Initial-Code.R

ashis

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```r
library(ggplot2)

Education1<- read.csv(file='E:/Ryerson University/Data Analytics and Big Data Certificate Course/Data Analytics Project/WB/Final/Education/Education - Use Case 1.csv', header = TRUE)
Education2<- read.csv(file='E:/Ryerson University/Data Analytics and Big Data Certificate Course/Data Analytics Project/WB/Final/Education/Education - Use Case 2.csv', header = TRUE)
#Health <- read.csv(file='E:/Ryerson University/Data Analytics and Big Data Certificate Course/Data Analytics Project/WB/Final/Health/Health - Use Case.csv', header = TRUE)
#Financial_Sector <- read.csv(file='E:/Ryerson University/Data Analytics and Big Data Certificate Course/Data Analytics Project/WB/Final/Financial Sector/Financial Sector - Use Case.csv', header=TRUE)
#Growth <- read.csv(file='E:/Ryerson University/Data Analytics and Big Data Certificate Course/Data Analytics Project/WB/Final/Economy and Growth/Economy & Growth - Use Case.csv', header = TRUE)

summary(Education1)
```

```
##   ï..Country.Code    Country.Name      Indicator.Name        X2001
##   Length:266        Length:266        Length:266        Min.   :14.38
##   Class :character  Class :character  Class :character  1st Qu.:62.32
##   Mode  :character  Mode  :character  Mode  :character  Median :82.49
##                                                         Mean   :77.63
##                                                         3rd Qu.:91.51
##                                                         Max.   :99.65
##                                                         NA's   :196
##       X2002            X2003            X2004            X2005
##   Min.   :34.66    Min.   :21.82    Min.   :28.38    Min.   :23.52
##   1st Qu.:60.75    1st Qu.:57.91    1st Qu.:61.20    1st Qu.:60.64
##   Median :78.39    Median :78.93    Median :81.84    Median :80.31
##   Mean   :76.11    Mean   :73.27    Mean   :77.24    Mean   :75.61
##   3rd Qu.:91.16    3rd Qu.:89.92    3rd Qu.:90.53    3rd Qu.:91.51
##   Max.   :99.80    Max.   :98.58    Max.   :99.70    Max.   :98.63
##   NA's   :207      NA's   :214      NA's   :202      NA's   :204
##       X2006            X2007            X2008            X2009
##   Min.   :22.47    Min.   :28.29    Min.   : 26.83    Min.   :48.04
##   1st Qu.:60.81    1st Qu.:61.19    1st Qu.: 63.89    1st Qu.:65.44
##   Median :81.62    Median :83.03    Median : 84.03    Median :88.28
##   Mean   :76.24    Mean   :77.61    Mean   : 79.47    Mean   :81.12
##   3rd Qu.:92.30    3rd Qu.:92.69    3rd Qu.: 93.86    3rd Qu.:93.98
##   Max.   :99.02    Max.   :99.59    Max.   :100.00    Max.   :99.76
##   NA's   :197      NA's   :190      NA's   :192       NA's   :192
##       X2010            X2011            X2012            X2013
##   Min.   :25.31    Min.   :30.62    Min.   :30.56    Min.   :32.43
##   1st Qu.:69.87    1st Qu.:72.68    1st Qu.:69.43    1st Qu.:70.06
##   Median :89.54    Median :92.01    Median :84.71    Median :86.82
##   Mean   :81.28    Mean   :84.02    Mean   :80.60    Mean   :81.94
##   3rd Qu.:94.32    3rd Qu.:97.39    3rd Qu.:94.31    3rd Qu.:94.95
##   Max.   :99.78    Max.   :99.90    Max.   :99.97    Max.   :99.99
##   NA's   :175      NA's   :167      NA's   :181      NA's   :191
##       X2014            X2015            X2016            X2017
##   Min.   :32.00    Min.   :26.00    Min.   :22.31    Min.   :48.30
##   1st Qu.:73.54    1st Qu.:73.50    1st Qu.:75.55    1st Qu.:67.03
##   Median :88.22    Median :91.02    Median :92.39    Median :86.37
##   Mean   :83.05    Mean   :83.20    Mean   :84.93    Mean   :82.12
##   3rd Qu.:95.39    3rd Qu.:95.41    3rd Qu.:95.54    3rd Qu.:95.44
##   Max.   :99.98    Max.   :99.98    Max.   :99.99    Max.   :99.79
##   NA's   :172      NA's   :185      NA's   :193      NA's   :196
##       X2018            X2019            X2020
##   Min.   :34.52    Min.   : 58.00    Min.   :30.76
##   1st Qu.:73.35    1st Qu.: 73.51    1st Qu.:73.58
##   Median :88.71    Median : 89.25    Median :86.89
##   Mean   :82.65    Mean   : 85.16    Mean   :83.72
##   3rd Qu.:96.01    3rd Qu.: 96.01    3rd Qu.:96.03
##   Max.   :99.99    Max.   :100.00    Max.   :99.79
##   NA's   :152      NA's   :204       NA's   :214
```

