TECNOLÓGICO NACIONAL DE MÉXICO

INSTITUTO TECNOLÓGICO DE TIJUANA

SUBDIRECCIÓN ACADÉMICA

DEPARTAMENTO DE SISTEMAS Y COMPUTACIÓN

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Semestre: 9no

MATERIA: Minería de datos

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Practica Evaluatoria U1

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Introducción

En el presente documento se expondrá a detalle la práctica evaluatoria de la unidad 1, donde veremos la utilización de R y de la herramienta RStudio, el uso e importación de un archivo CSV, además de de datos provistos por vectores propios de R, y cómo se manipulan los mismos. R es un entorno y lenguaje de programación con un enfoque al análisis estadístico de datos, este nace como una reimplementación de software libre del lenguaje S, adicionado con soporte para ámbito estático.

Desarrollo

```
# Hirales Lazareno Raymundo - 17212339
# Galaviz Lona Oscar Eduardo - 17212993
#
# Se instalan las librerias necesarias
library(ggplot2)
# Primer vector de paises 2012
Countries_2012_Dataset <- c("Aruba","Afghanistan","Angola","Albania","United Arab
Emirates","Argentina","Armenia","Antigua and
Barbuda","Australia","Austria","Azerbaijan","Burundi","Belgium","Benin","Burkina
Faso","Bangladesh","Bulgaria","Bahrain","Bahamas, The","Bosnia and
Herzegovina","Belarus","Belize","Bermuda","Bolivia","Brazil","Barbados","Brunei
Darussalam","Bhutan","Botswana","Central African
Republic","Canada","Switzerland","Chile","China","Cote
d'Ivoire","Cameroon","Congo, Rep.","Colombia","Comoros","Cabo Verde","Costa
Rica","Cuba","Cayman Islands","Cyprus","Czech
Republic","Germany","Djibouti","Denmark","Dominican
Republic","Algeria","Ecuador","Egypt, Arab
Rep.","Eritrea","Spain","Estonia","Ethiopia","Finland","Fiji","France","Micronesia
, Fed. Sts.","Gabon","United Kingdom","Georgia","Ghana","Guinea","Gambia,
The","Guinea-Bissau","Equatorial
Guinea","Greece","Grenada","Greenland","Guatemala","Guam","Guyana","Hong Kong SAR,
China","Honduras","Croatia","Haiti","Hungary","Indonesia","India","Ireland","Iran,
Islamic
Rep.","Iraq","Iceland","Israel","Italy","Jamaica","Jordan","Japan","Kazakhstan","K
enya","Kyrgyz Republic","Cambodia","Kiribati","Korea, Rep.","Kuwait","Lao
PDR","Lebanon","Liberia","Libya","St. Lucia","Liechtenstein","Sri
Lanka","Lesotho","Lithuania","Luxembourg","Latvia","Macao SAR,
China","Morocco","Moldova","Madagascar","Maldives","Mexico","Macedonia,
FYR","Mali","Malta","Myanmar","Montenegro","Mongolia","Mozambique","Mauritania","M
auritius","Malawi","Malaysia","Namibia","New
Caledonia","Niger","Nigeria","Nicaragua","Netherlands","Norway","Nepal","New
Zealand","Oman","Pakistan","Panama","Peru","Philippines","Papua New
Guinea","Poland","Puerto Rico","Portugal","Paraguay","French
Polynesia","Qatar","Romania","Russian Federation","Rwanda","Saudi
Arabia","Sudan","Senegal","Singapore","Solomon Islands","Sierra Leone","El
Salvador","Somalia","Serbia","South Sudan","Sao Tome and
Principe","Suriname","Slovak
Republic","Slovenia","Sweden","Swaziland","Seychelles","Syrian Arab
Republic","Chad","Togo","Thailand","Tajikistan","Turkmenistan","Timor-
Leste","Tonga","Trinidad and
Tobago","Tunisia","Turkey","Tanzania","Uganda","Ukraine","Uruguay","United
States","Uzbekistan","St. Vincent and the Grenadines","Venezuela, RB","Virgin
```

