Economics Project PPT

## Quarto

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## Running Code

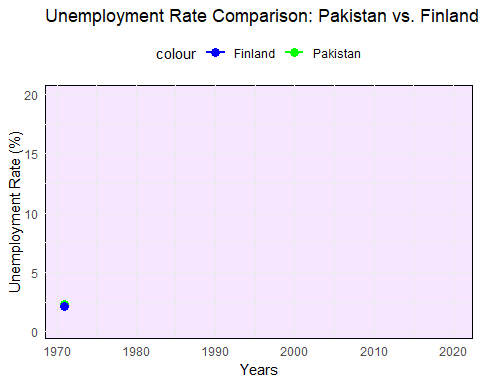
When you click the **Render** button a document will be generated that includes both content and the output of embedded code. You can embed code like this:

library(ggplot2)

library(dplyr)

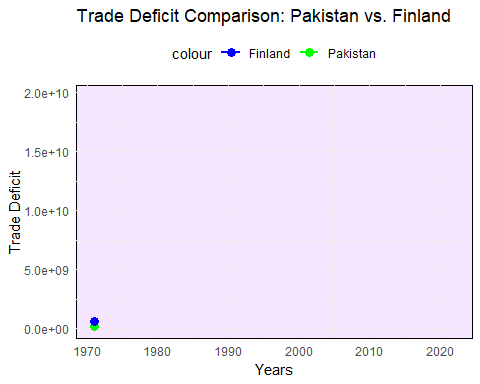
library(gganimate)

# Unemployment data for Pakistan  
unemployment\_pak <- c(2.26, 2.42, 2.45, 1.61, 2.08, 3.75, 6.09, 7.23, 6.2, 4.86, 5.04, 5.28, 5.43, 5.12, 5, 5.32, 5.07, 4.47, 3.14, 3.069, 6.503, 11.595, 16.201, 16.426, 19.78, 15.572, 14.968, 13.215, 11.693, 12.49, 10.291, 10.423, 10.469, 10.358, 8.384, 7.719, 6.854, 6.369, 8.25, 8.394, 7.781, 7.689, 8.193, 8.663, 9.376, 8.818, 8.64, 7.361, 6.695, 7.759, 7.606, 6.719)  
  
years\_pak <- 1971:(1971 + length(unemployment\_pak) - 1)  
  
# Unemployment data for Finland  
unemployment\_fin <- c(2.09, 2.15, 2, 1.67, 1.7, 1.9, 1.9, 4.18, 4.12, 4.01, 3.82, 3.82, 4.3, 4.16, 3.97, 3.97, 3.05, 2.16, 2.03, 1.97, 5.85, 5.18, 4.28, 4.26, 5.03, 4.79, 5.81, 5.7, 5.35, 7.16, 6.88, 7.83, 7.49, 7.4, 7.05, 0.582, 0.398, 0.423, 0.535, 0.653, 0.796, 3.667, 2.954, 1.827, 3.566, 2.286, 4.083, 4.83, 6.338, 6.719)  
  
years\_fin <- 1971:(1971 + length(unemployment\_fin) - 1)  
  
# Filter the common years  
common\_years\_unemployment <- intersect(years\_pak, years\_fin)  
  
data\_unemployment <- data.frame(years = common\_years\_unemployment,  
 unemployment\_pak = unemployment\_pak[match(common\_years\_unemployment, years\_pak)],  
 unemployment\_fin = unemployment\_fin[match(common\_years\_unemployment, years\_fin)])  
  
ggplot(data\_unemployment, aes(x = years)) +   
 geom\_line(aes(y = unemployment\_pak, color = "Pakistan"), size = 1) +  
 geom\_point(aes(y = unemployment\_pak, color = "Pakistan"), size = 3) +  
 geom\_line(aes(y = unemployment\_fin, color = "Finland"), size = 1) +  
 geom\_point(aes(y = unemployment\_fin, color = "Finland"), size = 3) +  
 labs(title = "Unemployment Rate Comparison: Pakistan vs. Finland", x = "Years", y = "Unemployment Rate (%)") +  
 scale\_color\_manual(values = c("Pakistan" = "green", "Finland" = "blue")) +  
 theme\_minimal() +  
 theme(legend.position = "top", panel.background = element\_rect(fill = "#F7E6FF")) + # Light Gray background  
 transition\_reveal(years)