```
summary(Education2)
```

```
##    ï..Country.Code    Country.Name      Indicator.Name        X2001
##    Length:266         Length:266        Length:266         Min.   : 52.77
##    Class :character   Class :character  Class :character   1st Qu.: 88.82
##    Mode  :character   Mode  :character  Mode  :character   Median : 92.02
##                                                            Mean   : 89.21
##                                                            3rd Qu.: 94.63
##                                                            Max.   :100.00
##                                                            NA's   :205
##        X2002            X2003            X2004            X2005
##    Min.   : 39.58   Min.   :65.81   Min.   :58.31   Min.   : 61.54
##    1st Qu.: 89.39   1st Qu.:90.09   1st Qu.:90.17   1st Qu.: 90.03
##    Median : 91.31   Median :92.16   Median :92.84   Median : 92.89
##    Mean   : 90.42   Mean   :91.27   Mean   :91.21   Mean   : 90.95
##    3rd Qu.: 94.48   3rd Qu.:94.05   3rd Qu.:95.24   3rd Qu.: 95.24
##    Max.   :100.00   Max.   :99.19   Max.   :99.30   Max.   :100.00
##    NA's   :189      NA's   :213     NA's   :197     NA's   :201
##        X2006            X2007            X2008            X2009
##    Min.   : 71.83   Min.   : 64.67  Min.   : 57.54  Min.   : 62.61
##    1st Qu.: 88.50   1st Qu.: 89.38  1st Qu.: 88.59  1st Qu.: 88.06
##    Median : 91.77   Median : 92.93  Median : 91.73  Median : 91.71
##    Mean   : 89.97   Mean   : 91.20  Mean   : 90.67  Mean   : 90.54
##    3rd Qu.: 93.91   3rd Qu.: 94.86  3rd Qu.: 95.00  3rd Qu.: 94.78
##    Max.   :100.00   Max.   :100.00  Max.   :100.00  Max.   :100.00
##    NA's   :196      NA's   :189     NA's   :179     NA's   :174
##        X2010            X2011            X2012            X2013
##    Min.   : 57.24   Min.   : 43.44  Min.   : 32.81  Min.   : 49.23
##    1st Qu.: 88.58   1st Qu.: 87.43  1st Qu.: 87.52  1st Qu.: 87.89
##    Median : 90.72   Median : 91.28  Median : 91.61  Median : 92.01
##    Mean   : 89.99   Mean   : 89.94  Mean   : 89.22  Mean   : 90.15
##    3rd Qu.: 93.50   3rd Qu.: 94.35  3rd Qu.: 94.95  3rd Qu.: 95.09
##    Max.   :100.00   Max.   :100.00  Max.   :100.00  Max.   :100.00
##    NA's   :154      NA's   :156     NA's   :157     NA's   :150
##        X2014            X2015            X2016            X2017
##    Min.   : 61.70   Min.   : 64.63  Min.   : 71.01  Min.   :76.15
##    1st Qu.: 88.59   1st Qu.: 89.03  1st Qu.: 91.07  1st Qu.:91.15
##    Median : 93.29   Median : 93.11  Median : 93.65  Median :93.50
##    Mean   : 91.32   Mean   : 91.84  Mean   : 92.43  Mean   :92.78
##    3rd Qu.: 95.28   3rd Qu.: 95.88  3rd Qu.: 95.89  3rd Qu.:95.59
##    Max.   :100.00   Max.   :100.00  Max.   :100.00  Max.   :99.80
##    NA's   :167      NA's   :173     NA's   :174     NA's   :180
##        X2018            X2019            X2020
##    Min.   : 74.66   Min.   : 71.04  Min.   : 86.56
##    1st Qu.: 89.67   1st Qu.: 85.97  1st Qu.: 91.60
##    Median : 93.36   Median : 94.12  Median : 96.02
##    Mean   : 92.50   Mean   : 91.42  Mean   : 95.12
##    3rd Qu.: 95.69   3rd Qu.: 98.13  3rd Qu.: 98.57
##    Max.   :100.00   Max.   :100.00  Max.   :100.00
##    NA's   :191      NA's   :232     NA's   :253
```

