	College Boreal		Pr\xe9sidente	1998	

# 1 Introduction

This is the beginning of our project report. We explore data from **Ontario’s Public Sector Salary Disclosure (PSSD)**, commonly referred to as the “Sunshine List,” from **1996 to 2020**.

The Sunshine List is published annually by the Government of Ontario to disclose the names, positions, and salaries of certain public sector employees earning above a specific threshold (historically \$100,000). Our goal is to investigate

trends, compare salary distributions, and gain insights into how different public sector roles and organizations have evolved over time.

Maybe keep what's below

Through this analysis, we aim to:

- Understand which job titles or sectors consistently appear at higher salary levels.
- Observe year-to-year changes in average or median salaries.
- Investigate how benefits compare across different roles and sectors.

Ultimately, our findings may help inform discussions about **public sector compensation**, **transparency**, and **policy** decisions in Ontario.

---

## 2 Description of the Dataset

We have annual CSV files from **1996** through **2020**, each containing salary disclosures for Ontario public sector employees. After cleaning, each dataset includes these key columns:

```
names(set2020)
```

```
## [1] "Sector"      "Last.name"   "First.name"  "Salary"      "Benefits"
## [6] "Employer"    "Job.title"   "Year"
```

```
names(set2019)
```

```
## [1] "Sector"      "Last.Name"   "First.Name"  "Salary.Paid"
## [5] "Taxable.Benefits" "Employer"    "Job.Title"   "Calendar.Year"
```

1. **Sector**: The broad classification of the public sector organization (e.g., Government, Hospitals, etc.).
2. **Last.Name**: The employee's last name.
3. **First.Name**: The employee's first name.
4. **Salary.Paid**: The total salary paid to the employee in that calendar year.
5. **Taxable.Benefits/Benifits**: The taxable benefits received by the employee.
6. **Employer**: The name of the employer or organization.
7. **Job.Title**: The employee's official position or title.
8. **Calendar.Year/Year**: The year for which the data applies (e.g., 1996, 1997, ..., 2020).

**Note:** Some CSVs have slightly different column names or formats (like \$ signs or commas in the salary fields). We will clean these to ensure consistency across all years.

---

### 3 Background of the Data

The dataset, spanning from **1996 to 2020**, offers a comprehensive view of public sector compensation in Ontario. Under the Public Sector Salary Disclosure Act, public sector organizations are required to disclose the salaries and taxable benefits of employees earning \$100,000 or more. These datasets include detailed information such as salary figures, taxable benefits, job positions, and employer names.

By compiling data over this extensive period, the dataset serves as a valuable resource for understanding long-term trends in public sector pay. Researchers can explore how wage structures have evolved, assess shifts in employment patterns, and examine the broader economic and policy impacts over time. This historical archive not only documents changes in compensation but also provides critical insights into the dynamics of public sector employment in Ontario.

---

#What is the overall Research Question

Below are some research questions for our analysis:

1. **Do colleges pay, on average, more than universities?**

We aim to test whether there is a statistically significant difference in average salaries between colleges and universities over the years. A two-sample t-test will be employed, examining whether the confidence interval for the difference in means excludes zero.

2. **Has the average public sector salary increased significantly over time from 1996 to 2020?**

his question investigates whether there is an upward trend in public sector salaries over the years. A simple linear regression model will be used, with the p-value for the year coefficient and its confidence interval indicating the significance of the trend.

3. **Do differences in salary across sectors (e.g., colleges vs. universities) persist even after controlling for year-to-year variations?**

This analysis will explore if sector-related differences in salaries remain statistically significant when adjusting for changes over time using multiple regression analysis.

4. **Is there a significant relationship between salary and taxable benefits among public sector employees?**

We will assess whether a higher salary is associated with higher taxable benefits by modeling their relationship with regression analysis. A significant regression coefficient (with a confidence interval not including zero) would suggest a meaningful association.