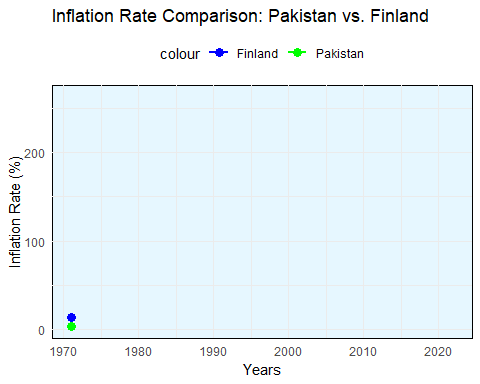


You can add options to executable code like this

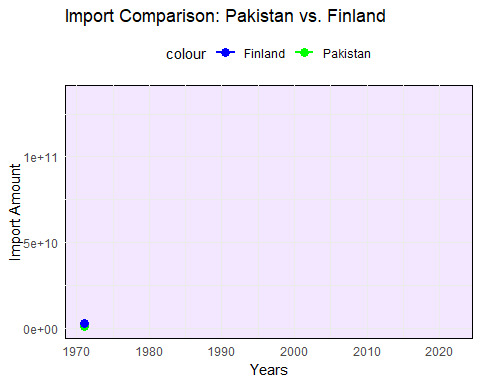
library(ggplot2)  
library(dplyr)  
library(gganimate)  
# Trade deficit data for Pakistan  
trade\_deficit\_pak <- c(129440041.3, 220737202.1, 412028469.8, 392340075.4, 340278171.9, 466155371.8, 448862251.6, 407696188.1, 213026412.6, 495824324.7, 721498358.9, 968517412.7, 1972535047, 1035477000, 807449912.1, 709063740.8, 501874817.3, 394593909.4, 520537572, 295910500.6, 526524067, 850192500.7, 1196800785, 2929398397, 1732811460, 548285615.3, 1194844446, 1028001946, 1511368705, 1513347514, 3640025804, 8078289631, 10940965436, 9799027457, 10032828334, 11543115498, 14044024197, 7194233937, 11318242634, 14345903940, 14527990312, 10241503776, 5155988089, 11807078698, 17829731393, 19650422286, 15764804402, 9174683599, 13421197226, 14591657230, 19028414245, 6159296212)  
  
years\_pak <- 1971:(1971 + length(trade\_deficit\_pak) - 1)  
  
# Trade deficit data for Finland  
trade\_deficit\_fin <- c(623132343.7, 667646121.4, 574282671, 595855017.6, 433174187.1, 462113602.8, 531099281, 1222893499, 1539989015, 1870184504, 1483688177, 1517500811, 1237729200, 2754270554, 3749916520, 1787135667, 6417520762, 6369202833, 5111155526, 9644062660, 7608722368, 5213449147, 5410778797, 10661974712, 10038336451, 6916261115, 8416628559, 9694481013, 8219728947, 7976924083, 7983348163, 9284954098, 10514943632, 12221530497, 10521093301, 6494233358, 7063149053, 6979372867, 9710584792, 7326737725, 7857077418, 8453224912, 9369246806, 8773770780, 8341475637, 8654839380, 8458376392, 8284157187, 9020281293, 10492037777, 13875628703, 13180100339)  
  
years\_fin <- 1971:(1971 + length(trade\_deficit\_fin) - 1)  
  
# Filter the common years  
common\_years\_trade\_deficit <- intersect(years\_pak, years\_fin)  
  
data\_trade\_deficit <- data.frame(  
 years = common\_years\_trade\_deficit,  
 trade\_deficit\_pak = trade\_deficit\_pak[match(common\_years\_trade\_deficit, years\_pak)],  
 trade\_deficit\_fin = trade\_deficit\_fin[match(common\_years\_trade\_deficit, years\_fin)]  
)  
  
ggplot(data\_trade\_deficit, aes(x = years)) +  
 geom\_line(aes(y = trade\_deficit\_pak, color = "Pakistan"), size = 1) +  
 geom\_point(aes(y = trade\_deficit\_pak, color = "Pakistan"), size = 3) +  
 geom\_line(aes(y = trade\_deficit\_fin, color = "Finland"), size = 1) +  
 geom\_point(aes(y = trade\_deficit\_fin, color = "Finland"), size = 3) +  
 labs(title = "Trade Deficit Comparison: Pakistan vs. Finland", x = "Years", y = "Trade Deficit") +  
 scale\_color\_manual(values = c("Pakistan" = "green", "Finland" = "blue")) +  
 theme\_minimal() +  
 theme(legend.position = "top", panel.background = element\_rect(fill = "#F7E6FF")) +  
 transition\_reveal(years)



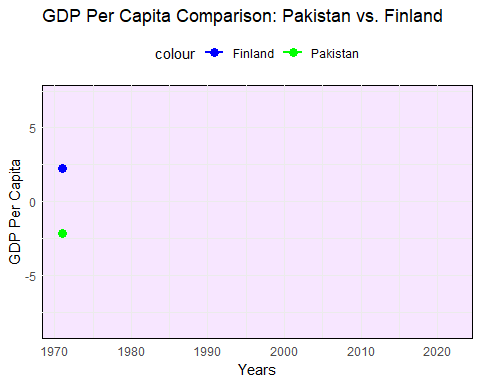
library(ggplot2)  
library(dplyr)  
library(gganimate)  
# Inflation data for Pakistan  
inflation\_pak <- c(3.05, 3.21, 3.95, 5.01, 6.05, 6.49, 7.14, 7.58, 8.21, 9.19, 10.28, 10.89, 11.58, 12.29, 12.98, 13.43, 14.06, 15.30, 16.50, 18.00, 20.12, 22.03, 24.23, 27.23, 30.59, 33.76, 37.60, 39.94, 41.60, 43.41, 44.78, 46.25, 47.60, 51.14, 55.78, 60.20, 64.77, 77.91, 88.54, 100.00, 111.92, 122.75, 132.19, 141.70, 145.28, 150.75, 156.91, 164.88, 182.32, 200.08, 219.08, 262.62)  
  
years\_pak <- 1971:(1971 + length(inflation\_pak) - 1)  
  