```
#summary(Health)
#summary(Financial_Sector)
#summary(Growth)

class(Education1)
```

```
## [1] "data.frame"
```

```
class(Education2)
```

```
## [1] "data.frame"
```

```r
Education1$X2001[is.na(Education1$X2001)] <- mean(Education1$X2001, na.rm = TRUE)
Education1$X2002[is.na(Education1$X2002)] <- mean(Education1$X2002, na.rm = TRUE)
Education1$X2003[is.na(Education1$X2003)] <- mean(Education1$X2003, na.rm = TRUE)
Education1$X2004[is.na(Education1$X2004)] <- mean(Education1$X2004, na.rm = TRUE)
Education1$X2005[is.na(Education1$X2005)] <- mean(Education1$X2005, na.rm = TRUE)
Education1$X2006[is.na(Education1$X2006)] <- mean(Education1$X2006, na.rm = TRUE)
Education1$X2007[is.na(Education1$X2007)] <- mean(Education1$X2007, na.rm = TRUE)
Education1$X2008[is.na(Education1$X2008)] <- mean(Education1$X2008, na.rm = TRUE)
Education1$X2009[is.na(Education1$X2009)] <- mean(Education1$X2009, na.rm = TRUE)
Education1$X2010[is.na(Education1$X2010)] <- mean(Education1$X2010, na.rm = TRUE)
Education1$X2011[is.na(Education1$X2011)] <- mean(Education1$X2011, na.rm = TRUE)
Education1$X2012[is.na(Education1$X2012)] <- mean(Education1$X2012, na.rm = TRUE)
Education1$X2013[is.na(Education1$X2013)] <- mean(Education1$X2013, na.rm = TRUE)
Education1$X2014[is.na(Education1$X2014)] <- mean(Education1$X2014, na.rm = TRUE)
Education1$X2015[is.na(Education1$X2015)] <- mean(Education1$X2015, na.rm = TRUE)
Education1$X2016[is.na(Education1$X2016)] <- mean(Education1$X2016, na.rm = TRUE)
Education1$X2017[is.na(Education1$X2017)] <- mean(Education1$X2017, na.rm = TRUE)
Education1$X2018[is.na(Education1$X2018)] <- mean(Education1$X2018, na.rm = TRUE)
Education1$X2019[is.na(Education1$X2019)] <- mean(Education1$X2019, na.rm = TRUE)
Education1$X2020[is.na(Education1$X2020)] <- mean(Education1$X2020, na.rm = TRUE)


Education2$X2001[is.na(Education2$X2001)] <- mean(Education2$X2001, na.rm = TRUE)
Education2$X2002[is.na(Education2$X2002)] <- mean(Education2$X2002, na.rm = TRUE)
Education2$X2003[is.na(Education2$X2003)] <- mean(Education2$X2003, na.rm = TRUE)
Education2$X2004[is.na(Education2$X2004)] <- mean(Education2$X2004, na.rm = TRUE)
Education2$X2005[is.na(Education2$X2005)] <- mean(Education2$X2005, na.rm = TRUE)
Education2$X2006[is.na(Education2$X2006)] <- mean(Education2$X2006, na.rm = TRUE)
Education2$X2007[is.na(Education2$X2007)] <- mean(Education2$X2007, na.rm = TRUE)
Education2$X2008[is.na(Education2$X2008)] <- mean(Education2$X2008, na.rm = TRUE)
Education2$X2009[is.na(Education2$X2009)] <- mean(Education2$X2009, na.rm = TRUE)
Education2$X2010[is.na(Education2$X2010)] <- mean(Education2$X2010, na.rm = TRUE)
Education2$X2011[is.na(Education2$X2011)] <- mean(Education2$X2011, na.rm = TRUE)
Education2$X2012[is.na(Education2$X2012)] <- mean(Education2$X2012, na.rm = TRUE)
Education2$X2013[is.na(Education2$X2013)] <- mean(Education2$X2013, na.rm = TRUE)
Education2$X2014[is.na(Education2$X2014)] <- mean(Education2$X2014, na.rm = TRUE)
Education2$X2015[is.na(Education2$X2015)] <- mean(Education2$X2015, na.rm = TRUE)
Education2$X2016[is.na(Education2$X2016)] <- mean(Education2$X2016, na.rm = TRUE)
Education2$X2017[is.na(Education2$X2017)] <- mean(Education2$X2017, na.rm = TRUE)
Education2$X2018[is.na(Education2$X2018)] <- mean(Education2$X2018, na.rm = TRUE)
Education2$X2019[is.na(Education2$X2019)] <- mean(Education2$X2019, na.rm = TRUE)
Education2$X2020[is.na(Education2$X2020)] <- mean(Education2$X2020, na.rm = TRUE)