- On average from 1996 to 2020 which sector has the largest average salary?
- 
- Which sectors had the highest average salary for each year?
- 

Table and Charts

For some tables

-Table for each year the sector with largest average income

-Maybe some tables for each year the

•

Loading

#Merging all our Data sets from 1996 to 2020

The column names we will use are

Sector , Last.Name , First.Name, Salary.Paid, Benifits, Employer, Job.Title, Calendar.Year

```
##      Sector Last.Name First.Name Salary.Paid Taxable.Benefits
## 1 Colleges  Gillett   Robert $126,843.08      $15,237.07
## 2 Colleges   Hanson   Raymonde $102,604.32      $5,502.22
## 3 Colleges Mitchelson   Robert $106,199.60      $5,528.80
## 4 Colleges  Crombie    Glenn $115,811.32      $2,995.34
## 5 Colleges Henderson Catherine $127,313.00     $19,034.97
## 6 Colleges  Watters     Jean $111,999.94      $1,381.94
##      Employer                               Job.Title Calendar.Year
## 1      Algonquin                               President      1997
## 2      Algonquin                               V.P., Academic      1997
## 3      Algonquin V.P., Finance & Administration      1997
## 4      Cambrian                               President      1997
## 5 Centennial College                               President      1997
## 6      College Boreal                               President      1997
```

```
##      Sector Last.Name First.Name Salary.Paid
## 1 OTHER PUBLIC SECTOR EMPLOYERS  Kendall   Perry $194,890.40
## 2 OTHER PUBLIC SECTOR EMPLOYERS   Rehm    Juergen $115,603.62
## 3 OTHER PUBLIC SECTOR EMPLOYERS   Room    Robin $149,434.48
## 4      ONTARIO PUBLIC SERVICE    KNOX     KEN W $109,382.92
## 5              HOSPITALS      Cliff    Bruce $110,309.00
## 6              COLLEGES   Gillett    Robert $127,332.00
## Taxable.Benefits                               Employer
## 1      $711.24                               Addiction Research Foundation
## 2      $403.41                               Addiction Research Foundation
## 3      $512.58                               Addiction Research Foundation
## 4      $4,921.68       Agriculture,Food and Rural Affairs
## 5      $3,157.00       Ajax and Pickering General Hospital
## 6      $3,633.00 Algonquin College of Applied Arts and Technology
##      Job.Title Calendar.Year
## 1      President & CEO      1996
## 2 Dir., Soc. Eval. Research & Act. Dir., Clin. Research      1996
## 3      V.P., Research & Coordinator, Intern. Programs      1996
## 4      Deputy Minister      1996
## 5      President & CEO      1996
## 6      President      1996
```