# Inflation data for Finland  
inflation\_fin <- c(14.02, 14.96, 16.57, 19.37, 22.82, 26.10, 29.18, 31.45, 33.80, 37.72, 41.98, 46.01, 49.86, 53.38, 56.15, 57.80, 60.18, 63.24, 67.41, 71.55, 74.64, 76.82, 78.50, 79.35, 79.98, 80.48, 81.44, 82.58, 83.54, 86.08, 88.30, 89.69, 90.48, 90.65, 91.21, 92.64, 94.97, 98.83, 98.83, 100.00, 103.42, 106.32, 107.89, 109.02, 108.79, 109.18, 110.00, 111.19, 112.33, 112.66, 115.13, 123.33)  
  
years\_fin <- 1971:(1971 + length(inflation\_fin) - 1)  
  
# Filter the common years  
common\_years\_inflation <- intersect(years\_pak, years\_fin)  
  
data\_inflation <- data.frame(years = common\_years\_inflation,  
 inflation\_pak = inflation\_pak[match(common\_years\_inflation, years\_pak)],  
 inflation\_fin = inflation\_fin[match(common\_years\_inflation, years\_fin)])  
  
ggplot(data\_inflation, aes(x = years)) +  
 geom\_line(aes(y = inflation\_pak, color = "Pakistan"), size = 1) +  
 geom\_point(aes(y = inflation\_pak, color = "Pakistan"), size = 3) +  
 geom\_line(aes(y = inflation\_fin, color = "Finland"), size = 1) +  
 geom\_point(aes(y = inflation\_fin, color = "Finland"), size = 3) +  
 labs(title = "Inflation Rate Comparison: Pakistan vs. Finland", x = "Years", y = "Inflation Rate (%)") +  
 scale\_color\_manual(values = c("Pakistan" = "green", "Finland" = "blue")) +  
 theme\_minimal() +  
 theme(legend.position = "top", panel.background = element\_rect(fill = "#E6F7FF")) +  
 transition\_reveal(years)



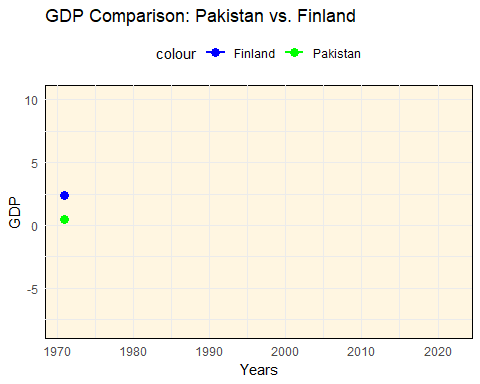
library(ggplot2)  
library(dplyr)  
library(gganimate)  
# Import data for Pakistan  
import\_pak <- c(1117807644, 814017565, 907783978.1, 1535555556, 2324848485, 2409494949, 2701111111, 3292929293, 4295858586, 5512929293, 6275656566, 6492985782, 6458110236, 6843425349, 7040171504, 6415065096, 6366035537, 7473483338, 8174710143, 8100453419, 8434875711, 9984113697, 11552190707, 9883122490, 11777213240, 13567628711, 12967600154, 10900343052, 10684436463, 11769393573, 12581363793, 11619632998, 14030220249, 17697602918, 25595408170, 33184878526, 35286554453, 45441535498, 39220849369, 38066805527, 43534938844, 48633321047, 48401947685, 49596211161, 50134755424, 50070597552, 58514392790, 67821962097, 62624560742, 52327295783, 62659184537, 84315687274)  
  
years\_pak <- 1971:(1971 + length(import\_pak) - 1)  
  
# Import data for Finland  
import\_fin <- c(3116111111, 3558591913, 4849296717, 7338853001, 8310974624, 8192029543, 8555407998, 8979061372, 12688139215, 17233025183, 15896941306, 15153570988, 14637062340, 14340126632, 15264773599, 17894675111, 22422561883, 26449182658, 29576001108, 33514227958, 28389942655, 27792673215, 23895076507, 29329538987, 37987472767, 38849339891, 38637040431, 39579439252, 38733513445, 41414786698, 39524131051, 42352247165, 52757320690, 63874383958, 74385401475, 84467899655, 1.00068E+11, 1.17956E+11, 86296583224, 92411731683, 1.09358E+11, 1.04252E+11, 1.06038E+11, 1.03434E+11, 84375126793, 86889680552, 95877171128, 1.09521E+11, 1.06667E+11, 97093522437, 1.1694E+11, 1.34914E+11)  
  
years\_fin <- 1971:(1971 + length(import\_fin) - 1)  
  