Education1$Country.Name
```

```
##  [1] "Aruba"
##  [2] "Africa Eastern and Southern"
##  [3] "Afghanistan"
##  [4] "Africa Western and Central"
##  [5] "Angola"
##  [6] "Albania"
##  [7] "Andorra"
##  [8] "Arab World"
##  [9] "United Arab Emirates"
## [10] "Argentina"
## [11] "Armenia"
## [12] "American Samoa"
## [13] "Antigua and Barbuda"
## [14] "Australia"
## [15] "Austria"
## [16] "Azerbaijan"
## [17] "Burundi"
## [18] "Belgium"
## [19] "Benin"
## [20] "Burkina Faso"
## [21] "Bangladesh"
## [22] "Bulgaria"
## [23] "Bahrain"
## [24] "Bahamas, The"
## [25] "Bosnia and Herzegovina"
## [26] "Belarus"
## [27] "Belize"
## [28] "Bermuda"
## [29] "Bolivia"
## [30] "Brazil"
## [31] "Barbados"
## [32] "Brunei Darussalam"
## [33] "Bhutan"
## [34] "Botswana"
## [35] "Central African Republic"
## [36] "Canada"
## [37] "Central Europe and the Baltics"
## [38] "Switzerland"
## [39] "Channel Islands"
## [40] "Chile"
## [41] "China"
## [42] "Cote d'Ivoire"
## [43] "Cameroon"
## [44] "Congo, Dem. Rep."
## [45] "Congo, Rep."
## [46] "Colombia"
## [47] "Comoros"
## [48] "Cabo Verde"
## [49] "Costa Rica"
## [50] "Caribbean small states"
## [51] "Cuba"
## [52] "Curacao"
## [53] "Cayman Islands"
## [54] "Cyprus"
```

```
##  [55] "Czech Republic"
##  [56] "Germany"
##  [57] "Djibouti"
##  [58] "Dominica"
##  [59] "Denmark"
##  [60] "Dominican Republic"
##  [61] "Algeria"
##  [62] "East Asia & Pacific (excluding high income)"
##  [63] "Early-demographic dividend"
##  [64] "East Asia & Pacific"
##  [65] "Europe & Central Asia (excluding high income)"
##  [66] "Europe & Central Asia"
##  [67] "Ecuador"
##  [68] "Egypt, Arab Rep."
##  [69] "Euro area"
##  [70] "Eritrea"
##  [71] "Spain"
##  [72] "Estonia"
##  [73] "Ethiopia"
##  [74] "European Union"
##  [75] "Fragile and conflict affected situations"
##  [76] "Finland"
##  [77] "Fiji"
##  [78] "France"
##  [79] "Faroe Islands"
##  [80] "Micronesia, Fed. Sts."
##  [81] "Gabon"
##  [82] "United Kingdom"
##  [83] "Georgia"
##  [84] "Ghana"
##  [85] "Gibraltar"
##  [86] "Guinea"
##  [87] "Gambia, The"
##  [88] "Guinea-Bissau"
##  [89] "Equatorial Guinea"
##  [90] "Greece"
##  [91] "Grenada"
##  [92] "Greenland"
##  [93] "Guatemala"
##  [94] "Guam"
##  [95] "Guyana"
##  [96] "High income"
##  [97] "Hong Kong SAR, China"
##  [98] "Honduras"
##  [99] "Heavily indebted poor countries (HIPC)"
## [100] "Croatia"
## [101] "Haiti"
## [102] "Hungary"
## [103] "IBRD only"
## [104] "IDA & IBRD total"
## [105] "IDA total"
## [106] "IDA blend"
## [107] "Indonesia"
## [108] "IDA only"
## [109] "Isle of Man"
```