## 4 Filter all irrelevant columns

```
set2020 = set2020 %>% rename(Last.Name = Last.name, First.Name = First.name, Salary.Paid = Salary, Taxable.Benefits = Taxable.Benefits)
set2020$Calendar.Year = 2020
set2020 = filter_data(set2020)
```

```
glimpse(set2020)
```

```
## Rows: 205,855
## Columns: 8
```

```
## $ Sector      <chr> "colleges", "colleges", "colleges", "colleges", "coll~
## $ Last.Name   <chr> "Aarts", "Aaslepp", "Abba", "Abbott", "Abbott", "Abbo~
## $ First.Name  <chr> "Cheri", "Drew", "Corinne", "Brian", "Kathleen", "Tim~
## $ Salary.Paid <dbl> 113586.6, 113685.9, 102214.2, 102855.5, 160854.9, 119~
## $ Taxable.Benefits <dbl> 71.01, 117.26, 117.36, 117.36, 326.33, 71.01, 121.14, ~
## $ Employer    <chr> "Fanshawe College Of Applied Arts and Technology", "H~
## $ Job.Title    <chr> "Professor", "Professor", "Librarian", "Professor", "~
## $ Calendar.Year <dbl> 2020, 2020, 2020, 2020, 2020, 2020, 2020, 2020, 2020, ~
```

```
set2019 = filter_data(set2019)
glimpse(set2019)
```

```
## Rows: 167,098
## Columns: 8
## $ Sector      <chr> "colleges", "colleges", "colleges", "colleges", "coll~
## $ Last.Name   <chr> "Aarts", "Aaslepp", "Abbas", "Abbott", "Abbott", "Abb~
## $ First.Name  <chr> "Cheri", "Drew", "Sadiq", "Kathleen", "Timothy M", "V~
## $ Salary.Paid <dbl> 111359.1, 104315.4, 111442.4, 162020.1, 116898.8, 111~
## $ Taxable.Benefits <dbl> 68.04, 110.88, 68.16, 283.34, 68.04, 110.76, 114.44, ~
## $ Employer    <chr> "Fanshawe College Of Applied Arts and Technology", "H~
## $ Job.Title    <chr> "Professor", "Professor", "Professor", "Associate Dea~
## $ Calendar.Year <int> 2019, 2019, 2019, 2019, 2019, 2019, 2019, 2019, 2019, ~
```

```
set2018 = filter_data(set2018)
glimpse(set2018)
```

```
## Rows: 151,375
## Columns: 8
## $ Sector      <chr> "colleges ", "colleges ", "colleges ", "colleges ", "~
## $ Last.Name   <chr> "Jensen", "Brule", "Wotherspoon", "Mcnair", "Stanbra"~
## $ First.Name  <chr> "Cheryl", "Claude", "Doug", "Duane", "Laura", "Scott"~
## $ Salary.Paid <dbl> 337533.2, 230976.8, 230788.4, 221744.6, 221744.6, 194~
## $ Taxable.Benefits <dbl> 3408.12, 374.96, 186.58, 366.12, 366.12, 331.04, 161.~
## $ Employer    <chr> "Algonquin College", "Algonquin College", "Algonquin ~
## $ Job.Title    <chr> "President", "Senior Vice President Academic", "Vice ~
## $ Calendar.Year <int> 2018, 2018, 2018, 2018, 2018, 2018, 2018, 2018, 2018, ~
```

```
set2017$Calendar.Year = 2017
set2017 = filter_data(set2017)
#set2017$Calendar.Year = as.double(set2017$Calendar.Year)
glimpse(set2017)
```

```
## Rows: 131,909
## Columns: 8
## $ Sector      <chr> "colleges", "colleges", "colleges", "colleges", "coll~
## $ Last.Name   <chr> "Abiscott", "Ahn", "Aitken", "Ali", "Allcott", "Andre~
## $ First.Name  <chr> "Alexa", "Song Ho", "Sharon", "Shirook", "Austin Mich~
## $ Salary.Paid <dbl> 197073.2, 114331.6, 118650.8, 104398.3, 124307.7, 100~
## $ Taxable.Benefits <dbl> 2033.69, 51.57, 1250.00, 101.50, 1264.54, 62.88, 62.8~
## $ Employer    <chr> "Sheridan College Institute of Technology and Advance~
## $ Job.Title    <chr> "General Counsel And Information Privacy Officer", "V~
## $ Calendar.Year <dbl> 2017, 2017, 2017, 2017, 2017, 2017, 2017, 2017, 2017, ~
```

```
set2016$Calendar.Year = 2016
set2016 = filter_data(set2016)
glimpse(set2016)
```

```