# Filter the common years  
common\_years\_import <- intersect(years\_pak, years\_fin)  
  
data\_import <- data.frame(years = common\_years\_import,  
 import\_pak = import\_pak[match(common\_years\_import, years\_pak)],  
 import\_fin = import\_fin[match(common\_years\_import, years\_fin)])  
  
ggplot(data\_import, aes(x = years)) +  
 geom\_line(aes(y = import\_pak, color = "Pakistan"), size = 1) +  
 geom\_point(aes(y = import\_pak, color = "Pakistan"), size = 3) +  
 geom\_line(aes(y = import\_fin, color = "Finland"), size = 1) +  
 geom\_point(aes(y = import\_fin, color = "Finland"), size = 3) +  
 labs(title = "Import Comparison: Pakistan vs. Finland", x = "Years", y = "Import Amount") +  
 scale\_color\_manual(values = c("Pakistan" = "green", "Finland" = "blue")) +  
 theme\_minimal() +  
 theme(legend.position = "top", panel.background = element\_rect(fill = "#F3E6FF")) +  
 transition\_reveal(years)



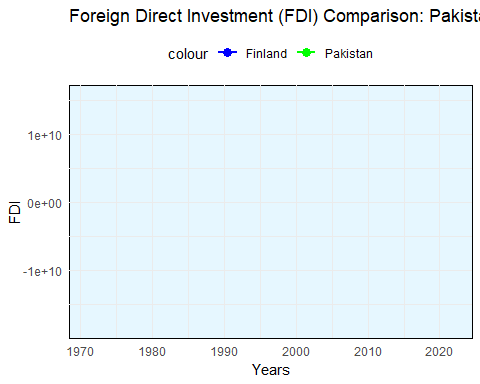
library(ggplot2)  
library(dplyr)  
library(gganimate)  
# GDP per capita data for Pakistan  
gdp\_pak <- c(-2.152156811, -1.816669331, 4.106332712, 0.623272128, 1.186000345, 2.006001303, 0.762338883, 4.670487814, 0.249198303, 5.818348808, 3.25132238, 2.221561385, 2.965681287, 1.797705947, 4.138315668, 1.834970708, 2.74307172, 3.920326229, 1.479718397, 1.070266491, 1.721644178, 4.914473074, -0.812757165, 0.768829473, 1.909286568, 1.700962519, -1.912790954, -0.372285231, 0.739013701, 1.102322127, 0.495411848, 0.052876798, 3.118745379, 5.447802213, 4.985829705, 3.849318916, 2.2318834, -0.080584206, 1.191497907, -0.759129914, 0.535424529, 1.191726852, 2.775116261, 2.659526508, 2.875424595, 5.298324299, 3.05478922, 4.532445206, 0.862674222, -2.97029465, 4.578160431, 2.742112345)  
  
years\_pak <- 1971:(1971 + length(gdp\_pak) - 1)  
  
# GDP per capita data for Finland  
gdp\_fin <- c(2.227824609, 7.096153516, 6.377978811, 2.697457779, 1.354025294, 0.042351174, -0.040505648, 2.624625735, 6.848494759, 5.061714695, 0.884671018, 2.532004036, 2.503843385, 2.687519899, 3.117925686, 2.422429813, 3.28147645, 4.9117397, 4.708443331, 0.224909953, -6.398949439, -3.836533052, -1.141488063, 3.515885274, 3.819876288, 3.327669342, 6.018052758, 5.17759148, 4.137574737, 5.553997853, 2.37665487, 1.460928622, 1.76083857, 3.690587797, 2.428689227, 3.628941348, 4.852313276, 0.315886377, -8.513028487, 2.714966735, 2.073396315, -1.865591174, -1.357215611, -0.776108383, 0.21302942, 2.516379895, 2.950531373, 1.00565417, 1.113269092, -2.495122968, 2.957288554, 1.325876786)  
  
years\_fin <- 1971:(1971 + length(gdp\_fin) - 1)  
  
# Filter the common years  
common\_years\_gdp <- intersect(years\_pak, years\_fin)  
  
data\_gdp <- data.frame(years = common\_years\_gdp,  
 gdp\_pak = gdp\_pak[match(common\_years\_gdp, years\_pak)],  
 gdp\_fin = gdp\_fin[match(common\_years\_gdp, years\_fin)])  
  
ggplot(data\_gdp, aes(x = years)) +  
 geom\_line(aes(y = gdp\_pak, color = "Pakistan"), size = 1) +  
 geom\_point(aes(y = gdp\_pak, color = "Pakistan"), size = 3) +  
 geom\_line(aes(y = gdp\_fin, color = "Finland"), size = 1) +  
 geom\_point(aes(y = gdp\_fin, color = "Finland"), size = 3) +  
 labs(title = "GDP Per Capita Comparison: Pakistan vs. Finland", x = "Years", y = "GDP Per Capita") +  
 scale\_color\_manual(values = c("Pakistan" = "green", "Finland" = "blue")) +  
 theme\_minimal() +  
 theme(legend.position = "top", panel.background = element\_rect(fill = "#F7E6FF")) + # Light Lavender  
 transition\_reveal(years)