```
## [110] "India"
## [111] "Not classified"
## [112] "Ireland"
## [113] "Iran, Islamic Rep."
## [114] "Iraq"
## [115] "Iceland"
## [116] "Israel"
## [117] "Italy"
## [118] "Jamaica"
## [119] "Jordan"
## [120] "Japan"
## [121] "Kazakhstan"
## [122] "Kenya"
## [123] "Kyrgyz Republic"
## [124] "Cambodia"
## [125] "Kiribati"
## [126] "St. Kitts and Nevis"
## [127] "Korea, Rep."
## [128] "Kuwait"
## [129] "Latin America & Caribbean (excluding high income)"
## [130] "Lao PDR"
## [131] "Lebanon"
## [132] "Liberia"
## [133] "Libya"
## [134] "St. Lucia"
## [135] "Latin America & Caribbean"
## [136] "Least developed countries: UN classification"
## [137] "Low income"
## [138] "Liechtenstein"
## [139] "Sri Lanka"
## [140] "Lower middle income"
## [141] "Low & middle income"
## [142] "Lesotho"
## [143] "Late-demographic dividend"
## [144] "Lithuania"
## [145] "Luxembourg"
## [146] "Latvia"
## [147] "Macao SAR, China"
## [148] "St. Martin (French part)"
## [149] "Morocco"
## [150] "Monaco"
## [151] "Moldova"
## [152] "Madagascar"
## [153] "Maldives"
## [154] "Middle East & North Africa"
## [155] "Mexico"
## [156] "Marshall Islands"
## [157] "Middle income"
## [158] "North Macedonia"
## [159] "Mali"
## [160] "Malta"
## [161] "Myanmar"
## [162] "Middle East & North Africa (excluding high income)"
## [163] "Montenegro"
## [164] "Mongolia"
```
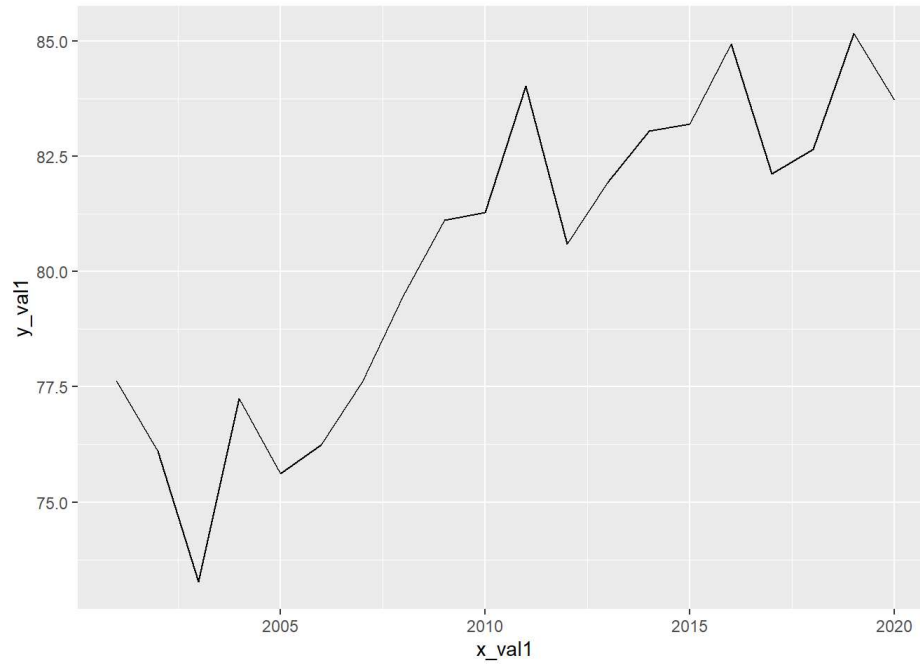
```
## [165] "Northern Mariana Islands"
## [166] "Mozambique"
## [167] "Mauritania"
## [168] "Mauritius"
## [169] "Malawi"
## [170] "Malaysia"
## [171] "North America"
## [172] "Namibia"
## [173] "New Caledonia"
## [174] "Niger"
## [175] "Nigeria"
## [176] "Nicaragua"
## [177] "Netherlands"
## [178] "Norway"
## [179] "Nepal"
## [180] "Nauru"
## [181] "New Zealand"
## [182] "OECD members"
## [183] "Oman"
## [184] "Other small states"
## [185] "Pakistan"
## [186] "Panama"
## [187] "Peru"
## [188] "Philippines"
## [189] "Palau"
## [190] "Papua New Guinea"
## [191] "Poland"
## [192] "Pre-demographic dividend"
## [193] "Puerto Rico"
## [194] "Korea, Dem. People's Rep."
## [195] "Portugal"
## [196] "Paraguay"
## [197] "West Bank and Gaza"
## [198] "Pacific island small states"
## [199] "Post-demographic dividend"
## [200] "French Polynesia"
## [201] "Qatar"
## [202] "Romania"
## [203] "Russian Federation"
## [204] "Rwanda"
## [205] "South Asia"
## [206] "Saudi Arabia"
## [207] "Sudan"
## [208] "Senegal"
## [209] "Singapore"
## [210] "Solomon Islands"
## [211] "Sierra Leone"
## [212] "El Salvador"
## [213] "San Marino"
## [214] "Somalia"
## [215] "Serbia"
## [216] "Sub-Saharan Africa (excluding high income)"
## [217] "South Sudan"
## [218] "Sub-Saharan Africa"
## [219] "Small states"
```