## Rows: 124,445
## Columns: 8
## $ Sector      <chr> "colleges", "colleges", "colleges", "colleges", "coll~
## $ Last.Name    <chr> "Abbas", "Abboud", "Agate", "Al-Azzawi", "Alexander",~
## $ First.Name   <chr> "Sadiq", "Nadim", "Jeffery M.", "Abdul", "Doug", "Sab~
## $ Salary.Paid  <dbl> 105595.4, 108393.1, 125779.6, 105595.4, 105595.4, 101~
## $ Taxable.Benefits <dbl> 84.24, 126.96, 325.58, 84.24, 126.96, 126.96, 292.20,~
## $ Employer     <chr> "Algonquin College", "Algonquin College", "Algonquin ~
## $ Job.Title    <chr> "Professor", "Professor", "Associate Director, Studen~
## $ Calendar.Year <dbl> 2016, 2016, 2016, 2016, 2016, 2016, 2016, 2016,~
```

```
set2015$Calendar.Year = 2015
set2015 = filter_data(set2015)
```

```
## Warning in filter_data(set2015): NAs introduced by coercion
```

```
glimpse(set2015)
```

```
## Rows: 115,920
## Columns: 8
## $ Sector      <chr> "government of ontario - ministries", "government of ~
## $ Last.Name    <chr> "Aniol", "Bennett", "Bliss", "Bozzo", "Carr", "Carty"~
## $ First.Name   <chr> "Richard", "Phyllis", "Rose", "Sandra", "Douglas", "S~
## $ Salary.Paid  <dbl> 106143.8, 116374.2, 104306.1, 129825.8, 192375.4, 124~
## $ Taxable.Benefits <dbl> 177.35, 187.86, 177.79, 187.79, 296.82, 203.23, 178.8~
## $ Employer     <chr> "Aboriginal Affairs", "Aboriginal Affairs", "Aborigin~
## $ Job.Title    <chr> "Senior Negotiator / Négociateur principal", "Manager~
## $ Calendar.Year <dbl> 2015, 2015, 2015, 2015, 2015, 2015, 2015, 2015,~
```

```
set2014 = set2014 %>% rename(Last.Name = Last.name, Job.Title = Job.title, Calendar.Year = Calendar.year)
set2014$Calendar.Year = 2014
set2014 = filter_data(set2014)
glimpse(set2014)
```

```
## Rows: 111,655
## Columns: 8
## $ Sector      <chr> "government of ontario - ministries", "government of ~
## $ Last.Name    <chr> "Almond", "Aniol", "Bennett", "Bird", "Bliss", "Carr"~
## $ First.Name   <chr> "Margot", "Richard", "Phyllis", "Anne", "Rose", "Doug~
## $ Salary.Paid  <dbl> 123153.6, 102860.6, 114399.5, 103033.9, 102045.8, 185~
## $ Taxable.Benefits <dbl> 204.96, 173.98, 189.54, 176.37, 175.66, 298.74, 204.9~
## $ Employer     <chr> "Aboriginal Affairs", "Aboriginal Affairs", "Aborigin~
## $ Job.Title    <chr> "Director, Corporate Management / Directrice, gestion~
## $ Calendar.Year <dbl> 2014, 2014, 2014, 2014, 2014, 2014, 2014, 2014,~
```

```
set2013$Calendar.Year = 2013
set2013 = filter_data(set2013)
glimpse(set2013)
```

```
## Rows: 97,916
## Columns: 8
## $ Sector      <chr> "colleges", "colleges", "colleges", "colleges", "coll~
## $ Last.Name   <chr> "ABBAS", "AGATE", "AL-AZZAWI", "ALLAIRE", "ALLEN", "A~
## $ First.Name  <chr> "SADIQ", "JEFFERY MICHAEL", "ABDUL", "DAN", "IAN D.",~
## $ Salary.Paid <dbl> 102186.0, 108564.6, 102186.0, 103738.8, 104255.2, 104~
## $ Taxable.Benefits <dbl> 114.48, 371.78, 173.44, 355.81, 114.48, 173.44, 114.4~
## $ Employer    <chr> "Algonquin College", "Algonquin College", "Algonquin ~
## $ Job.Title    <chr> "Professor", "Manager, Counselling and Testing Servic~
## $ Calendar.Year <dbl> 2013, 2013, 2013, 2013, 2013, 2013, 2013, 2013, ~
```

```
set2012$Calendar.Year = 2012
set2012 = filter_data(set2012)
glimpse(set2012)
```

```
