

a5 practice

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6/9/2021

```
library(ggplot2)
library(tidyverse)
```

```
## -- Attaching packages ----- tidyverse 1.3.1 --
```

```
## v tibble  3.1.1      v dplyr   1.0.6
## v tidyr   1.1.3      v stringr 1.4.0
## v readr   1.4.0      v forcats 0.5.1
## v purrr   0.3.4
```

```
## -- Conflicts ----- tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()     masks stats::lag()
```

Question 1

```
install.packages("XML", repos = "http://cran.us.r-project.org")
```

```
##
## The downloaded binary packages are in
## /var/folders/h_/rrx_j2fn6dq0hx7hkyk73vx80000gn/T//RtmphWZZ79/downloaded_packages
```

```
library(XML)
library(RCurl)
```

```
##
## Attaching package: 'RCurl'
```

```
## The following object is masked from 'package:tidyr':
##
## complete
```

```
file <- getURL("https://www.senate.gov/general/contact_information/senators_cfm.xml")
doc <- xmlParse(file)
r <- xmlRoot(doc)
final <- xmlToDataFrame(r)
final
```

##	member_full	last_name	first_name	party	state
## 1	Baldwin (D-WI)	Baldwin	Tammy	D	WI
## 2	Barrasso (R-WY)	Barrasso	John	R	WY
## 3	Bennet (D-CO)	Bennet	Michael F.	D	CO
## 4	Blackburn (R-TN)	Blackburn	Marsha	R	TN
## 5	Blumenthal (D-CT)	Blumenthal	Richard	D	CT
## 6	Blunt (R-MO)	Blunt	Roy	R	MO
## 7	Booker (D-NJ)	Booker	Cory A.	D	NJ
## 8	Boozman (R-AR)	Boozman	John	R	AR
## 9	Braun (R-IN)	Braun	Mike	R	IN
## 10	Brown (D-OH)	Brown	Sherrod	D	OH
## 11	Burr (R-NC)	Burr	Richard	R	NC
## 12	Cantwell (D-WA)	Cantwell	Maria	D	WA
## 13	Capito (R-WV)	Capito	Shelley Moore	R	WV
## 14	Cardin (D-MD)	Cardin	Benjamin L.	D	MD
## 15	Carper (D-DE)	Carper	Thomas R.	D	DE
## 16	Casey (D-PA)	Casey	Robert P., Jr.	D	PA
## 17	Cassidy (R-LA)	Cassidy	Bill	R	LA
## 18	Collins (R-ME)	Collins	Susan M.	R	ME
## 19	Coons (D-DE)	Coons	Christopher A.	D	DE
## 20	Cornyn (R-TX)	Cornyn	John	R	TX
## 21	Cortez Masto (D-NV)	Cortez Masto	Catherine	D	NV
## 22	Cotton (R-AR)	Cotton	Tom	R	AR
## 23	Cramer (R-ND)	Cramer	Kevin	R	ND
## 24	Crapo (R-ID)	Crapo	Mike	R	ID
## 25	Cruz (R-TX)	Cruz	Ted	R	TX
## 26	Daines (R-MT)	Daines	Steve	R	MT
## 27	Duckworth (D-IL)	Duckworth	Tammy	D	IL
## 28	Durbin (D-IL)	Durbin	Richard J.	D	IL
## 29	Ernst (R-IA)	Ernst	Joni	R	IA
## 30	Feinstein (D-CA)	Feinstein	Dianne	D	CA
## 31	Fischer (R-NE)	Fischer	Deb	R	NE
## 32	Gillibrand (D-NY)	Gillibrand	Kirsten E.	D	NY
## 33	Graham (R-SC)	Graham	Lindsey	R	SC
## 34	Grassley (R-IA)	Grassley	Chuck	R	IA
## 35	Hagerty (R-TN)	Hagerty	Bill	R	TN
## 36	Hassan (D-NH)	Hassan	Margaret Wood	D	NH
## 37	Hawley (R-MO)	Hawley	Josh	R	MO
## 38	Heinrich (D-NM)	Heinrich	Martin	D	NM
## 39	Hickenlooper (D-CO)	Hickenlooper	John W.	D	CO
## 40	Hirono (D-HI)	Hirono	Mazie K.	D	HI
## 41	Hoeven (R-ND)	Hoeven	John	R	ND
## 42	Hyde-Smith (R-MS)	Hyde-Smith	Cindy	R	MS
## 43	Inhofe (R-OK)	Inhofe	James M.	R	OK
## 44	Johnson (R-WI)	Johnson	Ron	R	WI
## 45	Kaine (D-VA)	Kaine	Tim	D	VA
## 46	Kelly (D-AZ)	Kelly	Mark	D	AZ
## 47	Kennedy (R-LA)	Kennedy	John	R	LA
## 48	King (I-ME)	King	Angus S., Jr.	I	ME
## 49	Klobuchar (D-MN)	Klobuchar	Amy	D	MN
## 50	Lankford (R-OK)	Lankford	James	R	OK
## 51	Leahy (D-VT)	Leahy	Patrick J.	D	VT
## 52	Lee (R-UT)	Lee	Mike	R	UT
## 53	Lujan (D-NM)	Lujan	Ben Ray	D	NM

## 54	Lummis (R-WY)	Lummis	Cynthia M.	R	WY
## 55	Manchin (D-WV)	Manchin	Joe, III	D	WV
## 56	Markey (D-MA)	Markey	Edward J.	D	MA
## 57	Marshall (R-KS)	Marshall	Roger	R	KS
## 58	McConnell (R-KY)	McConnell	Mitch	R	KY
## 59	Menendez (D-NJ)	Menendez	Robert	D	NJ
## 60	Merkley (D-OR)	Merkley	Jeff	D	OR
## 61	Moran (R-KS)	Moran	Jerry	R	KS
## 62	Murkowski (R-AK)	Murkowski	Lisa	R	AK
## 63	Murphy (D-CT)	Murphy	Christopher	D	CT
## 64	Murray (D-WA)	Murray	Patty	D	WA
## 65	Ossoff (D-GA)	Ossoff	Jon	D	GA
## 66	Padilla (D-CA)	Padilla	Alex	D	CA
## 67	Paul (R-KY)	Paul	Rand	R	KY
## 68	Peters (D-MI)	Peters	Gary C.	D	MI
## 69	Portman (R-OH)	Portman	Rob	R	OH
## 70	Reed (D-RI)	Reed	Jack	D	RI
## 71	Risch (R-ID)	Risch	James E.	R	ID
## 72	Romney (R-UT)	Romney	Mitt	R	UT
## 73	Rosen (D-NV)	Rosen	Jacky	D	NV
## 74	Rounds (R-SD)	Rounds	Mike	R	SD
## 75	Rubio (R-FL)	Rubio	Marco	R	FL
## 76	Sanders (I-VT)	Sanders	Bernard	I	VT
## 77	Sasse (R-NE)	Sasse	Ben	R	NE
## 78	Schatz (D-HI)	Schatz	Brian	D	HI
## 79	Schumer (D-NY)	Schumer	Charles E.	D	NY
## 80	Scott (R-FL)	Scott	Rick	R	FL
## 81	Scott (R-SC)	Scott	Tim	R	SC
## 82	Shaheen (D-NH)	Shaheen	Jeanne	D	NH
## 83	Shelby (R-AL)	Shelby	Richard C.	R	AL
## 84	Sinema (D-AZ)	Sinema	Kyrsten	D	AZ
## 85	Smith (D-MN)	Smith	Tina	D	MN
## 86	Stabenow (D-MI)	Stabenow	Debbie	D	MI
## 87	Sullivan (R-AK)	Sullivan	Dan	R	AK
## 88	Tester (D-MT)	Tester	Jon	D	MT
## 89	Thune (R-SD)	Thune	John	R	SD
## 90	Tillis (R-NC)	Tillis	Thom	R	NC
## 91	Toomey (R-PA)	Toomey	Patrick J.	R	PA
## 92	Tuberville (R-AL)	Tuberville	Tommy	R	AL
## 93	Van Hollen (D-MD)	Van Hollen	Chris	D	MD
## 94	Warner (D-VA)	Warner	Mark R.	D	VA
## 95	Warnock (D-GA)	Warnock	Raphael G.	D	GA
## 96	Warren (D-MA)	Warren	Elizabeth	D	MA
## 97	Whitehouse (D-RI)	Whitehouse	Sheldon	D	RI
## 98	Wicker (R-MS)	Wicker	Roger F.	R	MS
## 99	Wyden (D-OR)	Wyden	Ron	D	OR
## 100	Young (R-IN)	Young	Todd	R	IN
## 101	<NA>	<NA>	<NA>	<NA>	<NA>
##					address
## 1		709 Hart	Senate Office Building	Washington DC	20510
## 2		307 Dirksen	Senate Office Building	Washington DC	20510
## 3		261 Russell	Senate Office Building	Washington DC	20510
## 4		357 Dirksen	Senate Office Building	Washington DC	20510
## 5		706 Hart	Senate Office Building	Washington DC	20510