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Islands (U.S.)","Vietnam","Vanuatu","West Bank and Gaza","Samoa","Yemen,
Rep.","South Africa","Congo, Dem. Rep.","Zambia","Zimbabwe")
#
# Segundo Vector de los codigos de los paises 2012
Codes_2012_Dataset <-
c("ABW","AFG","AGO","ALB","ARE","ARG","ARM","ATG","AUS","AUT","AZE","BDI","BEL","B
EN","BFA","BGD","BGR","BHR","BHS","BIH","BLR","BLZ","BMU","BOL","BRA","BRB","BRN",
"BTN","BWA","CAF","CAN","CHE","CHL","CHN","CIV","CMR","COG","COL","COM","CPV","CRI
","CUB","CYM","CYP","CZE","DEU","DJI","DNK","DOM","DZA","ECU","EGY","ERI","ESP","E
ST","ETH","FIN","FJI","FRA","FSM","GAB","GBR","GEO","GHA","GIN","GMB","GNB","GNQ",
"GRC","GRD","GRL","GTM","GUM","GUY","HKG","HND","HRV","HTI","HUN","IDN","IND","IRL
","IRN","IRQ","ISL","ISR","ITA","JAM","JOR","JPN","KAZ","KEN","KGZ","KHM","KIR","K
OR","KWT","LAO","LBN","LBR","LBY","LCA","LIE","LKA","LSO","LTU","LUX","LVA","MAC",
"MAR","MDA","MDG","MDV","MEX","MKD","MLI","MLT","MMR","MNE","MNG","MOZ","MRT","MUS
","MWI","MYS","NAM","NCL","NER","NGA","NIC","NLD","NOR","NPL","NZL","OMN","PAK","P
AN","PER","PHL","PNG","POL","PRI","PRT","PRY","PYF","QAT","ROU","RUS","RWA","SAU",
"SDN","SEN","SGP","SLB","SLE","SLV","SOM","SRB","SSD","STP","SUR","SVK","SVN","SWE
","SWZ","SYC","SYR","TCD","TGO","THA","TJK","TKM","TLS","TON","TTO","TUN","TUR","T
ZA","UGA","UKR","URY","USA","UZB","VCT","VEN","VIR","VNM","VUT","PSE","WSM","YEM",
"ZAF","COD","ZMB","ZWE")
#
# Tercer vector regiones de paises 2012
Regions_2012_Dataset <- c("The Americas","Asia","Africa","Europe","Middle
East","The Americas","Asia","The
Americas","Oceania","Europe","Asia","Africa","Europe","Africa","Africa","Asia","Eu
rope","Middle East","The Americas","Europe","Europe","The Americas","The
Americas","The Americas","The Americas","The
Americas","Asia","Asia","Africa","Africa","The Americas","Europe","The
Americas","Asia","Africa","Africa","Africa","The Americas","Africa","Africa","The
Americas","The Americas","The
Americas","Europe","Europe","Europe","Africa","Europe","The
Americas","Africa","The
Americas","Africa","Africa","Europe","Europe","Africa","Europe","Oceania","Europe"
,"Oceania","Africa","Europe","Asia","Africa","Africa","Africa","Africa","Africa","
Europe","The Americas","The Americas","The Americas","Oceania","The
Americas","Asia","The Americas","Europe","The
Americas","Europe","Asia","Asia","Europe","Middle East","Middle
East","Europe","Middle East","Europe","The Americas","Middle
East","Asia","Asia","Africa","Asia","Asia","Oceania","Asia","Middle
East","Asia","Middle East","Africa","Africa","The
Americas","Europe","Asia","Africa","Europe","Europe","Europe","Asia","Africa","Eur
ope","Africa","Asia","The
Americas","Europe","Africa","Europe","Asia","Europe","Asia","Africa","Africa","Afr
ica","Africa","Asia","Africa","Oceania","Africa","Africa","The
Americas","Europe","Europe","Asia","Oceania","Middle East","Asia","The
Americas","The Americas","Asia","Oceania","Europe","The Americas","Europe","The
Americas","Oceania","Middle East","Europe","Europe","Africa","Middle
East","Africa","Africa","Asia","Oceania","Africa","The
Americas","Africa","Europe","Africa","Africa","The
Americas","Europe","Europe","Europe","Africa","Africa","Middle
East","Africa","Africa","Asia","Asia","Asia","Asia","Oceania","The
Americas","Africa","Europe","Africa","Africa","Europe","The Americas","The
Americas","Asia","The Americas","The Americas","The
Americas","Asia","Oceania","Middle East","Oceania","Middle
```