## Rows: 88,542
## Columns: 8
## $ Sector      <chr> "colleges", "colleges", "colleges", "colleges", "coll~
## $ Last.Name   <chr> "ABBAS", "AGATE", "AL-AZZAWI", "ALLAN", "ALLEN", "ALM~
## $ First.Name  <chr> "SADIQ", "JEFFERY MICHAEL", "ABDUL", "GAIL", "IAN D.",~
## $ Salary.Paid <dbl> 102186.0, 104656.6, 103133.5, 104893.1, 104140.8, 104~
## $ Taxable.Benefits <dbl> 119.88, 335.15, 185.88, 185.88, 119.88, 185.88, 119.8~
## $ Employer    <chr> "Algonquin College", "Algonquin College", "Algonquin ~
## $ Job.Title    <chr> "Professor", "Manager, Counselling and Testing Servic~
## $ Calendar.Year <dbl> 2012, 2012, 2012, 2012, 2012, 2012, 2012, 2012, ~
```

```
set2011$Calendar.Year = 2011
set2011 = filter_data(set2011)
glimpse(set2011)
```

```
## Rows: 79,714
## Columns: 8
## $ Sector      <chr> "colleges", "colleges", "colleges", "colleges", "coll~
## $ Last.Name   <chr> "ABBAS", "ADAMYK", "AL-AZZAWI", "ALLAN", "ALLEN", "AL~
## $ First.Name  <chr> "SADIQ", "MIKE", "ABDUL", "GAIL", "IAN D.", "WAHAB", ~
## $ Salary.Paid <dbl> 100763.8, 100814.7, 103485.5, 103485.5, 102692.9, 103~
## $ Taxable.Benefits <dbl> 120.42, 175.50, 186.42, 186.42, 120.42, 186.42, 120.4~
## $ Employer    <chr> "Algonquin College", "Algonquin College", "Algonquin ~
## $ Job.Title    <chr> "Professor", "Professor", "Professor", "Professor", "~
## $ Calendar.Year <dbl> 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, ~
```

```
set2010$Calendar.Year = 2010
set2010 = filter_data(set2010)
glimpse(set2010)
```

```
## Rows: 71,684
## Columns: 8
## $ Sector      <chr> "colleges", "colleges", "colleges", "colleges", "coll~
## $ Last.Name   <chr> "ABRAHAM", "ALLAN", "ALMUHTADI", "AUBUT", "BALASEVICI~
## $ First.Name  <chr> "STEPHEN", "GAIL", "WAHAB", "JOANN", "DEBRA", "GERRY ~
## $ Salary.Paid <dbl> 136704.7, 101464.0, 101464.0, 120387.6, 121202.3, 201~
## $ Taxable.Benefits <dbl> 547.02, 192.36, 192.36, 488.13, 486.09, 716.75, 192.3~
## $ Employer    <chr> "Algonquin College", "Algonquin College", "Algonquin ~
## $ Job.Title    <chr> "Director, Information Technology Services - Chief In~
## $ Calendar.Year <dbl> 2010, 2010, 2010, 2010, 2010, 2010, 2010, 2010, ~
```

```
set2009$Calendar.Year = 2009
set2009 = filter_data(set2009)
glimpse(set2009)
```

```
## Rows: 64,218
## Columns: 8
## $ Sector      <chr> "colleges", "colleges", "colleges", "colleges", "coll~
## $ Last.Name    <chr> "ABRAHAM", "ALMUHTADI", "ANDERSON", "AUBUT", "BALASEV~
## $ First.Name   <chr> "STEPHEN", "WAHAB", "JEREMY", "JOANN", "DEBRA", "GERR~
## $ Salary.Paid  <dbl> 136794.3, 107007.8, 104586.9, 123287.6, 123020.6, 198~
## $ Taxable.Benefits <dbl> 622.39, 193.02, 193.02, 552.82, 552.82, 809.90, 482.8~
## $ Employer     <chr> "Algonquin College", "Algonquin College", "Algonquin ~
## $ Job.Title    <chr> "Director, Information Technology Services - Chief In~
## $ Calendar.Year <dbl> 2009, 2009, 2009, 2009, 2009, 2009, 2009, 2009, ~
```

```
set2008$Calendar.Year = 2008
set2008 = filter_data(set2008)
glimpse(set2008)
```

```
## Rows: 53,817
## Columns: 8
## $ Sector      <chr> "colleges", "colleges", "colleges", "colleges", "coll~
## $ Last.Name    <chr> "ABRAHAM", "ALEXANDRIDIS", "AUBUT", "BALASEVICIUS", "~
## $ First.Name   <chr> "STEPHEN", "ANGELOS", "JOANN", "DEBRA", "GERRY A", "L~
## $ Salary.Paid  <dbl> 135053.3, 128836.8, 125064.4, 116035.8, 176482.9, 102~
## $ Taxable.Benefits <dbl> 716.86, 200.92, 651.15, 609.98, 887.80, 542.09, 300.9~
## $ Employer     <chr> "Algonquin College", "Algonquin College", "Algonquin ~
## $ Job.Title    <chr> "Director, Information Technology Services/Chief Info~
## $ Calendar.Year <dbl> 2008, 2008, 2008, 2008, 2008, 2008, 2008, 2008, ~
```

```
set2007$Calendar.Year = 2007