```
## [220] "Sao Tome and Principe"
## [221] "Suriname"
## [222] "Slovak Republic"
## [223] "Slovenia"
## [224] "Sweden"
## [225] "Eswatini"
## [226] "Sint Maarten (Dutch part)"
## [227] "Seychelles"
## [228] "Syrian Arab Republic"
## [229] "Turks and Caicos Islands"
## [230] "Chad"
## [231] "East Asia & Pacific (IDA & IBRD countries)"
## [232] "Europe & Central Asia (IDA & IBRD countries)"
## [233] "Togo"
## [234] "Thailand"
## [235] "Tajikistan"
## [236] "Turkmenistan"
## [237] "Latin America & the Caribbean (IDA & IBRD countries)"
## [238] "Timor-Leste"
## [239] "Middle East & North Africa (IDA & IBRD countries)"
## [240] "Tonga"
## [241] "South Asia (IDA & IBRD)"
## [242] "Sub-Saharan Africa (IDA & IBRD countries)"
## [243] "Trinidad and Tobago"
## [244] "Tunisia"
## [245] "Turkey"
## [246] "Tuvalu"
## [247] "Tanzania"
## [248] "Uganda"
## [249] "Ukraine"
## [250] "Upper middle income"
## [251] "Uruguay"
## [252] "United States"
## [253] "Uzbekistan"
## [254] "St. Vincent and the Grenadines"
## [255] "Venezuela, RB"
## [256] "British Virgin Islands"
## [257] "Virgin Islands (U.S.)"
## [258] "Vietnam"
## [259] "Vanuatu"
## [260] "World"
## [261] "Samoa"
## [262] "Kosovo"
## [263] "Yemen, Rep."
## [264] "South Africa"
## [265] "Zambia"
## [266] "Zimbabwe"
```

```
x_val1 <- c(2001:2020)
y_val1 <- c(Education1[36, 4], Education1[36, 5], Education1[36, 6], Education1[36, 7], Education1[36, 8], Education1[36, 9
], Education1[36, 10], Education1[36, 11], Education1[36, 12], Education1[36, 13], Education1[36, 14], Education1[36, 15], E
ducation1[36, 16], Education1[36, 17], Education1[36, 18], Education1[36, 19], Education1[36, 20], Education1[36, 21], Educa
tion1[36, 22], Education1[36, 23])

data <- data.frame(x_val1,y_val1)
ggplot(data, aes(x=x_val1, y=y_val1))+geom_line()
```