## 6	260 Russell	Senate	Office	Building	Washington	DC	20510
## 7	717 Hart	Senate	Office	Building	Washington	DC	20510
## 8	141 Hart	Senate	Office	Building	Washington	DC	20510
## 9	404 Russell	Senate	Office	Building	Washington	DC	20510
## 10	503 Hart	Senate	Office	Building	Washington	DC	20510
## 11	217 Russell	Senate	Office	Building	Washington	DC	20510
## 12	511 Hart	Senate	Office	Building	Washington	DC	20510
## 13	172 Russell	Senate	Office	Building	Washington	DC	20510
## 14	509 Hart	Senate	Office	Building	Washington	DC	20510
## 15	513 Hart	Senate	Office	Building	Washington	DC	20510
## 16	393 Russell	Senate	Office	Building	Washington	DC	20510
## 17	520 Hart	Senate	Office	Building	Washington	DC	20510
## 18	413 Dirksen	Senate	Office	Building	Washington	DC	20510
## 19	218 Russell	Senate	Office	Building	Washington	DC	20510
## 20	517 Hart	Senate	Office	Building	Washington	DC	20510\n
## 21	313 Hart	Senate	Office	Building	Washington	DC	20510
## 22	326 Russell	Senate	Office	Building	Washington	DC	20510\n
## 23	330 Hart	Senate	Office	Building	Washington	DC	20510
## 24	239 Dirksen	Senate	Office	Building	Washington	DC	20510
## 25	127A Russell	Senate	Office	Building	Washington	DC	20510
## 26	320 Hart	Senate	Office	Building	Washington	DC	20510
## 27	524 Hart	Senate	Office	Building	Washington	DC	20510
## 28	711 Hart	Senate	Office	Building	Washington	DC	20510
## 29	730 Hart	Senate	Office	Building	Washington	DC	20510
## 30	331 Hart	Senate	Office	Building	Washington	DC	20510
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## 42	702 Hart	Senate	Office	Building	Washington	DC	20510
## 43	205 Russell	Senate	Office	Building	Washington	DC	20510
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## 46	516 Hart	Senate	Office	Building	Washington	DC	20510
## 47	416 Russell	Senate	Office	Building	Washington	DC	20510
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## 50	316 Hart	Senate	Office	Building	Washington	DC	20510
## 51	437 Russell	Senate	Office	Building	Washington	DC	20510
## 52	361A Russell	Senate	Office	Building	Washington	DC	20510
## 53	498 Russell	Senate	Office	Building	Washington	DC	20510
## 54	124 Russell	Senate	Office	Building	Washington	DC	20510
## 55	306 Hart	Senate	Office	Building	Washington	DC	20510
## 56	255 Dirksen	Senate	Office	Building	Washington	DC	20510\n
## 57	479A Russell	Senate	Office	Building	Washington	DC	20510
## 58	317 Russell	Senate	Office	Building	Washington	DC	20510
## 59	528 Hart	Senate	Office	Building	Washington	DC	20510

## 60	531 Hart Senate Office Building Washington DC 20510
## 61	521 Dirksen Senate Office Building Washington DC 20510
## 62	522 Hart Senate Office Building Washington DC 20510
## 63	136 Hart Senate Office Building Washington DC 20510
## 64	154 Russell Senate Office Building Washington DC 20510
## 65	455 Russell Senate Office Building Washington DC 20510
## 66	112 Hart Senate Office Building Washington DC 20510
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## 76	332 Dirksen Senate Office Building Washington DC 20510
## 77	139 Russell Senate Office Building Washington DC 20510
## 78	722 Hart Senate Office Building Washington DC 20510
## 79	322 Hart Senate Office Building Washington DC 20510
## 80	502 Hart Senate Office Building Washington DC 20510
## 81	104 Hart Senate Office Building Washington DC 20510
## 82	506 Hart Senate Office Building Washington DC 20510
## 83	304 Russell Senate Office Building Washington DC 20510
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## 93	110 Hart Senate Office Building Washington DC 20510
## 94	703 Hart Senate Office Building Washington DC 20510
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## 96	309 Hart Senate Office Building Washington DC 20510
## 97	530 Hart Senate Office Building Washington DC 20510
## 98	555 Dirksen Senate Office Building Washington DC 20510
## 99	221 Dirksen Senate Office Building Washington DC 20510
## 100	185 Dirksen Senate Office Building Washington DC\n 20510
## 101	<NA>
##	phone
## 1	(202) 224-5653
## 2	(202) 224-6441
## 3	(202) 224-5852
## 4	(202) 224-3344
## 5	(202) 224-2823
## 6	(202) 224-5721
## 7	(202) 224-3224
## 8	(202) 224-4843
## 9	(202) 224-4814
## 10	(202) 224-2315
## 11	(202) 224-3154

12 (202) 224-3441
13 (202) 224-6472
14 (202) 224-4524
15 (202) 224-2441
16 (202) 224-6324
17 (202) 224-5824
18 (202) 224-2523
19 (202) 224-5042
20 (202) 224-2934
21 (202) 224-3542
22 (202) 224-2353
23 (202) 224-2043
24 (202) 224-6142
25 (202) 224-5922
26 (202) 224-2651
27 (202) 224-2854
28 (202) 224-2152
29 (202) 224-3254
30 (202) 224-3841
31 (202) 224-6551
32 (202) 224-4451
33 (202) 224-5972
34 (202) 224-3744
35 (202) 224-4944
36 (202) 224-3324
37 (202) 224-6154
38 (202) 224-5521
39 (202) 224-5941
40 (202) 224-6361
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43 (202) 224-4721
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46 (202) 224-2235
47 (202) 224-4623
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50 (202) 224-5754
51 (202) 224-4242
52 (202) 224-5444
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54 (202) 224-3424
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57 (202) 224-4774
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61 (202) 224-6521
62 (202) 224-6665
63 (202) 224-4041
64 (202) 224-2621
65 (202) 224-3521