```
East","Africa","Africa","Africa","Africa")
#
# Vector para la realizacion de esperanza de vida
Country_Code <-
c("ABW","AFG","AGO","ALB","ARE","ARG","ARM","ATG","AUS","AUT","AZE","BDI","BEL","B
EN","BFA","BGD","BGR","BHR","BHS","BIH","BLR","BLZ","BOL","BRA","BRB","BRN","BTN",
"BWA","CAF","CAN","CHE","CHL","CHN","CIV","CMR","COG","COL","COM","CPV","CRI","CUB
","CYP","CZE","DEU","DJI","DNK","DOM","DZA","ECU","EGY","ERI","ESP","EST","ETH","F
IN","FJI","FRA","FSM","GAB","GBR","GEO","GHA","GIN","GMB","GNB","GNQ","GRC","GRD",
"GTM","GUM","GUY","HKG","HND","HRV","HTI","HUN","IDN","IND","IRL","IRN","IRQ","ISL
","ITA","JAM","JOR","JPN","KAZ","KEN","KGZ","KHM","KIR","KOR","KWT","LAO","LBN","L
BR","LBY","LCA","LKA","LSO","LTU","LUX","LVA","MAC","MAR","MDA","MDG","MDV","MEX",
"MKD","MLI","MLT","MMR","MNE","MNG","MOZ","MRT","MUS","MWI","MYS","NAM","NCL","NER
","NGA","NIC","NLD","NOR","NPL","NZL","OMN","PAK","PAN","PER","PHL","PNG","POL","P
RI","PRT","PRY","PYF","QAT","ROU","RUS","RWA","SAU","SDN","SEN","SGP","SLB","SLE",
"SLV","SOM","SSD","STP","SUR","SVK","SVN","SWE","SWZ","SYR","TCD","TGO","THA","TJK
","TKM","TLS","TON","TTO","TUN","TUR","TZA","UGA","UKR","URY","USA","UZB","VCT","V
EN","VIR","VNM","VUT","WSM","YEM","ZAF","COD","ZMB","ZWE")
#
# Vector esperanza de vida de 1960
Life_Expectancy_At_Birth_1960 <-
c(65.5693658536586,32.328512195122,32.9848292682927,62.2543658536585,52.2432195121
951,65.2155365853659,65.8634634146342,61.7827317073171,70.8170731707317,68.5856097
560976,60.836243902439,41.2360487804878,69.7019512195122,37.2782682926829,34.47790
24390244,45.8293170731707,69.2475609756098,52.0893658536585,62.7290487804878,60.27
62195121951,67.7080975609756,59.9613658536585,42.1183170731707,54.2054634146342,60
.7380487804878,62.5003658536585,32.3593658536585,50.5477317073171,36.4826341463415
,71.1331707317073,71.3134146341463,57.4582926829268,43.4658048780488,36.8724146341
463,41.523756097561,48.5816341463415,56.716756097561,41.4424390243903,48.856414634
1463,60.5761951219512,63.9046585365854,69.5939268292683,70.3487804878049,69.312951
2195122,44.0212682926829,72.1765853658537,51.8452682926829,46.1351219512195,53.215
,48.0137073170732,37.3629024390244,69.1092682926829,67.9059756097561,38.4057073170
732,68.819756097561,55.9584878048781,69.8682926829268,57.5865853658537,39.57012195
12195,71.1268292682927,63.4318536585366,45.8314634146342,34.8863902439024,32.04221
95121951,37.8404390243902,36.7330487804878,68.1639024390244,59.8159268292683,45.53
16341463415,61.2263414634146,60.2787317073171,66.9997073170732,46.2883170731707,64
.6086585365854,42.1000975609756,68.0031707317073,48.6403170731707,41.1719512195122
,69.691756097561,44.945512195122,48.0306829268293,73.4286585365854,69.123902439024
4,64.1918292682927,52.6852682926829,67.6660975609756,58.3675853658537,46.362414634
1463,56.1280731707317,41.2320243902439,49.2159756097561,53.0013170731707,60.347951
2195122,43.2044634146342,63.2801219512195,34.7831707317073,42.6411951219512,57.303
756097561,59.7471463414634,46.5107073170732,69.8473170731707,68.4463902439024,69.7
868292682927,64.6609268292683,48.4466341463415,61.8127804878049,39.9746829268293,3
7.2686341463415,57.0656341463415,60.6228048780488,28.2116097560976,67.601780487804
9,42.7363902439024,63.7056097560976,48.3688048780488,35.0037073170732,43.483097560
9756,58.7452195121951,37.7736341463415,59.4753414634146,46.8803902439024,58.639024
3902439,35.5150487804878,37.1829512195122,46.9988292682927,73.3926829268293,73.549
756097561,35.1708292682927,71.2365853658537,42.6670731707317,45.2904634146342,60.8
817073170732,47.6915853658537,57.8119268292683,38.462243902439,67.6804878048781,68
.7196097560976,62.8089268292683,63.7937073170732,56.3570487804878,61.2060731707317
,65.6424390243903,66.0552926829268,42.2492926829268,45.6662682926829,48.1876341463
415,38.206,65.6598292682927,49.3817073170732,30.3315365853659,49.9479268292683,36.
9658780487805,31.6767073170732,50.4513658536585,59.6801219512195,69.9759268292683,
68.9780487804878,73.0056097560976,44.2337804878049,52.768243902439,38.016121951219
```