```
Education2$Country.Name
```

```
##   [1] "Aruba"
##   [2] "Africa Eastern and Southern"
##   [3] "Afghanistan"
##   [4] "Africa Western and Central"
##   [5] "Angola"
##   [6] "Albania"
##   [7] "Andorra"
##   [8] "Arab World"
##   [9] "United Arab Emirates"
##  [10] "Argentina"
##  [11] "Armenia"
##  [12] "American Samoa"
##  [13] "Antigua and Barbuda"
##  [14] "Australia"
##  [15] "Austria"
##  [16] "Azerbaijan"
##  [17] "Burundi"
##  [18] "Belgium"
##  [19] "Benin"
##  [20] "Burkina Faso"
##  [21] "Bangladesh"
##  [22] "Bulgaria"
##  [23] "Bahrain"
##  [24] "Bahamas, The"
##  [25] "Bosnia and Herzegovina"
##  [26] "Belarus"
##  [27] "Belize"
##  [28] "Bermuda"
##  [29] "Bolivia"
##  [30] "Brazil"
##  [31] "Barbados"
##  [32] "Brunei Darussalam"
##  [33] "Bhutan"
##  [34] "Botswana"
##  [35] "Central African Republic"
##  [36] "Canada"
##  [37] "Central Europe and the Baltics"
##  [38] "Switzerland"
##  [39] "Channel Islands"
##  [40] "Chile"
##  [41] "China"
##  [42] "Cote d'Ivoire"
##  [43] "Cameroon"
##  [44] "Congo, Dem. Rep."
##  [45] "Congo, Rep."
##  [46] "Colombia"
##  [47] "Comoros"
##  [48] "Cabo Verde"
##  [49] "Costa Rica"
##  [50] "Caribbean small states"
##  [51] "Cuba"
##  [52] "Curacao"
##  [53] "Cayman Islands"
##  [54] "Cyprus"
```

```
##  [55] "Czech Republic"
##  [56] "Germany"
##  [57] "Djibouti"
##  [58] "Dominica"
##  [59] "Denmark"
##  [60] "Dominican Republic"
##  [61] "Algeria"
##  [62] "East Asia & Pacific (excluding high income)"
##  [63] "Early-demographic dividend"
##  [64] "East Asia & Pacific"
##  [65] "Europe & Central Asia (excluding high income)"
##  [66] "Europe & Central Asia"
##  [67] "Ecuador"
##  [68] "Egypt, Arab Rep."
##  [69] "Euro area"
##  [70] "Eritrea"
##  [71] "Spain"
##  [72] "Estonia"
##  [73] "Ethiopia"
##  [74] "European Union"
##  [75] "Fragile and conflict affected situations"
##  [76] "Finland"
##  [77] "Fiji"
##  [78] "France"
##  [79] "Faroe Islands"
##  [80] "Micronesia, Fed. Sts."
##  [81] "Gabon"
##  [82] "United Kingdom"
##  [83] "Georgia"
##  [84] "Ghana"
##  [85] "Gibraltar"
##  [86] "Guinea"
##  [87] "Gambia, The"
##  [88] "Guinea-Bissau"
##  [89] "Equatorial Guinea"
##  [90] "Greece"
##  [91] "Grenada"
##  [92] "Greenland"
##  [93] "Guatemala"
##  [94] "Guam"
##  [95] "Guyana"
##  [96] "High income"
##  [97] "Hong Kong SAR, China"
##  [98] "Honduras"
##  [99] "Heavily indebted poor countries (HIPC)"
## [100] "Croatia"
## [101] "Haiti"
## [102] "Hungary"
## [103] "IBRD only"
## [104] "IDA & IBRD total"
## [105] "IDA total"
## [106] "IDA blend"
## [107] "Indonesia"
## [108] "IDA only"
## [109] "Isle of Man"
```

```
## [110] "India"
## [111] "Not classified"
## [112] "Ireland"
## [113] "Iran, Islamic Rep."
## [114] "Iraq"
## [115] "Iceland"
## [116] "Israel"
## [117] "Italy"
## [118] "Jamaica"
## [119] "Jordan"
## [120] "Japan"
## [121] "Kazakhstan"
## [122] "Kenya"
## [123] "Kyrgyz Republic"
## [124] "Cambodia"
## [125] "Kiribati"
## [126] "St. Kitts and Nevis"
## [127] "Korea, Rep."
## [128] "Kuwait"
## [129] "Latin America & Caribbean (excluding high income)"
## [130] "Lao PDR"
## [131] "Lebanon"
## [132] "Liberia"
## [133] "Libya"
## [134] "St. Lucia"
## [135] "Latin America & Caribbean"
## [136] "Least developed countries: UN classification"
## [137] "Low income"
## [138] "Liechtenstein"
## [139] "Sri Lanka"
## [140] "Lower middle income"
## [141] "Low & middle income"
## [142] "Lesotho"
## [143] "Late-demographic dividend"
## [144] "Lithuania"
## [145] "Luxembourg"
## [146] "Latvia"
## [147] "Macao SAR, China"
## [148] "St. Martin (French part)"
## [149] "Morocco"
## [150] "Monaco"
## [151] "Moldova"
## [152] "Madagascar"
## [153] "Maldives"
## [154] "Middle East & North Africa"
## [155] "Mexico"
## [156] "Marshall Islands"
## [157] "Middle income"
## [158] "North Macedonia"
## [159] "Mali"
## [160] "Malta"
## [161] "Myanmar"
## [162] "Middle East & North Africa (excluding high income)"
## [163] "Montenegro"
## [164] "Mongolia"
```