66 (202) 224-3553
 ## 67 (202) 224-4343
 ## 68 (202) 224-6221
 ## 69 (202) 224-3353
 ## 70 (202) 224-4642
 ## 71 (202) 224-2752
 ## 72 (202) 224-5251
 ## 73 (202) 224-6244
 ## 74 (202) 224-5842
 ## 75 (202) 224-3041
 ## 76 (202) 224-5141
 ## 77 (202) 224-4224
 ## 78 (202) 224-3934
 ## 79 (202) 224-6542
 ## 80 (202) 224-5274
 ## 81 (202) 224-6121
 ## 82 (202) 224-2841
 ## 83 (202) 224-5744
 ## 84 (202) 224-4521
 ## 85 (202) 224-5641
 ## 86 (202) 224-4822
 ## 87 (202) 224-3004
 ## 88 (202) 224-2644
 ## 89 (202) 224-2321
 ## 90 (202) 224-6342
 ## 91 (202) 224-4254
 ## 92 (202) 224-4124
 ## 93 (202) 224-4654
 ## 94 (202) 224-2023
 ## 95 (202) 224-3643
 ## 96 (202) 224-4543
 ## 97 (202) 224-2921
 ## 98 (202) 224-6253
 ## 99 (202) 224-5244
 ## 100 (202) 224-5623
 ## 101 <NA>
 ## email
 ## 1 <https://www.baldwin.senate.gov/feedback>
 ## 2 <https://www.barrasso.senate.gov/public/index.cfm/contact-form>
 ## 3 <https://www.bennet.senate.gov/public/index.cfm/contact>
 ## 4 <https://www.blackburn.senate.gov/email-me>
 ## 5 <https://www.blumenthal.senate.gov/contact/>
 ## 6 <https://www.blunt.senate.gov/public/index.cfm/contact-roy>
 ## 7 <https://www.booker.senate.gov/?p=contact>
 ## 8 <https://www.boozman.senate.gov/public/index.cfm/contact>
 ## 9 <http://www.braun.senate.gov/contact-mike>
 ## 10 <http://www.brown.senate.gov/contact/>
 ## 11 <https://www.burr.senate.gov/contact/email>
 ## 12 <http://www.cantwell.senate.gov/public/index.cfm/email-maria>
 ## 13 <https://www.capito.senate.gov/contact/contact-shelley>
 ## 14 <http://www.cardin.senate.gov/contact/>
 ## 15 <http://www.carper.senate.gov/public/index.cfm/email-senator-carper>
 ## 16 <https://www.casey.senate.gov/contact/>
 ## 17 <https://www.cassidy.senate.gov/contact>

18 <http://www.collins.senate.gov/contact>
 ## 19 <https://www.coons.senate.gov/contact>
 ## 20 <https://www.cornyn.senate.gov/contact>
 ## 21 <https://www.cortezmasto.senate.gov/contact>
 ## 22 <https://www.cotton.senate.gov/contact/contact-tom>
 ## 23 <https://www.cramer.senate.gov/contact/contact-kevin>
 ## 24 <https://www.crapo.senate.gov/contact>
 ## 25 <https://www.cruz.senate.gov/?p=form&id=16>
 ## 26 <https://www.daines.senate.gov/connect/email-steve>
 ## 27 <https://www.duckworth.senate.gov/content/contact-senator>
 ## 28 <https://www.durbin.senate.gov/contact/>
 ## 29 <https://www.ernst.senate.gov/public/index.cfm/contact>
 ## 30 <https://www.feinstein.senate.gov/public/index.cfm/e-mail-me>
 ## 31 <http://www.fischer.senate.gov/public/index.cfm/contact>
 ## 32 <https://www.gillibrand.senate.gov/contact/email-me>
 ## 33 <https://www.lgraham.senate.gov/public/index.cfm/e-mail-senator-graham>
 ## 34 <http://www.grassley.senate.gov/contact>
 ## 35 <https://www.hagerty.senate.gov>
 ## 36 <https://www.hassan.senate.gov/content/contact-senator>
 ## 37 <https://www.hawley.senate.gov/contact-senator-hawley>
 ## 38 <http://www.heinrich.senate.gov/contact>
 ## 39 <https://www.hickenlooper.senate.gov>
 ## 40 <https://www.hirono.senate.gov/contact>
 ## 41 <http://www.hoeven.senate.gov/public/index.cfm/email-the-senator>
 ## 42 <https://www.hydesmith.senate.gov/content/contact-senator>
 ## 43 <https://www.inhofe.senate.gov/contact>
 ## 44 <https://www.ronjohnson.senate.gov/public/index.cfm/email-the-senator>
 ## 45 <https://www.kaine.senate.gov/contact>
 ## 46 <https://www.kelly.senate.gov>
 ## 47 <https://www.kennedy.senate.gov/public/email-me>
 ## 48 <https://www.king.senate.gov/contact>
 ## 49 <http://www.klobuchar.senate.gov/public/index.cfm/contact>
 ## 50 <http://www.lankford.senate.gov/contact/email>
 ## 51 <https://www.leahy.senate.gov/contact/>
 ## 52 <https://www.lee.senate.gov/public/index.cfm/contact>
 ## 53 <https://www.lujan.senate.gov>
 ## 54 <https://www.lummis.senate.gov>
 ## 55 <http://www.manchin.senate.gov/public/index.cfm/contact-form>
 ## 56 <https://www.markey.senate.gov/contact>
 ## 57 <https://www.marshall.senate.gov>
 ## 58 <http://www.mcconnell.senate.gov/public/index.cfm?p=contact>
 ## 59 <https://www.menendez.senate.gov/contact>
 ## 60 <http://www.merkley.senate.gov/contact/>
 ## 61 <https://www.moran.senate.gov/public/index.cfm/e-mail-jerry>
 ## 62 <https://www.murkowski.senate.gov/public/index.cfm/contact>
 ## 63 <http://www.murphy.senate.gov/contact>
 ## 64 <http://www.murray.senate.gov/public/index.cfm/contactme>
 ## 65 <https://www.ossoff.senate.gov>
 ## 66 <http://www.padilla.senate.gov>
 ## 67 <https://www.paul.senate.gov/connect/email-rand>
 ## 68 <https://www.peters.senate.gov/contact/email-gary>
 ## 69 <https://www.portman.senate.gov/public/index.cfm/contact?p=contact-form>
 ## 70 <https://www.reed.senate.gov/contact/>
 ## 71 <http://www.risch.senate.gov/public/index.cfm?p=Email>


```

## 72      https://www.romney.senate.gov/contact-senator-romney
## 73      https://www.rosen.senate.gov/contact_jacky
## 74      https://www.rounds.senate.gov/contact/email-mike
## 75      http://www.rubio.senate.gov/public/index.cfm/contact
## 76      http://www.sanders.senate.gov/contact/
## 77      http://www.sasse.senate.gov/public/index.cfm/email-ben
## 78      https://www.schatz.senate.gov/contact
## 79      https://www.schumer.senate.gov/contact/email-chuck
## 80      https://www.rickscott.senate.gov/contact_rick
## 81      https://www.scott.senate.gov/contact/email-me
## 82      https://www.shaheen.senate.gov/contact/contact-jeanne
## 83      https://www.shelby.senate.gov/public/index.cfm/emailsenatorshelby
## 84      https://www.sinema.senate.gov/contact-kyrsten
## 85      https://www.smith.senate.gov/contact-tina
## 86      https://www.stabenow.senate.gov/contact
## 87      https://www.sullivan.senate.gov/contact/email
## 88      https://www.testler.senate.gov/?p=email_senator
## 89      http://www.thune.senate.gov/public/index.cfm/contact
## 90      https://www.tillis.senate.gov/public/index.cfm/email-me
## 91      https://www.toomey.senate.gov/?p=contact
## 92      https://www.tuberville.senate.gov
## 93      http://www.vanhollen.senate.gov/contact/email
## 94      http://www.warner.senate.gov/public/index.cfm?p=Contact
## 95      https://www.warnock.senate.gov
## 96      https://www.warren.senate.gov/?p=email_senator
## 97      https://www.whitehouse.senate.gov/contact/email-sheldon
## 98      https://www.wicker.senate.gov/public/index.cfm/contact
## 99      https://www.wyden.senate.gov/contact/
## 100     https://www.young.senate.gov/contact
## 101     <NA>