```
5,40.2728292682927,54.6993170731707,56.1535365853659,54.4586829268293,33.7271219512195,61.3645365853659,62.6575853658537,42.009756097561,45.3844146341463,43.6538780487805,43.9835609756098,68.2995365853659,67.8963902439025,69.7707317073171,58.8855365853659,57.7238780487805,59.2851219512195,63.7302195121951,59.0670243902439,46.4874878048781,49.969512195122,34.3638048780488,49.0362926829268,41.0180487804878,45.1098048780488,51.5424634146342)
#
# Vector esperanza de vida de 2013
Life_Expectancy_At_Birth_2013 <-
c(75.3286585365854,60.0282682926829,51.8661707317073,77.537243902439,77.1956341463415,75.9860975609756,74.5613658536585,75.7786585365854,82.1975609756098,80.890243902439,70.6931463414634,56.2516097560976,80.3853658536585,59.3120243902439,58.2406341463415,71.245243902439,74.4658536585366,76.5459512195122,75.0735365853659,76.2769268292683,72.4707317073171,69.9820487804878,67.9134390243903,74.1224390243903,75.3339512195122,78.5466585365854,69.1029268292683,64.3608048780488,49.8798780487805,81.4011219512195,82.7487804878049,81.1979268292683,75.3530243902439,51.2084634146342,55.0418048780488,61.6663902439024,73.8097317073171,62.9321707317073,72.9723658536585,79.2252195121951,79.2563902439025,79.9497804878049,78.2780487804878,81.0439024390244,61.6864634146342,80.3024390243903,73.3199024390244,74.5689512195122,75.648512195122,70.9257804878049,63.1778780487805,82.4268292682927,76.4243902439025,63.4421951219512,80.8317073170732,69.9179268292683,81.9682926829268,68.9733902439024,63.8435853658537,80.9560975609756,74.079512195122,61.1420731707317,58.216487804878,59.9992682926829,54.8384146341464,57.2908292682927,80.6341463414634,73.1935609756098,71.4863902439024,78.872512195122,66.3100243902439,83.8317073170732,72.9428536585366,77.1268292682927,62.4011463414634,75.2682926829268,68.7046097560976,67.6604146341463,81.0439024390244,75.1259756097561,69.4716829268293,83.1170731707317,82.290243902439,73.4689268292683,73.9014146341463,83.3319512195122,70.45,60.9537804878049,70.2024390243902,67.7720487804878,65.7665853658537,81.459756097561,74.462756097561,65.687243902439,80.1288780487805,60.5203902439024,71.6576829268293,74.9127073170732,74.2402926829268,49.3314634146342,74.1634146341464,81.7975609756098,73.9804878048781,80.3391463414634,73.7090487804878,68.811512195122,64.6739024390244,76.6026097560976,76.5326585365854,75.1870487804878,57.5351951219512,80.7463414634146,65.6540975609756,74.7583658536585,69.0618048780488,54.641512195122,62.8027073170732,74.46,61.466,74.567512195122,64.3438780487805,77.1219512195122,60.8281463414634,52.4421463414634,74.514756097561,81.1048780487805,81.4512195121951,69.222,81.4073170731707,76.8410487804878,65.9636829268293,77.4192195121951,74.2838536585366,68.1315609756097,62.4491707317073,76.8487804878049,78.7111951219512,80.3731707317073,72.7991707317073,76.3340731707317,78.4184878048781,74.4634146341463,71.0731707317073,63.3948292682927,74.1776341463415,63.1670487804878,65.878756097561,82.3463414634146,67.7189268292683,50.3631219512195,72.4981463414634,55.0230243902439,55.2209024390244,66.259512195122,70.99,76.2609756097561,80.2780487804878,81.7048780487805,48.9379268292683,74.7157804878049,51.1914878048781,59.1323658536585,74.2469268292683,69.4001707317073,65.4565609756098,67.5223658536585,72.6403414634147,70.3052926829268,73.6463414634147,75.1759512195122,64.2918292682927,57.7676829268293,71.159512195122,76.8361951219512,78.8414634146341,68.2275853658537,72.8108780487805,74.0744146341464,79.6243902439024,75.756487804878,71.669243902439,73.2503902439024,63.583512195122,56.7365853658537,58.2719268292683,59.2373658536585,55.633)
#
# Importacion de datos csv
stats <-read.csv(file.choose())
stats
#Tabla de los datos de la tasa de fertilidad que tiene el archivo csv
```