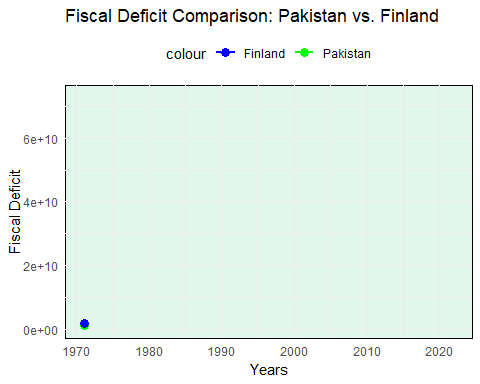
library(ggplot2)  
library(dplyr)  
library(gganimate)  
# GDP data for Pakistan  
gdp\_pak <- c(0.468372549, 0.813406405, 7.064263857, 3.540191713, 4.211415631, 5.15618959, 3.947698287, 8.048533619, 3.758435569, 10.21570404, 7.920763572, 6.5374868, 6.778378339, 5.065205605, 7.592114699, 5.501653664, 6.452343025, 7.62527878, 4.959768894, 4.458586815, 5.061567759, 7.705897817, 1.757747698, 3.737415558, 4.962609146, 4.846581287, 1.014396011, 2.550234298, 3.66013274, 4.260088011, 3.651350171, 2.594816684, 5.401310873, 7.83125557, 7.276574436, 6.051637676, 4.44481434, 2.120441043, 3.472550596, 1.501717522, 2.680116854, 3.027583911, 4.36686505, 4.116428172, 4.217942096, 6.573838285, 4.432625907, 6.151702611, 2.497636929, -1.274087443, 6.513885759, 4.705802952)  
  
years\_pak <- 1971:(1971 + length(gdp\_pak) - 1)  
  
# GDP data for Finland  
gdp\_fin <- c(2.356921358, 7.735485502, 6.983827845, 3.23653304, 1.804898277, 0.344382485, 0.239510829, 2.919707412, 7.121926371, 5.38904788, 1.315878854, 3.108088693, 3.116581514, 3.237691996, 3.548896587, 2.755633459, 3.574826138, 5.217150323, 5.087143674, 0.670275844, -5.886328069, -3.294660066, -0.66199803, 3.963052424, 4.21686747, 3.66717983, 6.333795654, 5.457180501, 4.379575723, 5.773362458, 2.610019124, 1.707148962, 2.003784203, 3.99209129, 2.779850556, 4.027409658, 5.299336507, 0.783995061, -8.074447432, 3.185958654, 2.547664838, -1.397545728, -0.901696316, -0.364908157, 0.543659212, 2.811457767, 3.19240963, 1.139718013, 1.224748922, -2.354965157, 3.17092862, 1.601801973)  
  
years\_fin <- 1971:(1971 + length(gdp\_fin) - 1)  
  
# Filter the common years  
common\_years\_gdp <- intersect(years\_pak, years\_fin)  
  
data\_gdp <- data.frame(years = common\_years\_gdp,  
 gdp\_pak = gdp\_pak[match(common\_years\_gdp, years\_pak)],  
 gdp\_fin = gdp\_fin[match(common\_years\_gdp, years\_fin)])  
  
ggplot(data\_gdp, aes(x = years)) +  
 geom\_line(aes(y = gdp\_pak, color = "Pakistan"), size = 1) +  
 geom\_point(aes(y = gdp\_pak, color = "Pakistan"), size = 3) +  
 geom\_line(aes(y = gdp\_fin, color = "Finland"), size = 1) +  
 geom\_point(aes(y = gdp\_fin, color = "Finland"), size = 3) +  
 labs(title = "GDP Comparison: Pakistan vs. Finland", x = "Years", y = "GDP") +  
 scale\_color\_manual(values = c("Pakistan" = "green", "Finland" = "blue")) +  
 theme\_minimal() +  
 theme(legend.position = "top", panel.background = element\_rect(fill = "#FFF6E1")) +  
 transition\_reveal(years)



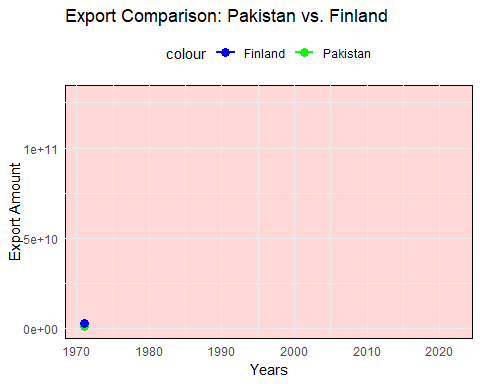
library(ggplot2)  
library(dplyr)  
library(gganimate)  
# FDI data for Pakistan  
fdi\_pak <- c(NA,NA,NA,NA,NA, -8220530.168, -15223204.01, -32273192.51, -58254127.36, -63632992.78, -108084748.5, -63833091.62, -29457026.66, -60194580.19, -139255277.3, -106379985.3, -110150687.4, -173750062.2, -167516908.3, -243314680.5, -262151741.8, -348059754.4, -350710419.2, -420058004.5, -722221107.4, -915190761.1, -740567596.3, -456000000, -511000000, -297000000, -352000000, -795000000, -515000000, -1062000000, -2156000000, -4164000000, -5492000000, -5389000000, -2267000000, -1975000000, -1264000000, -782000000, -1121000000, -1765000000, -1648000000, -2524000000, -2444000000, -1758000000, -2319000000, -2102000000, -1905000000, -258000000)  
  
years\_pak <- 1971:(1971 + length(fdi\_pak) - 1)  
  