set2007 = filter_data(set2007)
glimpse(set2007)
```

```
## Rows: 42,766
## Columns: 8
## $ Sector      <chr> "colleges", "colleges", "colleges", "colleges", "coll~
## $ Last.Name    <chr> "ABRAHAM", "AUBUT", "BALASEVICIUS", "BARKER", "BOOGER~
## $ First.Name   <chr> "STEPHEN", "JOANN", "DEBRA", "GERRY A", "JAN", "JAMIE~
## $ Salary.Paid  <dbl> 131895.5, 111736.6, 118839.6, 152607.8, 111736.6, 103~
## $ Taxable.Benefits <dbl> 760.97, 650.84, 693.74, 888.56, 650.84, 178.23, 207.4~
## $ Employer     <chr> "Algonquin College", "Algonquin College", "Algonquin ~
## $ Job.Title    <chr> "Director, Information Technology Services/Chief Info~
## $ Calendar.Year <dbl> 2007, 2007, 2007, 2007, 2007, 2007, 2007, 2007, ~
```

```
set2006$Calendar.Year = 2006
set2006 = filter_data(set2006)
glimpse(set2006)
```

```
## Rows: 34,199
## Columns: 8
## $ Sector      <chr> "crown agencies", "crown agencies", "crown agencies", ~
## $ Last.Name    <chr> "BROWN", "GALLAGHER", "IP", "JACKIW", "MCMORRIS", "ST~
## $ First.Name   <chr> "GREG", "JOCELYN", "STEPHEN", "RANDY", "MIKE", "REINH~
```



```
## $ Salary.Paid      <dbl> 108982.5, 110895.0, 107843.9, 163357.5, 110629.4, 123~
## $ Taxable.Benefits <dbl> 14679.09, 424.54, 6422.84, 9089.10, 430.18, 6476.72, ~
## $ Employer        <chr> "Agricorp", "Agricorp", "Agricorp", "Agricorp", "Agri~
## $ Job.Title        <chr> "Executive Director, Business Development", "Director~
## $ Calendar.Year    <dbl> 2006, 2006, 2006, 2006, 2006, 2006, 2006, 2006, ~
```

```
set2005$Calendar.Year = 2005
set2005 = filter_data(set2005)
glimpse(set2005)
```

```
## Rows: 27,461
## Columns: 8
## $ Sector          <chr> "colleges", "colleges", "colleges", "colleges", "coll~
## $ Last.Name        <chr> "ABRAHAM", "AUBUT", "BALASEVICIUS", "BARKER", "BOOGER~
## $ First.Name       <chr> "STEPHEN", "JOANN", "DEBRA", "GERRY A.", "JAN", "CLAU~
## $ Salary.Paid      <dbl> 102543.3, 100391.5, 104561.4, 133321.7, 104561.4, 108~
## $ Taxable.Benefits <dbl> 549.29, 524.04, 557.28, 625.58, 557.28, 557.61, 474.4~
## $ Employer        <chr> "Algonquin College", "Algonquin College", "Algonquin ~
## $ Job.Title        <chr> "Dir., Information Technology Srvcs.", "Chair, Allied~
## $ Calendar.Year    <dbl> 2005, 2005, 2005, 2005, 2005, 2005, 2005, 2005, ~
```

```
set2004$Calendar.Year = 2004
set2004 = filter_data(set2004)
glimpse(set2004)
```

```
## Rows: 23,253
## Columns: 8
## $ Sector          <chr> "colleges", "colleges", "colleges", "colleges", "coll~
## $ Last.Name        <chr> "BARKER", "BROCK", "BRULE", "BURKE", "CARTER", "CORMI~
## $ First.Name       <chr> "GERRY A.", "BARRY", "CLAUDE", "MARK", "GARRY", "MARI~
## $ Salary.Paid      <dbl> 107089.8, 111294.4, 106718.4, 119677.7, 114386.2, 119~
## $ Taxable.Benefits <dbl> 138.69, 41.04, 134.70, 0.00, 67.87, 76.56, 107.76, 0.~
## $ Employer        <chr> "Algonquin College", "Algonquin College", "Algonquin ~
## $ Job.Title        <chr> "Dean, Police & Public Safety Institute", "Dir., Info~
## $ Calendar.Year    <dbl> 2004, 2004, 2004, 2004, 2004, 2004, 2004, 2004, ~
```

```
set2003$Calendar.Year = 2003
set2003 = filter_data(set2003)
glimpse(set2003)
```

```