```

	website	class	bioguide_id
## 1	http://www.baldwin.senate.gov/	Class I	B001230
## 2	http://www.barrasso.senate.gov	Class I	B001261
## 3	http://www.bennet.senate.gov	Class III	B001267
## 4	https://www.blackburn.senate.gov	Class I	B001243
## 5	http://www.blumenthal.senate.gov	Class III	B001277
## 6	http://www.blunt.senate.gov	Class III	B000575
## 7	http://www.booker.senate.gov	Class II	B001288
## 8	http://www.boozman.senate.gov/	Class III	B001236
## 9	https://www.braun.senate.gov	Class I	B001310
## 10	http://www.brown.senate.gov/	Class I	B000944
## 11	http://www.burr.senate.gov	Class III	B001135
## 12	http://www.cantwell.senate.gov	Class I	C000127
## 13	http://www.capito.senate.gov	Class II	C001047
## 14	http://www.cardin.senate.gov/	Class I	C000141
## 15	http://www.carper.senate.gov	Class I	C000174
## 16	http://www.casey.senate.gov/	Class I	C001070
## 17	http://www.cassidy.senate.gov	Class II	C001075
## 18	http://www.collins.senate.gov	Class II	C001035
## 19	http://www.coons.senate.gov/	Class II	C001088
## 20	http://www.cornyn.senate.gov/	Class II	C001056
## 21	http://www.cortezmasto.senate.gov	Class III	C001113
## 22	http://www.cotton.senate.gov	Class II	C001095
## 23	https://www.cramer.senate.gov	Class I	C001096

## 24	http://www.crapo.senate.gov	Class III	C000880
## 25	http://www.cruz.senate.gov	Class I	C001098
## 26	http://www.daines.senate.gov	Class II	D000618
## 27	http://www.duckworth.senate.gov	Class III	D000622
## 28	http://www.durbin.senate.gov	Class II	D000563
## 29	http://www.ernst.senate.gov	Class II	E000295
## 30	http://www.feinstein.senate.gov	Class I	F000062
## 31	http://www.fischer.senate.gov	Class I	F000463
## 32	http://www.gillibrand.senate.gov	Class I	G000555
## 33	http://www.lgraham.senate.gov/	Class II	G000359
## 34	http://www.grassley.senate.gov	Class III	G000386
## 35	https://www.hagerty.senate.gov	Class II	H000601
## 36	http://www.hassan.senate.gov	Class III	H001076
## 37	https://www.hawley.senate.gov	Class I	H001089
## 38	http://www.heinrich.senate.gov/	Class I	H001046
## 39	https://www.hickenlooper.senate.gov	Class II	H000273
## 40	http://www.hirono.senate.gov/	Class I	H001042
## 41	http://www.hoeven.senate.gov	Class III	H001061
## 42	https://www.hydesmith.senate.gov/	Class II	H001079
## 43	http://www.inhofe.senate.gov/	Class II	I000024
## 44	http://www.ronjohnson.senate.gov/	Class III	J000293
## 45	http://www.kaine.senate.gov/	Class I	K000384
## 46	https://www.kelly.senate.gov	Class III	K000377
## 47	http://www.kennedy.senate.gov	Class III	K000393
## 48	http://www.king.senate.gov/	Class I	K000383
## 49	http://www.klobuchar.senate.gov/	Class I	K000367
## 50	http://www.lankford.senate.gov	Class III	L000575
## 51	http://www.leahy.senate.gov/	Class III	L000174
## 52	http://www.lee.senate.gov/	Class III	L000577
## 53	https://www.lujan.senate.gov	Class II	L000570
## 54	https://www.lummis.senate.gov	Class II	L000571
## 55	http://www.manchin.senate.gov/	Class I	M001183
## 56	http://www.markey.senate.gov	Class II	M000133
## 57	https://www.marshall.senate.gov	Class II	M001198
## 58	http://www.mcconnell.senate.gov/	Class II	M000355
## 59	http://www.menendez.senate.gov/	Class I	M000639
## 60	http://www.merkley.senate.gov	Class II	M001176
## 61	http://www.moran.senate.gov	Class III	M000934
## 62	http://www.murkowski.senate.gov/	Class III	M001153
## 63	http://www.murphy.senate.gov/	Class I	M001169
## 64	http://www.murray.senate.gov/	Class III	M001111
## 65	https://www.ossoff.senate.gov	Class II	O000174
## 66	http://www.padilla.senate.gov	Class III	P000145
## 67	http://www.paul.senate.gov	Class III	P000603
## 68	http://www.peters.senate.gov	Class II	P000595
## 69	http://www.portman.senate.gov	Class III	P000449
## 70	http://www.reed.senate.gov/	Class II	R000122
## 71	http://www.risch.senate.gov	Class II	R000584
## 72	https://www.romney.senate.gov	Class I	R000615
## 73	https://www.rosen.senate.gov	Class I	R000608
## 74	http://www.rounds.senate.gov	Class II	R000605
## 75	http://www.rubio.senate.gov	Class III	R000595
## 76	http://www.sanders.senate.gov/	Class I	S000033
## 77	http://www.sasse.senate.gov	Class II	S001197