```
## [165] "Northern Mariana Islands"
## [166] "Mozambique"
## [167] "Mauritania"
## [168] "Mauritius"
## [169] "Malawi"
## [170] "Malaysia"
## [171] "North America"
## [172] "Namibia"
## [173] "New Caledonia"
## [174] "Niger"
## [175] "Nigeria"
## [176] "Nicaragua"
## [177] "Netherlands"
## [178] "Norway"
## [179] "Nepal"
## [180] "Nauru"
## [181] "New Zealand"
## [182] "OECD members"
## [183] "Oman"
## [184] "Other small states"
## [185] "Pakistan"
## [186] "Panama"
## [187] "Peru"
## [188] "Philippines"
## [189] "Palau"
## [190] "Papua New Guinea"
## [191] "Poland"
## [192] "Pre-demographic dividend"
## [193] "Puerto Rico"
## [194] "Korea, Dem. People's Rep."
## [195] "Portugal"
## [196] "Paraguay"
## [197] "West Bank and Gaza"
## [198] "Pacific island small states"
## [199] "Post-demographic dividend"
## [200] "French Polynesia"
## [201] "Qatar"
## [202] "Romania"
## [203] "Russian Federation"
## [204] "Rwanda"
## [205] "South Asia"
## [206] "Saudi Arabia"
## [207] "Sudan"
## [208] "Senegal"
## [209] "Singapore"
## [210] "Solomon Islands"
## [211] "Sierra Leone"
## [212] "El Salvador"
## [213] "San Marino"
## [214] "Somalia"
## [215] "Serbia"
## [216] "Sub-Saharan Africa (excluding high income)"
## [217] "South Sudan"
## [218] "Sub-Saharan Africa"
## [219] "Small states"
```

```
## [220] "Sao Tome and Principe"
## [221] "Suriname"
## [222] "Slovak Republic"
## [223] "Slovenia"
## [224] "Sweden"
## [225] "Eswatini"
## [226] "Sint Maarten (Dutch part)"
## [227] "Seychelles"
## [228] "Syrian Arab Republic"
## [229] "Turks and Caicos Islands"
## [230] "Chad"
## [231] "East Asia & Pacific (IDA & IBRD countries)"
## [232] "Europe & Central Asia (IDA & IBRD countries)"
## [233] "Togo"
## [234] "Thailand"
## [235] "Tajikistan"
## [236] "Turkmenistan"
## [237] "Latin America & the Caribbean (IDA & IBRD countries)"
## [238] "Timor-Leste"
## [239] "Middle East & North Africa (IDA & IBRD countries)"
## [240] "Tonga"
## [241] "South Asia (IDA & IBRD)"
## [242] "Sub-Saharan Africa (IDA & IBRD countries)"
## [243] "Trinidad and Tobago"
## [244] "Tunisia"
## [245] "Turkey"
## [246] "Tuvalu"
## [247] "Tanzania"
## [248] "Uganda"
## [249] "Ukraine"
## [250] "Upper middle income"
## [251] "Uruguay"
## [252] "United States"
## [253] "Uzbekistan"
## [254] "St. Vincent and the Grenadines"
## [255] "Venezuela, RB"
## [256] "British Virgin Islands"
## [257] "Virgin Islands (U.S.)"
## [258] "Vietnam"
## [259] "Vanuatu"
## [260] "World"
## [261] "Samoa"
## [262] "Kosovo"
## [263] "Yemen, Rep."
## [264] "South Africa"
## [265] "Zambia"
## [266] "Zimbabwe"
```

```
x_val2 <- c(2001:2020)
y_val2 <- c(Education2[36, 4], Education2[36, 5], Education2[36, 6], Education2[36, 7], Education2[36, 8], Education2[36, 9
], Education2[36, 10], Education2[36, 11], Education2[36, 12], Education2[36, 13], Education2[36, 14], Education2[36, 15], E
ducation2[36, 16], Education2[36, 17], Education2[36, 18], Education2[36, 19], Education2[36, 20], Education2[36, 21], Educa
tion2[36, 22], Education2[36, 23])

data <- data.frame(x_val2,y_val2)
ggplot(data, aes(x=x_val2, y=y_val2))+geom_line()
```