## Rows: 20,368
## Columns: 8
## $ Sector          <chr> "colleges", "colleges", "colleges", "colleges", "coll~
## $ Last.Name        <chr> "BROCK", "BURKE", "CORMIER", "DWORSCHAK", "FAULKNER", ~
## $ First.Name       <chr> "BARRY", "MARK", "MARIE", "HERMANN", "KAREN", "ROBERT~
## $ Salary.Paid      <dbl> 101518.7, 102603.2, 106057.8, 108217.3, 103460.0, 201~
## $ Taxable.Benefits <dbl> 159.68, 0.00, 289.76, 181.89, 181.89, 16069.83, 579.9~
## $ Employer        <chr> "Algonquin College", "Algonquin College", "Algonquin ~
## $ Job.Title        <chr> "Director, Information Technology Srvcs", "Senior Acc~
## $ Calendar.Year    <dbl> 2003, 2003, 2003, 2003, 2003, 2003, 2003, 2003, ~
```

```
set2002$Calendar.Year = 2002
set2002 = filter_data(set2002)
glimpse(set2002)
```

```
## Rows: 16,691
## Columns: 8
## $ Sector      <chr> "colleges", "colleges", "colleges", "colleges", "coll~
## $ Last.Name   <chr> "CORMIER", "DONOVEN", "GILLETT", "GREER", "HAMILTON",~
## $ First.Name  <chr> "MARIE", "NANCY", "ROBERT", "JANINE", "JOHN", "RAYMON~
## $ Salary.Paid <dbl> 103293.9, 109189.1, 198917.0, 102960.9, 155342.3, 147~
## $ Taxable.Benefits <dbl> 159.68, 0.00, 18925.24, 0.00, 194.10, 194.58, 159.68,~
## $ Employer    <chr> "Algonquin College", "Algonquin College", "Algonquin ~
## $ Job.Title    <chr> "Dean, School of Health & Community Srvcs", "Senior S~
## $ Calendar.Year <dbl> 2002, 2002, 2002, 2002, 2002, 2002, 2002, 2002, 2002,~
```

```
set2001$Calendar.Year = 2001
set2001 = set2001 %>% rename(Last.Name = Surname, Job.Title = Position)
set2001 = filter_data(set2001)
glimpse(set2001)
```

```
## Rows: 13,144
## Columns: 8
## $ Sector      <chr> "colleges", "colleges", "colleges", "colleges", "coll~
## $ Last.Name   <chr> "CORMIER", "GILLETT", "HAMILTON", "HANSON", "PAPADOLI~
## $ First.Name  <chr> "MARIE", "ROBERT", "JOHN", "RAYMONDE", "NICK", "RICHA~
## $ Salary.Paid <dbl> 100892.4, 187623.9, 143140.0, 123785.0, 105082.2, 104~
## $ Taxable.Benefits <dbl> 162.85, 10430.37, 224.02, 224.72, 192.17, 199.02, 203~
## $ Employer    <chr> "Algonquin College", "Algonquin College", "Algonquin ~
## $ Job.Title    <chr> "Dean, School of Health & Comm. Studies", "President"~
## $ Calendar.Year <dbl> 2001, 2001, 2001, 2001, 2001, 2001, 2001, 2001, 2001,~
```

```
set2000$Calendar.Year = 2000
set2000 = filter_data(set2000)
glimpse(set2000)
```

```
## Rows: 10,352
## Columns: 8
## $ Sector      <chr> "colleges", "colleges", "colleges", "colleges", "coll~
## $ Last.Name   <chr> "GILLETT", "HAMILTON", "HANSON", "MORASH", "PATERSON"~
## $ First.Name  <chr> "ROBERT", "JOHN", "RAYMONDE", "FRANCINE", "JANET", "A~
## $ Salary.Paid <dbl> 166098.3, 118978.4, 119337.7, 114069.2, 104738.6, 100~
## $ Taxable.Benefits <dbl> 10826.56, 5433.30, 5440.56, 0.00, 157.56, 147.21, 536~
## $ Employer    <chr> "Algonquin College", "Algonquin College", "Algonquin ~
## $ Job.Title    <chr> "President", "VP, Finance&Admin.", "Vice President, A~
## $ Calendar.Year <dbl> 2000, 2000, 2000, 2000, 2000, 2000, 2000, 2000, 2000,~
```

```
set1999$Calendar.Year = 1999
set1999 = filter_data(set1999)
set1999 = set1999 %>%
  mutate(Calendar.Year = as.double(Calendar.Year))
glimpse(set1999)
```

```
## Rows: 8,125
## Columns: 8
## $ Sector      <chr> "colleges", "colleges", "colleges", "colleges", "coll~
## $ Last.Name   <chr> "CONROD", "GILLETT", "HAMILTON", "HANSON", "REID", "W~
## $ First.Name  <chr> "WILLIAM", "ROBERT", "JOHN", "RAYMONDE", "RICK", "CHR~
## $ Salary.Paid <dbl> 103428.2, 147293.0, 113891.1, 117512.2, 102559.4, 102~
## $ Taxable.Benefits <dbl> 5375.72, 11311.15, 5434.30, 5455.36, 491.28, 5364.40,~
```

```