```
> stats
```

	Country.Name	Country.Code	Region	Year	Fertility.Rate
1	Aruba	ABW	The Americas	1960	4.820
2	Afghanistan	AFG	Asia	1960	7.450
3	Angola	AGO	Africa	1960	7.379
4	Albania	ALB	Europe	1960	6.186
5	United Arab Emirates	ARE	Middle East	1960	6.928
6	Argentina	ARG	The Americas	1960	3.109
7	Armenia	ARM	Asia	1960	4.550
8	Antigua and Barbuda	ATG	The Americas	1960	4.425
9	Australia	AUS	Oceania	1960	3.453
10	Austria	AUT	Europe	1960	2.690
11	Azerbaijan	AZE	Asia	1960	5.571
12	Burundi	BDI	Africa	1960	6.953
13	Belgium	BEL	Europe	1960	2.540
14	Benin	BEN	Africa	1960	6.282
15	Burkina Faso	BFA	Africa	1960	6.291
16	Bangladesh	BGD	Asia	1960	6.725
17	Bulgaria	BGR	Europe	1960	2.310

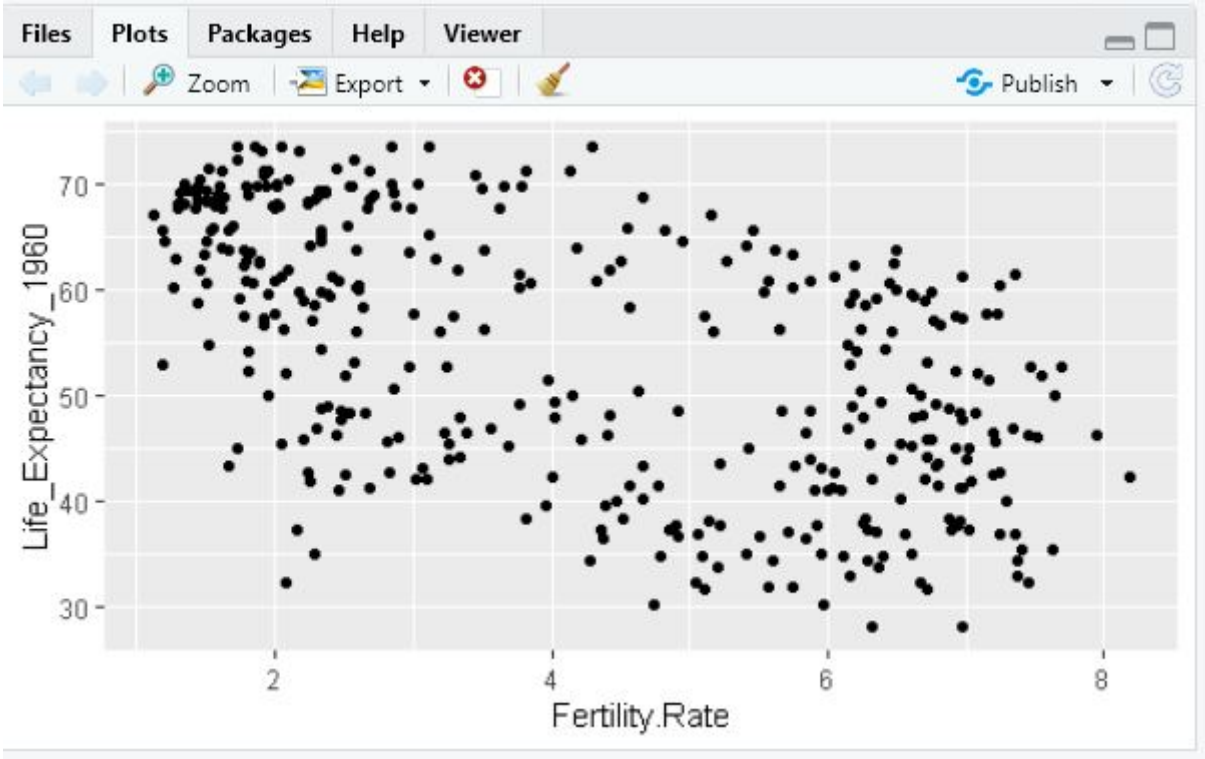
```
#
# Generamos un nuevo dataframe con los nuevos datos de expectativa de vida
Life_Expectancy <- data.frame(CountryCode = Country_Code, Life_Expectancy_1960 =
Life_Expectancy_At_Birth_1960, Life_Expectancy_2013 =
Life_Expectancy_At_Birth_2013)
Life_Expectancy
#tabla de la esperanza de vida del año 1960 y 2013
```