## 78	http://www.schatz.senate.gov	Class III	S001194
## 79	http://www.schumer.senate.gov/	Class III	S000148
## 80	http://www.rickscott.senate.gov/	Class I	S001217
## 81	http://www.scott.senate.gov/	Class III	S001184
## 82	http://www.shaheen.senate.gov	Class II	S001181
## 83	http://www.shelby.senate.gov/	Class III	S000320
## 84	https://www.sinema.senate.gov	Class I	S001191
## 85	https://www.smith.senate.gov	Class II	S001203
## 86	http://www.stabenow.senate.gov/	Class I	S000770
## 87	http://www.sullivan.senate.gov	Class II	S001198
## 88	http://www.testter.senate.gov/	Class I	T000464
## 89	http://www.thune.senate.gov/	Class III	T000250
## 90	http://www.tillis.senate.gov	Class II	T000476
## 91	http://www.toomey.senate.gov/	Class III	T000461
## 92	https://www.tuberville.senate.gov	Class II	T000278
## 93	http://www.vanhollen.senate.gov	Class III	V000128
## 94	http://www.warner.senate.gov	Class II	W000805
## 95	https://www.warnock.senate.gov	Class III	W000790
## 96	http://www.warren.senate.gov	Class I	W000817
## 97	http://www.whitehouse.senate.gov/	Class I	W000802
## 98	http://www.wicker.senate.gov	Class I	W000437
## 99	http://www.wyden.senate.gov/	Class III	W000779
## 100	http://www.young.senate.gov	Class III	Y000064
## 101		<NA>	<NA>
##	leadership_position		text
## 1		<NA>	<NA>
## 2		<NA>	<NA>
## 3		<NA>	<NA>
## 4		<NA>	<NA>
## 5		<NA>	<NA>
## 6		<NA>	<NA>
## 7		<NA>	<NA>
## 8		<NA>	<NA>
## 9		<NA>	<NA>
## 10		<NA>	<NA>
## 11		<NA>	<NA>
## 12		<NA>	<NA>
## 13		<NA>	<NA>
## 14		<NA>	<NA>
## 15		<NA>	<NA>
## 16		<NA>	<NA>
## 17		<NA>	<NA>
## 18		<NA>	<NA>
## 19		<NA>	<NA>
## 20		<NA>	<NA>
## 21		<NA>	<NA>
## 22		<NA>	<NA>
## 23		<NA>	<NA>
## 24		<NA>	<NA>
## 25		<NA>	<NA>
## 26		<NA>	<NA>
## 27		<NA>	<NA>
## 28	Whip		<NA>
## 29		<NA>	<NA>

## 30	<NA>	<NA>
## 31	<NA>	<NA>
## 32	<NA>	<NA>
## 33	<NA>	<NA>
## 34	President Pro Tempore	<NA>
## 35	<NA>	<NA>
## 36	<NA>	<NA>
## 37	<NA>	<NA>
## 38	<NA>	<NA>
## 39	<NA>	<NA>
## 40	<NA>	<NA>
## 41	<NA>	<NA>
## 42	<NA>	<NA>
## 43	<NA>	<NA>
## 44	<NA>	<NA>
## 45	<NA>	<NA>
## 46	<NA>	<NA>
## 47	<NA>	<NA>
## 48	<NA>	<NA>
## 49	<NA>	<NA>
## 50	<NA>	<NA>
## 51	<NA>	<NA>
## 52	<NA>	<NA>
## 53	<NA>	<NA>
## 54	<NA>	<NA>
## 55	<NA>	<NA>
## 56	<NA>	<NA>
## 57	<NA>	<NA>
## 58	Majority Leader	<NA>
## 59	<NA>	<NA>
## 60	<NA>	<NA>
## 61	<NA>	<NA>
## 62	<NA>	<NA>
## 63	<NA>	<NA>
## 64	Assistant Democratic Leader	<NA>
## 65	<NA>	<NA>
## 66	<NA>	<NA>
## 67	<NA>	<NA>
## 68	<NA>	<NA>
## 69	<NA>	<NA>
## 70	<NA>	<NA>
## 71	<NA>	<NA>
## 72	<NA>	<NA>
## 73	<NA>	<NA>
## 74	<NA>	<NA>
## 75	<NA>	<NA>
## 76	<NA>	<NA>
## 77	<NA>	<NA>
## 78	<NA>	<NA>
## 79	Democratic Leader	<NA>
## 80	<NA>	<NA>
## 81	<NA>	<NA>
## 82	<NA>	<NA>
## 83	<NA>	<NA>

```
## 84                <NA>                <NA>
## 85                <NA>                <NA>
## 86                <NA>                <NA>
## 87                <NA>                <NA>
## 88                <NA>                <NA>
## 89      Majority Whip                <NA>
## 90                <NA>                <NA>
## 91                <NA>                <NA>
## 92                <NA>                <NA>
## 93                <NA>                <NA>
## 94                <NA>                <NA>
## 95                <NA>                <NA>
## 96                <NA>                <NA>
## 97                <NA>                <NA>
## 98                <NA>                <NA>
## 99                <NA>                <NA>
## 100               <NA>                <NA>
## 101               <NA> 2021-06-11T08:56-05:00
```

```
View(final)
dim(final) # The dataframe has 101 rows and 13 columns
```

```
## [1] 101 13
```

Question 2

```
#Extracting names and removing middle name and initials
```

```
new_first_name <- gsub('([A-z]+).*', '\\1', final$first_name)
new_first_name
```

```
## [1] "Tammy"      "John"       "Michael"    "Marsha"     "Richard"
## [6] "Roy"        "Cory"       "John"       "Mike"       "Sherrod"
## [11] "Richard"    "Maria"      "Shelley"    "Benjamin"   "Thomas"
## [16] "Robert"     "Bill"       "Susan"      "Christopher" "John"
## [21] "Catherine"  "Tom"        "Kevin"      "Mike"       "Ted"
## [26] "Steve"      "Tammy"      "Richard"    "Joni"       "Dianne"
## [31] "Deb"        "Kirsten"    "Lindsey"    "Chuck"      "Bill"
## [36] "Margaret"   "Josh"       "Martin"     "John"       "Mazie"
## [41] "John"       "Cindy"      "James"      "Ron"        "Tim"
## [46] "Mark"       "John"       "Angus"      "Amy"        "James"
## [51] "Patrick"    "Mike"       "Ben"        "Cynthia"    "Joe"
## [56] "Edward"     "Roger"      "Mitch"      "Robert"     "Jeff"
## [61] "Jerry"      "Lisa"       "Christopher" "Patty"      "Jon"
## [66] "Alex"       "Rand"       "Gary"       "Rob"        "Jack"
## [71] "James"      "Mitt"       "Jacky"      "Mike"       "Marco"
## [76] "Bernard"    "Ben"        "Brian"      "Charles"    "Rick"
## [81] "Tim"        "Jeanne"     "Richard"    "Kyrsten"    "Tina"
## [86] "Debbie"     "Dan"        "Jon"        "John"       "Thom"
## [91] "Patrick"    "Tommy"      "Chris"      "Mark"       "Raphael"
## [96] "Elizabeth"  "Sheldon"    "Roger"      "Ron"        "Todd"
## [101] NA
```

```
new_last_name <- gsub('[A-z]+.*', '\\1', final$last_name)
new_last_name
```

```
##      [1] "Baldwin"      "Barrasso"      "Bennet"        "Blackburn"     "Blumenthal"
##      [6] "Blunt"        "Booker"        "Boozman"       "Braun"         "Brown"
##     [11] "Burr"         "Cantwell"      "Capito"        "Cardin"        "Carper"
##     [16] "Casey"        "Cassidy"       "Collins"       "Coons"         "Cornyn"
##     [21] "Cortez"       "Cotton"        "Cramer"        "Crapo"         "Cruz"
##     [26] "Daines"       "Duckworth"     "Durbin"        "Ernst"         "Feinstein"
##     [31] "Fischer"      "Gillibrand"    "Graham"        "Grassley"      "Hagerty"
##     [36] "Hassan"       "Hawley"        "Heinrich"      "Hickenlooper"  "Hirono"
##     [41] "Hoeven"       "Hyde"          "Inhofe"        "Johnson"      "Kaine"
##     [46] "Kelly"        "Kennedy"       "King"          "Klobuchar"     "Lankford"
##     [51] "Leahy"        "Lee"           "Luj"           "Lummis"        "Manchin"
##     [56] "Markey"       "Marshall"      "McConnell"     "Menendez"      "Merkley"
##     [61] "Moran"        "Murkowski"     "Murphy"        "Murray"        "Ossoff"
##     [66] "Padilla"      "Paul"          "Peters"        "Portman"       "Reed"
##     [71] "Risch"        "Romney"        "Rosen"         "Rounds"        "Rubio"
##     [76] "Sanders"      "Sasse"         "Schatz"        "Schumer"       "Scott"
##     [81] "Scott"        "Shaheen"       "Shelby"        "Sinema"        "Smith"
##     [86] "Stabenow"     "Sullivan"      "Tester"        "Thune"         "Tillis"
##     [91] "Toomey"       "Tuberville"    "Van"           "Warner"        "Warnock"
##     [96] "Warren"       "Whitehouse"    "Wicker"        "Wyden"         "Young"
##    [101] NA
```

```
#Replacing the updated column values
```

```
final[["first_name"]] <- new_first_name
colnames(final)[colnames(final)== "first_name"] <- "first_name"

final[["last_name"]] <- new_last_name
colnames(final)[colnames(final)== "last_name"] <- "last_name"
```

```
#The data frame has been updated
```

```
View(final)
```