# FDI data for Finland  
fdi\_fin <- c(NA,NA, NA,NA, -42292963.9, -27463695.76, 24131108.63, 28728605.03, 97495345.73, 108818294.6, 29255695.06, 77244991.28, 54096748.52, 355984920.6, 235397815.3, 412669145.2, 876358534.7, 2092310899, 2477861223, 1970007773, 112918831.7, -1153411829, 537946749.4, 2858035863, 450056527.3, 2464656102, 3131691250, 6668965419, 2088623911, 14780179940, 4721635281, -756942688, -5756624401, -4017927073, -393671434.5, -2837996225, -5459866277, 10751439982, 4920533661, 2766046760, 2457167886, 3444014950, -2236027725, -17108721388, -18241204965, 15487777452, -3464257880, 13725083435, -8568455133, 7447437564, -4364887160, 7378497425)  
  
years\_fin <- 1971:(1971 + length(fdi\_fin) - 1)  
  
# Filter the common years  
common\_years\_fdi <- intersect(years\_pak, years\_fin)  
  
data\_fdi <- data.frame(  
 years = common\_years\_fdi,  
 fdi\_pak = fdi\_pak[match(common\_years\_fdi, years\_pak)],  
 fdi\_fin = fdi\_fin[match(common\_years\_fdi, years\_fin)]  
)  
  
ggplot(data\_fdi, aes(x = years)) +  
 geom\_line(aes(y = fdi\_pak, color = "Pakistan"), size = 1) +  
 geom\_point(aes(y = fdi\_pak, color = "Pakistan"), size = 3) +  
 geom\_line(aes(y = fdi\_fin, color = "Finland"), size = 1) +  
 geom\_point(aes(y = fdi\_fin, color = "Finland"), size = 3) +  
 labs(title = "Foreign Direct Investment (FDI) Comparison: Pakistan vs. Finland", x = "Years", y = "FDI") +  
 scale\_color\_manual(values = c("Pakistan" = "green", "Finland" = "blue")) +  
 theme\_minimal() +  
 theme(legend.position = "top", panel.background = element\_rect(fill = "#E6F7FF")) +  
 transition\_reveal(years)



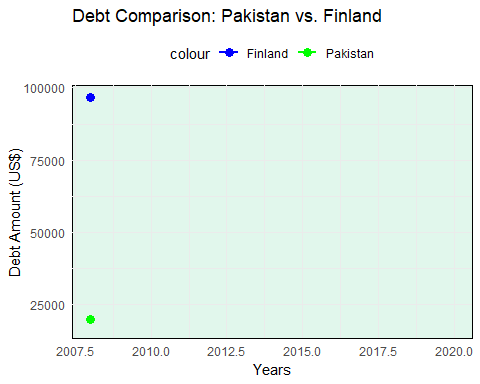
library(ggplot2)  
library(dplyr)  
library(gganimate)  
# Fiscal deficit data for Pakistan  
fiscal\_deficit\_pak <- c(1106677866, 1115550198, 730540054.9, 862525252.5, 1207070707, 1448787879, 1688282828, 1930909091, 2054444444, 2377272727, 2856161616, 3177440758, 3276062992, 3765286435, 3768205805, 4070799752, 4513952811, 5967188835, 6742683749, 6056280092, 6507846744, 6277807436, 6745658216, 6286198447, 7120811699, 8006898946, 7425553372, 7005367591, 6524154507, 9864933559, 8408639643, 9428613186, 10935154516, 12807486538, 13302492015, 18726239045, 19155245719, 21397392340, 21597843520, 21478245091, 23581137427, 25259040063, 26537730183, 27213344332, 29363323633, 33272868243, 36477283976, 39151397442, 34496976223, 35416575957, 38091362850, 39333194497)  
  
years\_pak <- 1971:(1971 + length(fiscal\_deficit\_pak) - 1)  
  
# Fiscal deficit data for Finland  
fiscal\_deficit\_fin <- c(1875737425, 2226118440, 2883270577, 3736588940, 4985248101, 5699006001, 6156116276, 6548544404, 7824744314, 9499521836, 9621107743, 9745898606, 9577284372, 10020775623, 11010168841, 14655172414, 18606790207, 21384506041, 23107939587, 29517959882, 30555800618, 27312184762, 20787967107, 23134889015, 29380446623, 29279057727, 27047302714, 27577881620, 27404309804, 24872885945, 25810251725, 28961977638, 36212968795, 41834922712, 43869111184, 46285139432, 53241701345, 61614358852, 61010572698, 59079237533, 64384890224, 62240302420, 66582541660, 67361632269, 57189841947, 56993334377, 58255398908, 63140913821, 62264052761, 65935554781, 72953787806, 68066957872)  
  
years\_fin <- 1971:(1971 + length(fiscal\_deficit\_fin) - 1)  
  