```
> Life_Expectancy
    CountryCode Life_Expectancy_1960 Life_Expectancy_2013
1           ABW              65.56937              75.32866
2           AFG              32.32851              60.02827
3           AGO              32.98483              51.86617
4           ALB              62.25437              77.53724
5           ARE              52.24322              77.19563
6           ARG              65.21554              75.98610
7           ARM              65.86346              74.56137
8           ATG              61.78273              75.77866
9           AUS              70.81707              82.19756
10          AUT              68.58561              80.89024
11          AZE              60.83624              70.69315
12          BDI              41.23605              56.25161
13          BEL              69.70195              80.38537
14          BEN              37.27827              59.31202
15          BFA              34.47790              58.24063
16          BGD              45.82932              71.24524
17          BGR              69.24756              74.46585
18          BHR              52.08937              76.54595
19          BHS              62.72905              75.07354
20          BIH              60.27622              76.27693
21          BLR              67.70810              72.47073
22          BLZ              59.96137              69.98205
23          BOL              42.11832              67.91344
24          BRA              54.20546              74.12244
25          BRB              60.73805              75.33395
26          BRN              62.50037              78.54666
```

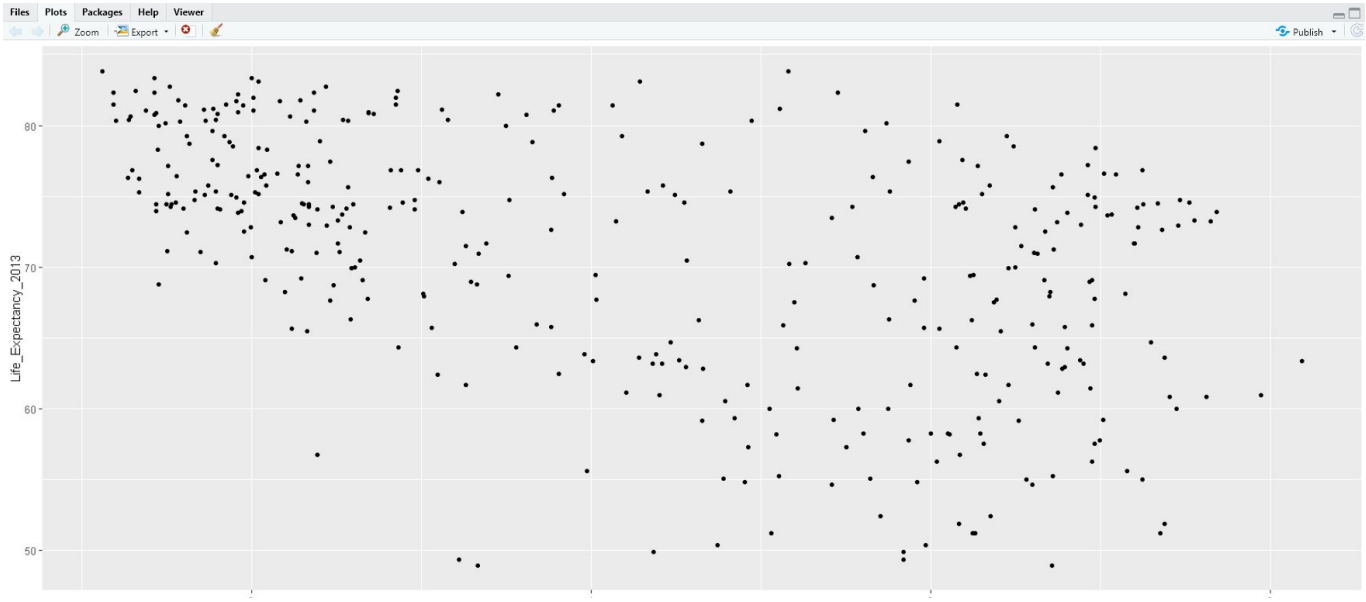
```
#
# Generamos un merge para complementar ambos y crear la tabla
le_dfMerge <- merge(stats, Life_Expectancy, by.x = "Country.Code", by.y =
"CountryCode")
#Mostramos la tabla de comparacion con las diferentes fechas
le_dfMerge
```

	Country.Code	Country.Name	Region	Year	Fertility.Rate	Life_Expectancy_1960	Life_Expectancy_2013
1	ABW	Aruba	The Americas	1960	4.820	65.56937	75.32866
2	ABW	Aruba	The Americas	2013	1.669	65.56937	75.32866
3	AFG	Afghanistan	Asia	2013	5.050	32.32851	60.02827
4	AFG	Afghanistan	Asia	1960	7.450	32.32851	60.02827
5	AGO	Angola	Africa	2013	6.165	32.98483	51.86617
6	AGO	Angola	Africa	1960	7.379	32.98483	51.86617
7	ALB	Albania	Europe	2013	1.771	62.25437	77.53724
8	ALB	Albania	Europe	1960	6.186	62.25437	77.53724
9	ARE	United Arab Emirates	Middle East	1960	6.928	52.24322	77.19563
10	ARE	United Arab Emirates	Middle East	2013	1.801	52.24322	77.19563
11	ARG	Argentina	The Americas	2013	2.335	65.21554	75.98610
12	ARG	Argentina	The Americas	1960	3.109	65.21554	75.98610
13	ARM	Armenia	Asia	2013	1.553	65.86346	74.56137
14	ARM	Armenia	Asia	1960	4.550	65.86346	74.56137
15	ATG	Antigua and Barbuda	The Americas	2013	2.088	61.78273	75.77866
16	ATG	Antigua and Barbuda	The Americas	1960	4.425	61.78273	75.77866
17	AUS	Australia	Oceania	1960	3.453	70.81707	82.19756