Question 3 — (10 points) Create a function called `senatorsByState()` which takes the two letter abbreviation for a US State as its input argument and displays the first name, last name and party of each senator for the selected state. For example, if the user enters 'MA' your function should display a message that is similar to the following: "The senators for MA are: Edward Markey, Democratic Party and Elizabeth Warren, Democratic Party"

```
library(dplyr)
senatorsByState <- function(x)
{
  abc <- final %>%
    select(state, first_name, last_name, party) %>%
    group_by(state) %>%
    filter(state == (x))
  output <- paste("The senators for", (x), "are: ")
  name_change <- paste(abc$first_name, abc$last_name, ",", recode(abc$party, "D" = "Democratic Party", "I" = "Independent"))
  add <- str_c(name_change, collapse = " and ")
}
```

```
combined <- str_c(output, add)
return(combined)
}
```

```
#Calling the new function
senatorsByState("IL")
```

```
## [1] "The senators for IL are: Tammy Duckworth , Democratic Party and Richard Durbin , Democratic Party"
```

```
senatorsByState("CO")
```

```
## [1] "The senators for CO are: Michael Bennet , Democratic Party and John Hickenlooper , Democratic Party"
```

Question 4

```
# Loading the downloaded file
a <- read.csv("~/Downloads/Ratio Of Female To Male Youth Unemployment Rate .csv")
#Converting to tibble
as_tibble(a)
```

```
## # A tibble: 263 x 65
##   Country.Name Country.Code Indicator.Name Indicator.Code X1960 X1961 X1962
##   <chr>         <chr>         <chr>         <chr>         <lgl> <lgl> <lgl>
## 1 Aruba        ABW          Ratio of female ~ SL.UEM.1524.F~ NA     NA     NA
## 2 Afghanistan AFG          Ratio of female ~ SL.UEM.1524.F~ NA     NA     NA
## 3 Angola       AGO          Ratio of female ~ SL.UEM.1524.F~ NA     NA     NA
## 4 Albania      ALB          Ratio of female ~ SL.UEM.1524.F~ NA     NA     NA
## 5 Andorra      AND          Ratio of female ~ SL.UEM.1524.F~ NA     NA     NA
## 6 Arab World   ARB          Ratio of female ~ SL.UEM.1524.F~ NA     NA     NA
## 7 United Arab ~ ARE          Ratio of female ~ SL.UEM.1524.F~ NA     NA     NA
## 8 Argentina    ARG          Ratio of female ~ SL.UEM.1524.F~ NA     NA     NA
## 9 Armenia      ARM          Ratio of female ~ SL.UEM.1524.F~ NA     NA     NA
## 10 American Sam~ ASM          Ratio of female ~ SL.UEM.1524.F~ NA     NA     NA
## # ... with 253 more rows, and 58 more variables: X1963 <lgl>, X1964 <lgl>,
## #   X1965 <lgl>, X1966 <lgl>, X1967 <lgl>, X1968 <lgl>, X1969 <lgl>,
## #   X1970 <lgl>, X1971 <lgl>, X1972 <lgl>, X1973 <lgl>, X1974 <lgl>,
## #   X1975 <lgl>, X1976 <lgl>, X1977 <lgl>, X1978 <lgl>, X1979 <lgl>,
## #   X1980 <lgl>, X1981 <lgl>, X1982 <lgl>, X1983 <lgl>, X1984 <lgl>,
## #   X1985 <lgl>, X1986 <lgl>, X1987 <lgl>, X1988 <lgl>, X1989 <lgl>,
## #   X1990 <lgl>, X1991 <dbl>, X1992 <dbl>, X1993 <dbl>, X1994 <dbl>,
## #   X1995 <dbl>, X1996 <dbl>, X1997 <dbl>, X1998 <dbl>, X1999 <dbl>,
## #   X2000 <dbl>, X2001 <dbl>, X2002 <dbl>, X2003 <dbl>, X2004 <dbl>,
## #   X2005 <dbl>, X2006 <dbl>, X2007 <dbl>, X2008 <dbl>, X2009 <dbl>,
## #   X2010 <dbl>, X2011 <dbl>, X2012 <dbl>, X2013 <dbl>, X2014 <dbl>,
## #   X2015 <dbl>, X2016 <dbl>, X2017 <dbl>, X2018 <dbl>, X2019 <dbl>,
## #   X2020 <dbl>
```

```
View(a)
```

```
#Tidying the data
tidy <- a %>%
```

```

pivot_longer (X1960:X2020, names_to = "Years", values_to = "Values", values_drop_na = TRUE) %>%
separate(Years, into = c("X", "Years"), sep = 1)
View(tidy)

```

#Tibble one created from original dataset a

```

country_tibble <- a %>%
  select (Country.Name, Country.Code)
country_tibble