# Filter the common years  
common\_years\_fiscal\_deficit <- intersect(years\_pak, years\_fin)  
  
data\_fiscal\_deficit <- data.frame(  
 years = common\_years\_fiscal\_deficit,  
 fiscal\_deficit\_pak = fiscal\_deficit\_pak[match(common\_years\_fiscal\_deficit, years\_pak)],  
 fiscal\_deficit\_fin = fiscal\_deficit\_fin[match(common\_years\_fiscal\_deficit, years\_fin)]  
)  
  
ggplot(data\_fiscal\_deficit, aes(x = years)) +  
 geom\_line(aes(y = fiscal\_deficit\_pak, color = "Pakistan"), size = 1) +  
 geom\_point(aes(y = fiscal\_deficit\_pak, color = "Pakistan"), size = 3) +  
 geom\_line(aes(y = fiscal\_deficit\_fin, color = "Finland"), size = 1) +  
 geom\_point(aes(y = fiscal\_deficit\_fin, color = "Finland"), size = 3) +  
 labs(title = "Fiscal Deficit Comparison: Pakistan vs. Finland", x = "Years", y = "Fiscal Deficit") +  
 scale\_color\_manual(values = c("Pakistan" = "green", "Finland" = "blue")) +  
 theme\_minimal() +  
 theme(legend.position = "top", panel.background = element\_rect(fill = "#E1F7EC")) +  
 transition\_reveal(years)



library(ggplot2)  
library(dplyr)  
library(gganimate)  
# Export data for Pakistan  
exports\_pak <- c(823603527.9, 675563974.5, 942116712.4, 1208080808, 1312525253, 1402121212, 1413232323, 1679696970, 2174646465, 2978282828, 3606767677, 3131090047, 3495669291, 3549643811, 3290831135, 3922380657, 4605651034, 5331871262, 5652851126, 5917028935, 7725461182, 8442738387, 8394305117, 8449778027, 10132269179, 10703072794, 10040500611, 10252214044, 9668690721, 9580014496, 10322861560, 11029067879, 13669643162, 15103005037, 17790729410, 20313148425, 21406516454, 24013350068, 23212999517, 24858631876, 31088962295, 29697606560, 31497982535, 30382089108, 29920081363, 27400966312, 27888164550, 30562205969, 30136170157, 27935252708, 31546334470, 39515651442)  
  
years\_pak <- 1971:(1971 + length(exports\_pak) - 1)  
  
# Export data for Finland  
exports\_fin <- c(2827196647, 3487225409, 4596304652, 6381402237, 6523355423, 7499615325, 8995130589, 10101083032, 13152190505, 16534905961, 16409479195, 15244850130, 14631725021, 15594578552, 15638910207, 18858784893, 22897335317, 26071073205, 27400581959, 31323277873, 27176885752, 28745686222, 27996252732, 35158793398, 47992919390, 47988609889, 47944107204, 50182465510, 50865246751, 52967332461, 51507654130, 54947289188, 64062137649, 76257431519, 82514287315, 93509466784, 1.1236E+11, 1.28287E+11, 91464252097, 95814846367, 1.07211E+11, 1.00238E+11, 1.03166E+11, 1.00274E+11, 83041492299, 83813596801, 95994657971, 1.06062E+11, 1.07086E+11, 97301402129, 1.17039E+11, 1.2815E+11)  
  
years\_fin <- 1971:(1971 + length(exports\_fin) - 1)  
  
# Filter the common years  
common\_years\_exports <- intersect(years\_pak, years\_fin)  
  
data\_exports <- data.frame(years = common\_years\_exports,  
 exports\_pak = exports\_pak[match(common\_years\_exports, years\_pak)],  
 exports\_fin = exports\_fin[match(common\_years\_exports, years\_fin)])  
  
ggplot(data\_exports, aes(x = years)) +  
 geom\_line(aes(y = exports\_pak, color = "Pakistan"), size = 1) +  
 geom\_point(aes(y = exports\_pak, color = "Pakistan"), size = 3) +  
 geom\_line(aes(y = exports\_fin, color = "Finland"), size = 1) +  
 geom\_point(aes(y = exports\_fin, color = "Finland"), size = 3) +  
 labs(title = "Export Comparison: Pakistan vs. Finland", x = "Years", y = "Export Amount") +  
 scale\_color\_manual(values = c("Pakistan" = "green", "Finland" = "blue")) +  
 theme\_minimal() +  
 theme(legend.position = "top", panel.background = element\_rect(fill = "#FFD8D8")) +  
 transition\_reveal(years)



library(ggplot2)  
library(dplyr)  
library(gganimate)  
# Debt data for Finland  
debt\_finland <- c(  
 2367, 2913, 3837, 5490, 5502, 6342, 7665, 8570, 11172, 14150,  
 14005, 13088, 12518, 13472, 13617, 16356, 20037, 21748, 23298,  
 26571, 23080, 23981, 23495, 29703, 40490, 41124, 41471, 43752,  
 42243, 46102, 43237, 45145, 53171, 61520, 65433, 77289, 90089,  
 96839, 62893, 69488, 79145, 73116, 74445, 74333, 59818, 57907,  
 68074, 75870, 73469, 66221, 81996  
)  
  
years\_finland <- 1971:(1971 + length(debt\_finland) - 1)  
  