18	AUS	Australia	Oceania	2013	1.921	70.81707	82.19756
19	AUT	Austria	Europe	2013	1.440	68.58561	80.89024
20	AUT	Austria	Europe	1960	2.690	68.58561	80.89024
21	AZE	Azerbaijan	Asia	2013	2.000	60.83624	70.69315
22	AZE	Azerbaijan	Asia	1960	5.571	60.83624	70.69315
23	BDI	Burundi	Africa	2013	6.035	41.23605	56.25161
24	BDI	Burundi	Africa	1960	6.953	41.23605	56.25161
25	BEL	Belgium	Europe	1960	2.540	69.70195	80.38537
26	BEL	Belgium	Europe	2013	1.790	69.70195	80.38537
27	BEN	Benin	Africa	1960	6.282	37.27827	59.31202
28	BEN	Benin	Africa	2013	4.846	37.27827	59.31202
29	BFA	Burkina Faso	Africa	2013	5.607	34.47790	58.24063
30	BFA	Burkina Faso	Africa	1960	6.291	34.47790	58.24063
31	BGD	Bangladesh	Asia	2013	2.209	45.82932	71.24524
32	BGD	Bangladesh	Asia	1960	6.725	45.82932	71.24524
33	BGR	Bulgaria	Europe	2013	1.500	69.24756	74.46585
34	BGR	Bulgaria	Europe	1960	2.310	69.24756	74.46585
35	BHR	Bahrain	Middle East	1960	7.090	52.08937	76.54595
36	BHR	Bahrain	Middle East	2013	2.075	52.08937	76.54595
37	BHS	Bahamas, The	The Americas	2013	1.883	62.72905	75.07354
38	BHS	Bahamas, The	The Americas	1960	4.495	62.72905	75.07354
39	BIH	Bosnia and Herzegovina	Europe	2013	1.272	60.27622	76.27693
40	BIH	Bosnia and Herzegovina	Europe	1960	3.770	60.27622	76.27693
41	BLR	Belarus	Europe	2013	1.620	67.70810	72.47073
42	BLR	Belarus	Europe	1960	2.670	67.70810	72.47073
43	BLZ	Belize	The Americas	1960	6.500	59.96137	69.98205
44	BLZ	Belize	The Americas	2013	2.611	59.96137	69.98205
45	BOL	Bolivia	The Americas	2013	3.017	42.11832	67.91344
46	BOL	Bolivia	The Americas	1960	6.700	42.11832	67.91344
47	BRA	Brazil	The Americas	2013	1.801	54.20546	74.12244
48	BRA	Brazil	The Americas	1960	6.210	54.20546	74.12244
49	BRB	Barbados	The Americas	2013	1.791	60.73805	75.33395
50	BRB	Barbados	The Americas	1960	4.333	60.73805	75.33395
51	BRN	Brunei Darussalam	Asia	1960	6.487	62.50037	78.54666
52	BRN	Brunei Darussalam	Asia	2013	1.893	62.50037	78.54666
53	BTN	Bhutan	Asia	2013	2.082	32.35937	69.10293
54	BTN	Bhutan	Asia	1960	6.670	32.35937	69.10293
55	BWA	Botswana	Africa	1960	6.615	50.54773	64.36080
56	BWA	Botswana	Africa	2013	2.864	50.54773	64.36080
57	CAF	Central African Republic	Africa	1960	5.840	36.48263	49.87988
58	CAF	Central African Republic	Africa	2013	4.368	36.48263	49.87988
59	CAN	Canada	The Americas	1960	3.811	71.13317	81.40112
60	CAN	Canada	The Americas	2013	1.610	71.13317	81.40112
61	CHE	Switzerland	Europe	1960	2.440	71.31341	82.74878
62	CHE	Switzerland	Europe	2013	1.520	71.31341	82.74878
63	CHL	Chile	The Americas	1960	5.113	57.45829	81.19793
64	CHL	Chile	The Americas	2013	1.774	57.45829	81.19793
65	CHN	China	Asia	1960	5.758	43.46580	75.35302
66	CHN	China	Asia	2013	1.668	43.46580	75.35302
67	CIV	Cote d'Ivoire	Africa	1960	7.351	36.87241	51.20846
68	CIV	Cote d'Ivoire	Africa	2013	5.063	36.87241	51.20846
69	CMR	Cameroon	Africa	1960	5.647	41.52376	55.04180
70	CMR	Cameroon	Africa	2013	4.781	41.52376	55.04180
71	COD	Congo, Dem. Rep.	Africa	2013	6.103	41.01805	58.27193