```

##	Country.Name	Country.Code
## 1	Aruba	ABW
## 2	Afghanistan	AFG
## 3	Angola	AGO
## 4	Albania	ALB
## 5	Andorra	AND
## 6	Arab World	ARB
## 7	United Arab Emirates	ARE
## 8	Argentina	ARG
## 9	Armenia	ARM
## 10	American Samoa	ASM
## 11	Antigua and Barbuda	ATG
## 12	Australia	AUS
## 13	Austria	AUT
## 14	Azerbaijan	AZE
## 15	Burundi	BDI
## 16	Belgium	BEL
## 17	Benin	BEN
## 18	Burkina Faso	BFA
## 19	Bangladesh	BGD
## 20	Bulgaria	BGR
## 21	Bahrain	BHR
## 22	Bahamas, The	BHS
## 23	Bosnia and Herzegovina	BIH
## 24	Belarus	BLR
## 25	Belize	BLZ
## 26	Bermuda	BMU
## 27	Bolivia	BOL
## 28	Brazil	BRA
## 29	Barbados	BRB
## 30	Brunei Darussalam	BRN
## 31	Bhutan	BTN
## 32	Botswana	BWA
## 33	Central African Republic	CAF
## 34	Canada	CAN
## 35	Central Europe and the Baltics	CEB
## 36	Switzerland	CHE
## 37	Channel Islands	CHI
## 38	Chile	CHL
## 39	China	CHN
## 40	Cote d'Ivoire	CIV
## 41	Cameroon	CMR
## 42	Congo, Dem. Rep.	COD

## 43	Congo, Rep.	COG
## 44	Colombia	COL
## 45	Comoros	COM
## 46	Cabo Verde	CPV
## 47	Costa Rica	CRI
## 48	Caribbean small states	CSS
## 49	Cuba	CUB
## 50	Curacao	CUW
## 51	Cayman Islands	CYM
## 52	Cyprus	CYP
## 53	Czech Republic	CZE
## 54	Germany	DEU
## 55	Djibouti	DJI
## 56	Dominica	DMA
## 57	Denmark	DNK
## 58	Dominican Republic	DOM
## 59	Algeria	DZA
## 60	East Asia & Pacific (excluding high income)	EAP
## 61	Early-demographic dividend	EAR
## 62	East Asia & Pacific	EAS
## 63	Europe & Central Asia (excluding high income)	ECA
## 64	Europe & Central Asia	ECS
## 65	Ecuador	ECU
## 66	Egypt, Arab Rep.	EGY
## 67	Euro area	EMU
## 68	Eritrea	ERI
## 69	Spain	ESP
## 70	Estonia	EST
## 71	Ethiopia	ETH
## 72	European Union	EUU
## 73	Fragile and conflict affected situations	FCS
## 74	Finland	FIN
## 75	Fiji	FJI
## 76	France	FRA
## 77	Faroe Islands	FRO
## 78	Micronesia, Fed. Sts.	FSM
## 79	Gabon	GAB
## 80	United Kingdom	GBR
## 81	Georgia	GEO
## 82	Ghana	GHA
## 83	Gibraltar	GIB
## 84	Guinea	GIN
## 85	Gambia, The	GMB
## 86	Guinea-Bissau	GNB
## 87	Equatorial Guinea	GNQ
## 88	Greece	GRC
## 89	Grenada	GRD
## 90	Greenland	GRL
## 91	Guatemala	GTM
## 92	Guam	GUM
## 93	Guyana	GUY
## 94	High income	HIC
## 95	Hong Kong SAR, China	HKG
## 96	Honduras	HND

## 97	Heavily indebted poor countries (HIPC)	HPC
## 98	Croatia	HRV
## 99	Haiti	HTI
## 100	Hungary	HUN
## 101	IBRD only	IBD
## 102	IDA & IBRD total	IBT
## 103	IDA total	IDA
## 104	IDA blend	IDB
## 105	Indonesia	IDN
## 106	IDA only	IDX
## 107	Isle of Man	IMN
## 108	India	IND
## 109	Ireland	IRL
## 110	Iran, Islamic Rep.	IRN
## 111	Iraq	IRQ
## 112	Iceland	ISL
## 113	Israel	ISR
## 114	Italy	ITA
## 115	Jamaica	JAM
## 116	Jordan	JOR
## 117	Japan	JPN
## 118	Kazakhstan	KAZ
## 119	Kenya	KEN
## 120	Kyrgyz Republic	KGZ
## 121	Cambodia	KHM
## 122	Kiribati	KIR
## 123	St. Kitts and Nevis	KNA
## 124	Korea, Rep.	KOR
## 125	Kuwait	KWT
## 126	Latin America & Caribbean (excluding high income)	LAC
## 127	Lao PDR	LAO
## 128	Lebanon	LBN
## 129	Liberia	LBR
## 130	Libya	LBY
## 131	St. Lucia	LCA
## 132	Latin America & Caribbean	LCN
## 133	Least developed countries: UN classification	LDC
## 134	Low income	LIC
## 135	Liechtenstein	LIE
## 136	Sri Lanka	LKA
## 137	Lower middle income	LMC
## 138	Low & middle income	LMY
## 139	Lesotho	LSO
## 140	Late-demographic dividend	LTE
## 141	Lithuania	LTU
## 142	Luxembourg	LUX
## 143	Latvia	LVA
## 144	Macao SAR, China	MAC
## 145	St. Martin (French part)	MAF
## 146	Morocco	MAR
## 147	Monaco	MCO
## 148	Moldova	MDA
## 149	Madagascar	MDG
## 150	Maldives	MDV

## 151	Middle East & North Africa	MEA
## 152	Mexico	MEX
## 153	Marshall Islands	MHL
## 154	Middle income	MIC
## 155	North Macedonia	MKD
## 156	Mali	MLI
## 157	Malta	MLT
## 158	Myanmar	MMR
## 159	Middle East & North Africa (excluding high income)	MNA
## 160	Montenegro	MNE
## 161	Mongolia	MNG
## 162	Northern Mariana Islands	MNP
## 163	Mozambique	MOZ
## 164	Mauritania	MRT
## 165	Mauritius	MUS
## 166	Malawi	MWI
## 167	Malaysia	MYS
## 168	North America	NAC
## 169	Namibia	NAM
## 170	New Caledonia	NCL
## 171	Niger	NER
## 172	Nigeria	NGA
## 173	Nicaragua	NIC
## 174	Netherlands	NLD
## 175	Norway	NOR
## 176	Nepal	NPL
## 177	Nauru	NRU
## 178	New Zealand	NZL
## 179	OECD members	OED
## 180	Oman	OMN
## 181	Other small states	OSS
## 182	Pakistan	PAK
## 183	Panama	PAN
## 184	Peru	PER
## 185	Philippines	PHL
## 186	Palau	PLW
## 187	Papua New Guinea	PNG
## 188	Poland	POL
## 189	Pre-demographic dividend	PRE
## 190	Puerto Rico	PRI
## 191	Korea, Dem. People's Rep.	PRK
## 192	Portugal	PRT
## 193	Paraguay	PRY
## 194	West Bank and Gaza	PSE
## 195	Pacific island small states	PSS
## 196	Post-demographic dividend	PST
## 197	French Polynesia	PYF
## 198	Qatar	QAT
## 199	Romania	ROU
## 200	Russian Federation	RUS
## 201	Rwanda	RWA
## 202	South Asia	SAS
## 203	Saudi Arabia	SAU
## 204	Sudan	SDN