# Debt data for Pakistan  
debt\_pakistan <- c(  
 19938.15, 17284.48, 20986.31, 25178.08, 24418.19, 25022.93,  
 24515.38, 21890.75, 20355.19, 21477.01, 23344.41, 23268.40,  
 21951.06  
)  
  
years\_pakistan <- 2008:(2008 + length(debt\_pakistan) - 1)  
  
# Filter the common years  
common\_years\_debt <- intersect(years\_pakistan, years\_finland)  
  
data\_debt <- data.frame(  
 years = common\_years\_debt,  
 debt\_pakistan = debt\_pakistan[match(common\_years\_debt, years\_pakistan)],  
 debt\_finland = debt\_finland[match(common\_years\_debt, years\_finland)]  
)  
  
ggplot(data\_debt, aes(x = years)) +  
 geom\_line(aes(y = debt\_pakistan, color = "Pakistan"), size = 1) +  
 geom\_point(aes(y = debt\_pakistan, color = "Pakistan"), size = 3) +  
 geom\_line(aes(y = debt\_finland, color = "Finland"), size = 1) +  
 geom\_point(aes(y = debt\_finland, color = "Finland"), size = 3) +  
 labs(title = "Debt Comparison: Pakistan vs. Finland", x = "Years", y = "Debt Amount (US$)") +  
 scale\_color\_manual(values = c("Pakistan" = "green", "Finland" = "blue")) +  
 theme\_minimal() +  
 theme(legend.position = "top", panel.background = element\_rect(fill = "#E1F7EC")) +  
 transition\_reveal(years)



library(ggplot2)  
library(dplyr)  
library(gganimate)  
# Balance of payment data for Pakistan  
bop\_pak <- c(2202.09, 2499.24, 3236.25, 4309.38, 5470.41, 5682.52, 5770.83, 5618.27, 6263.36, 5905.89, 5999.17, 6283.34, 7130.85, 7400.90, 8132.50, 8683.28, 9716.53, 9379.89, 9355.28, 11247.76, 12163.73, 10750.18, 9834.00, 9520.00, 9896.00, 9741.00, 10428.00, 11978.00, 16643.00, 21683.20, 26597.00, 28639.00, 38132.00, 28536.00, 32843.00, 38995.00, 40385.00, 41214.00, 42675.00, 39815.00, 42200.00, 52757.00, 56753.00, 47681.00, 44113.00, 65927.00, 65696.00)  
  
years\_pak <- 1976:(1976 + length(bop\_pak) - 1)  
  
# Balance of payment data for Finland  
bop\_fin <- c(5508.47, 6294.64, 7609.27, 8503.56, 11099.78, 14069.60, 13661.61, 12841.86, 12172.12, 13086.77, 13351.14, 16030.89, 19107.72, 21851.47, 22921.23, 26139.23, 22760.61, 23815.42, 23366.65, 29544.03, 39785.14, 39959.40, 40426.24, 42040.12, 41228.68, 45051.99, 42362.13, 48006.72, 55564.83, 65704.64, 70041.74, 81902.89, 98615.71, 105433.84, 71766.07, 75038.96, 83030.37, 76760.16, 77796.80, 74459.46, 58806.70, 58351.64, 67198.32, 74302.41, 72690.21, 67416.39, 82912.15, 93058.31)  
  
years\_fin <- 1975:(1975 + length(bop\_fin) - 1)  
  
# Filter the common years  
common\_years\_bop <- intersect(years\_pak, years\_fin)  
  
data\_bop <- data.frame(  
 years = common\_years\_bop,  
 bop\_pak = bop\_pak[match(common\_years\_bop, years\_pak)],  
 bop\_fin = bop\_fin[match(common\_years\_bop, years\_fin)]  
)  
  
ggplot(data\_bop, aes(x = years)) +  
 geom\_line(aes(y = bop\_pak, color = "Pakistan"), size = 1) +  
 geom\_point(aes(y = bop\_pak, color = "Pakistan"), size = 3) +  
 geom\_line(aes(y = bop\_fin, color = "Finland"), size = 1) +  
 geom\_point(aes(y = bop\_fin, color = "Finland"), size = 3) +  
 labs(title = "Balance of Payments Comparison: Pakistan vs. Finland", x = "Years", y = "Balance of Payments") +  
 scale\_color\_manual(values = c("Pakistan" = "green", "Finland" = "blue")) +  
 theme\_minimal() +  
 theme(legend.position = "top", panel.background = element\_rect(fill = "#E1F7EC")) +  
 transition\_reveal(years)