## $ Employer      <chr> "Algonquin College", "Algonquin College", "Algonquin ~
## $ Job.Title     <chr> "VP, Development", "President", "VP, Finance&Admin.",~
## $ Calendar.Year <dbl> 1999, 1999, 1999, 1999, 1999, 1999, 1999, 1999, 1999,~
```

```
set1998$Calendar.Year = 1998
set1998 = filter_data(set1998)
glimpse(set1998)
```

```
## Rows: 6,296
## Columns: 8
## $ Sector      <chr> "colleges", "colleges", "colleges", "colleges", "coll~
## $ Last.Name   <chr> "GILLETT", "HANSON", "MCTIERNAN", "JOHNSTON", "SUMMER~
## $ First.Name  <chr> "ROBERT", "RAYMONDE", "TIMOTHY", "JOHN", "WILLIAM", "~
## $ Salary.Paid <dbl> 126843.1, 109742.7, 121300.1, 108741.1, 102496.1, 104~
## $ Taxable.Benefits <dbl> 10723.40, 5542.60, 227.04, 401.84, 678.22, 496.96, 14~
## $ Employer    <chr> "Algonquin College", "Algonquin College", "Canadore C~
## $ Job.Title   <chr> "President", "Vice President, Academic Services", "Pr~
## $ Calendar.Year <dbl> 1998, 1998, 1998, 1998, 1998, 1998, 1998, 1998, 1998,~
```

```
set1997$Calendar.Year = 1997
set1997 = filter_data(set1997)
glimpse(set1997)
```

```
## Rows: 5,378
## Columns: 8
## $ Sector      <chr> "colleges", "colleges", "colleges", "colleges", "coll~
## $ Last.Name   <chr> "Gillett", "Hanson", "Mitchelson", "Crombie", "Hender~
## $ First.Name  <chr> "Robert", "Raymonde", "Robert", "Glenn", "Catherine",~
## $ Salary.Paid <dbl> 126843.1, 102604.3, 106199.6, 115811.3, 127313.0, 111~
## $ Taxable.Benefits <dbl> 15237.07, 5502.22, 5528.80, 2995.34, 19034.97, 1381.9~
## $ Employer    <chr> "Algonquin", "Algonquin", "Algonquin", "Cambrian", "C~
## $ Job.Title   <chr> "President", "V.P., Academic", "V.P., Finance & Admin~
## $ Calendar.Year <dbl> 1997, 1997, 1997, 1997, 1997, 1997, 1997, 1997, 1997,~
```

```
set1996$Calendar.Year = 1996
set1996 = filter_data(set1996)
glimpse(set1996)
```

```
## Rows: 4,501
## Columns: 8
## $ Sector      <chr> "other public sector employers", "other public sector~
## $ Last.Name   <chr> "Kendall", "Rehm", "Room", "KNOX", "Cliff", "Gillett"~
## $ First.Name  <chr> "Perry", "Juergen", "Robin", "KEN W", "Bruce", "Rober~
## $ Salary.Paid <dbl> 194890.4, 115603.6, 149434.5, 109382.9, 110309.0, 127~
## $ Taxable.Benefits <dbl> 711.24, 403.41, 512.58, 4921.68, 3157.00, 3633.00, 55~
## $ Employer    <chr> "Addiction Research Foundation", "Addiction Research ~
## $ Job.Title   <chr> "President & CEO", "Dir., Soc. Eval. Research & Act. ~
## $ Calendar.Year <dbl> 1996, 1996, 1996, 1996, 1996, 1996, 1996, 1996, 1996,~
```

```
dataSet = bind_rows(set2020, set2019, set2018, set2017, set2016, set2015, set2014, set2013, set2012, set2011)
dataSet %>% group_by(Sector, Calendar.Year) %>% summarize(Avg.Salary = mean(Salary.Paid, na.rm = TRUE), Avg
```

```
## 'summarise()' has grouped output by 'Sector'. You can override using the
## 'groups' argument.
```

```
## # A tibble: 346 x 4
## # Groups:   Sector [52]
##   Sector  Calendar.Year Avg.Salary Avg.Tax.Benefits
##   <chr>      <dbl>      <dbl>      <dbl>
## 1 colleges    1996    117502.      4189.
## 2 colleges    1997    117045.      5822.
## 3 colleges    1998    120264.      4767.
## 4 colleges    1999    117595.      3346.
## 5 colleges    2000    123767.      2641.
## 6 colleges    2001    123043.      2189.
## 7 colleges    2002    119521.      1324.
## 8 colleges    2003    122833.      1504.
## 9 colleges    2004    121203.      1163.
## 10 colleges   2005    122922.      1395.
## # i 336 more rows
```