```
#
#Se muestra la expectativa de vida del año 1960
qplot(data = le_dfMerge, y = Life_Expectancy_1960, x = Fertility.Rate)
```




```
#
#Se muestra la expectativa de vida del año 2013
qplot(data = le_dfMerge, y = Life_Expectancy_2013, x = Fertility.Rate)
```




```
#
#Una vez obtenida esta informacion podemos generar una grafica que relacione
#el porcentaje de fertilidad y la expectativa de vida por pais y para el año de
1960
qplot(data = le_dfMerge, x = Fertility.Rate, y = Life_Expectancy_1960, color =
Country.Name, size=I(3), shape=I(19), alpha =I(.4), main = "Fertility Rate vs Life
Expectancy by Country in 1960")
```

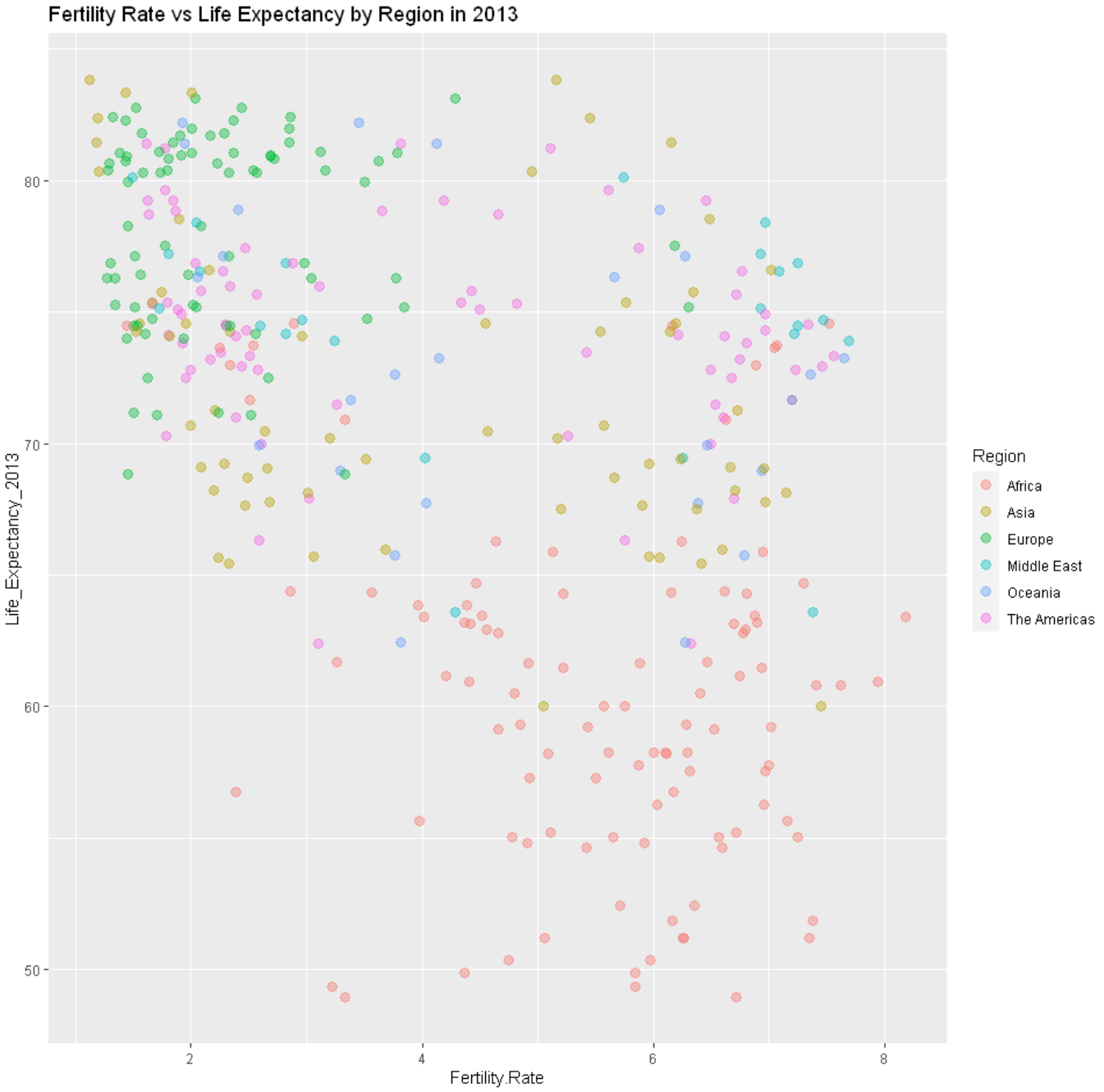
```
#grafica correspondiente al año 1960 comparando la fertilizada con la expectativa
de vida por pais
```


```
#
#Una vez realizada la grafica de 1960 procedemos a crear la del 2013 comparando
#el porcentaje de fertilidad y la expectativa de vida para cada pais en el año
2013
qplot(data = le_dfMerge, x = Fertility.Rate, y = Life_Expectancy_2013, color =
Country.Name, size=I(3), shape=I(19), alpha =I(.4), main = "Fertility Rate vs Life
Expectancy by Country in 2013")
#grafica correspondiente al año 2013, comparando la tasa de fertilidad y
expectativa de vida por cada pais
```

```
#
#una vez realizado las graficas de los años 1960 y 2013 para cada pais procedemos
a crear la de cada de region para los mismos años
#empezando por 1960
qplot(data = le_dfMerge, x = Fertility.Rate, y = Life_Expectancy_1960, color =
Region, size=I(3), shape=I(19), alpha =I(.4), main = "Fertility Rate vs Life
Expectancy by Region in 1960")
#esta es la grafica de cada region comparando la tasa de fertilidad con la
expectativa de vida en 1960
```


```
#
qplot(data = le_dfMerge, x = Fertility.Rate, y = Life_Expectancy_2013, color =
Region, size=I(3), shape=I(19), alpha =I(.4), main = "Fertility Rate vs Life
Expectancy by Region in 2013")
```

```
#esta es la grafica de cada region comparando la tasa de fertilidad con la
expectativa de vida en 2013
```



Conclusión

Podemos notar que lo más Importante en la comparativa de las distintas fechas es el gran salto que tuvo todo el planeta en cuanto a la esperanza de vida ya que en 2013 se estableció un nuevo mínimo de 50 puntos que está mucho más arriba del viejo mínimo de 30 puntos. Además por desgracia el único país que se mantuvo en el nuevo mínimo es la región de áfrica que se mantiene y una tasa de fertilidad bastante alta. Lo que Europa muestra es una constante de alta esperanza de vida pero muy poca fertilidad lo que normalmente acarrea muchos problemas sociales y económicos pero que en este caso no han afectado por el momento para nada la situación socioeconómica de la región. En cuanto al trabajo en R podemos decir que a pesar de que a simple vista esta herramienta podría parecer de lo más complicado en realidad es una herramienta de lo más útil y completa a la hora del análisis de datos, en cambio para la realizacion de la practica resulto satisfactorio

y a la vez algo cuestionable porque teniamos que analisar los datos asi como representarlos de manera correcta en las graficas.