## 205	Senegal	SEN
## 206	Singapore	SGP
## 207	Solomon Islands	SLB
## 208	Sierra Leone	SLE
## 209	El Salvador	SLV
## 210	San Marino	SMR
## 211	Somalia	SOM
## 212	Serbia	SRB
## 213	Sub-Saharan Africa (excluding high income)	SSA
## 214	South Sudan	SSD
## 215	Sub-Saharan Africa	SSF
## 216	Small states	SST
## 217	Sao Tome and Principe	STP
## 218	Suriname	SUR
## 219	Slovak Republic	SVK
## 220	Slovenia	SVN
## 221	Sweden	SWE
## 222	Eswatini	SWZ
## 223	Sint Maarten (Dutch part)	SXM
## 224	Seychelles	SYC
## 225	Syrian Arab Republic	SYR
## 226	Turks and Caicos Islands	TCA
## 227	Chad	TCD
## 228	East Asia & Pacific (IDA & IBRD)	TEA
## 229	Europe & Central Asia (IDA & IBRD)	TEC
## 230	Togo	TGO
## 231	Thailand	THA
## 232	Tajikistan	TJK
## 233	Turkmenistan	TKM
## 234	Latin America & Caribbean (IDA & IBRD)	TLA
## 235	Timor-Leste	TLS
## 236	Middle East & North Africa (IDA & IBRD)	TMN
## 237	Tonga	TON
## 238	South Asia (IDA & IBRD)	TSA
## 239	Sub-Saharan Africa (IDA & IBRD)	TSS
## 240	Trinidad and Tobago	TTO
## 241	Tunisia	TUN
## 242	Turkey	TUR
## 243	Tuvalu	TUV
## 244	Tanzania	TZA
## 245	Uganda	UGA
## 246	Ukraine	UKR
## 247	Upper middle income	UMC
## 248	Uruguay	URY
## 249	United States	USA
## 250	Uzbekistan	UZB
## 251	St. Vincent and the Grenadines	VCT
## 252	Venezuela, RB	VEN
## 253	British Virgin Islands	VGB
## 254	Virgin Islands (U.S.)	VIR
## 255	Vietnam	VNM
## 256	Vanuatu	VUT
## 257	World	WLD
## 258	Samoa	WSM

```
## 259                Kosovo                XKX
## 260            Yemen, Rep.                YEM
## 261        South Africa                ZAF
## 262                Zambia                ZMB
## 263            Zimbabwe                ZWE
```

```
#Detecting duplicate values. 0 duplicate values
country_tibble[duplicated(country_tibble)]
```

```
## data frame with 0 columns and 263 rows
```

```
View(country_tibble)

#Tibble two created from the tidy dataset
indicator_data <- tidy %>%
  select("Country.Code", "Years", "Values")
View(indicator_data)
```

Question 5- (10 points) Select five countries from each of the following continents: Africa, Asia and Europe. Visualize their respective data from the last 20 years using a line chart; use `facet_wrap` to display the data for each continent in its own chart. Explain your observations about the ratio of female to male youth unemployment rate in the selected regions.

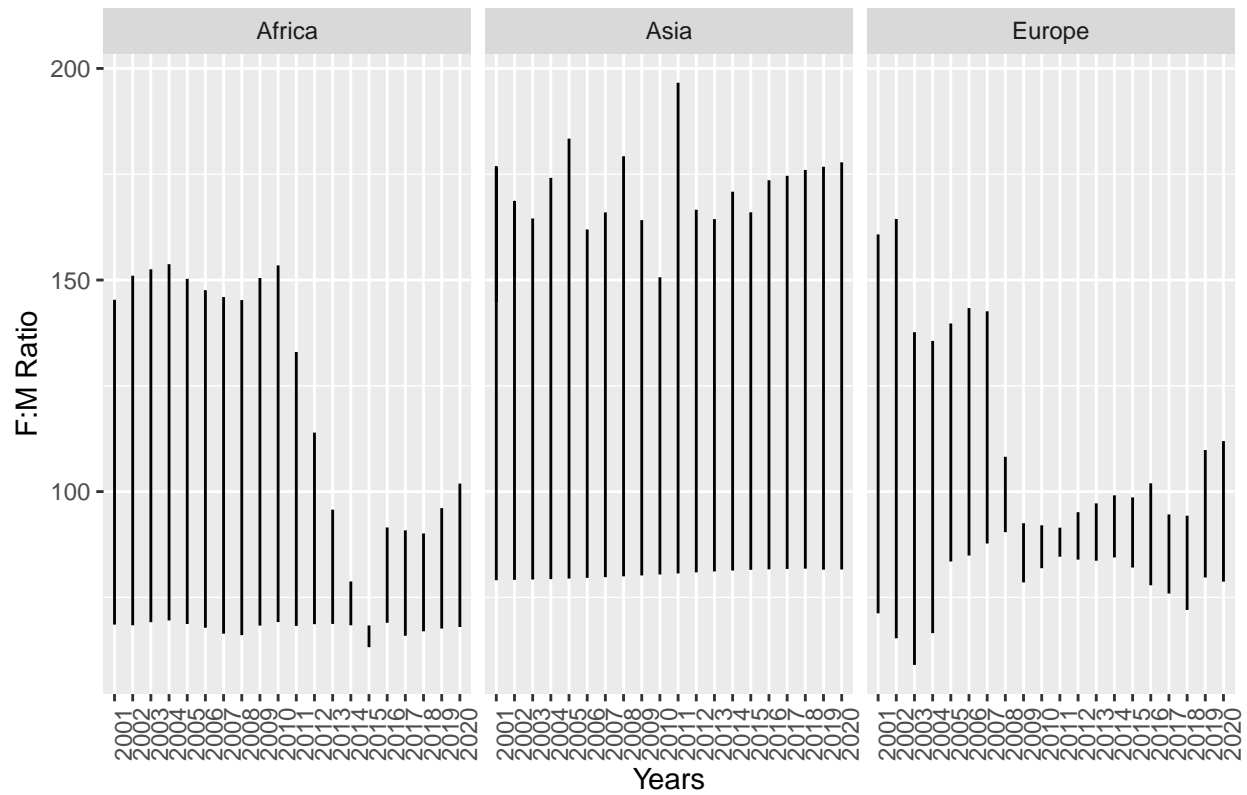
```
ans5 <- read.csv("~/Downloads/Country Meta-Data.csv")
View(ans5)

#Creating my own tibble and inner joining with the previously made one
mytable <- tibble(Country.Name= c("Ethiopia", "Guinea", "Iraq", "Liberia", "Lesotho", "China", "India",
  inner_join(country_tibble, by= "Country.Name") %>%
  inner_join(indicator_data, by= "Country.Code") %>%
  filter(Years == (2001:2020))

View(mytable)

#Plotting line graph
ggplot(data= mytable, aes(x= Years, y= Values)) +
  geom_line() +
  facet_wrap(~continent,) +
  theme(axis.text.x = element_text(angle= 90, hjust=0)) +
  ggtitle("F:M unemployment comparison between continents") +
  xlab("Years") + ylab("F:M Ratio")
```

F:M unemployment comparison between continents



Comment- The graph is a mix of 5 random countries from 3 continents. It shows that For Asia the ratio remains more or less unchanged during the years. For Africa the ratio is low and has been deteriorating over the past 6-7 years. Europe also has a similar case, The unemployment ratio has been up and down and decreased over the past few years.