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Compulsary Task 1
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1. Which three countries have the lowest gender wage gap?
   Costa Rica, Belgium, Denmark

2. Which three countries have the highest gender wage gap?
   Korea, Japan, Chile

3. Do some research on the country with the lowest gender wage gap and
comment on why you think it succeeded in achieving a low gender wage gap
in 2015 (max. 150 words).

Costa Rica stands out with its minimal gender pay gap in 2015, owing to
strategic initiatives. As an EPIC coalition member, the nation garners
specialized backing and support to tackle pay disparity. The pivotal
National Women's Institute contributes vital technical know-how,
experience sharing, and optimal approaches. Particularly noteworthy is
Costa Rica's stride in elevating women's ministerial roles, instrumental
in a remarkable 73% reduction of the gender pay gap. This fusion of
global collaboration, institutional reinforcement, and policy strides
positions Costa Rica as a paramount model for effective gender pay gap
reduction.

2 a. Explain what is happening in the graph during March 2020 with
regards to isopropanol sales (max. 100 words).

The sales of Isopropanol has a drastic increase in sales in March 2020.
It usually stays well below 50 US CTS/lb and in March 2020 prior to the
increase can be seen at 35 US CTS/lb. It has increased and suddenly
spiked to 135 US CTS/lb which is nearly 271% increase in sales.

2 b. Describe a possible reason for the observation you made about
isopropanol sales in March 2020 (max. 100 words). Hint: Isopropanol is
the main
ingredient in hand sanitiser.

In March 2020 the Covid Pandemic spread across the world. There was no
known treatment for this disease at the time. Washing hands and keeping
high levels of hygience and wearing masks was what suggested to prevent
the disease to some extent. Sanitiser sales increased drastically around
this time with even people not able to buy enough as stocks were running
out. This is the reason that the main ingredient used in preparing hand
sanitisers saw its sales spike by 271%.

3. Discuss the relationship between CO2 emissions per person and GDP per
capita for each continent listed in the figure legend (max. 350 words).
The chart very clearly shows a link between GDP per capita and CO2
emissions. The chart does not show any country with very high GDP per
capita having lower CO2 emission. Most developed countries showin in blue
indicating developed economies like Europe and some countries  in yellow
showing Americas are seen on the higher side of CO2 emissions. Countries
with high levels of population indicated by the size of dot especially
highlighted in green showing Asian economies have in fact emissions below
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the levels of Europe and some of Americas countries. Most countries in Africa are shown having lesser emissions with only a few joining the high emissions. This scatter graph shows as economies flourish with often an uptick in industrial activities, resulting in elevated energy consumption, manufacturing and transportation demands. These activities reliant on fossil fuels contribute to elevated levels of CO_2 emissions. It can be used to address the CO_2 emissions which can be part of developed or emerging economies and find strategies to keep the emissions under control for these countries.

Compulsary Task 2
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1. Does Boston have a lot of crime generally? Justify your answer.

Looking at the graph which has crime rate on the X-axis and is on the diagonal one can see there is a linear perfect graph which has shot up to more than 85 indicating a circumstance where crime rate is very high. The remaining scatter is much on the lower side almost on a decreasing line which is way below 0. This indicates certain circumstance crime rate is very high which further warrants comparing crime rate with all the variables.

Comparing crime rate with median house value we can see it has a perfect linear graph when crime rate is 0 and also has non linear negative correlation which suggests crime rate increases as median house value decreases. But the linear graph suggests irrepsective of the median house value crime rate is around 0 in some houses. Outliers exists in this graph and is not considered.
Similarly comparing crime rate with Percentage of Houses built before 1940 we can see a line graph where crime rate is less around 0 which indiciates irrespective of when the house was built the crime rate is less. A small cluster of positive correlation is seen where the percentage of houses built before 1940 is more indicating there is some crime rate to be seen around 0 to 25 in areas where there are older houses. This is the general trend and outliers are not considered in this.
Finally comparing crime rate with rooms per dwelling we can see crime rate is between 0 to 20. There is a linear graph where crime rate is 0 going all the way from smaller rooms to more. This indicates that crime rate is less irrespective of number of rooms for this portion of graph. A scatter of graphs can be seen where the rooms are between 5 to 7 crime rate moves to 0 to 20.
Overall we can conclude the crime rate in Boston is high in areas where houses were built before 1940 where it has shot up. Overall since only 50% of houses are old the crime rate seems medium in Boston with only older houses having seeing more crime and other areas seeing low and moderate crime rate.

2. Generally speaking, how many rooms do Boston dwellings have? Explain your answer..
The histogram or bar chart in the diagonal with houses per dwelling on the X-axis shows the maximum dwellings in Boston. The highest bar is 7 on

the X-axis. This represents the most dwellings in Boston generally have 7 rooms followed by 6 rooms and then 8 rooms.

3. Does the number of rooms per dwelling have an impact on housing prices? Explain.
To find this out we compare the rooms per dwelling on X-axis and median house value on Y-axis graph. Rooms per dwelling does have a positive impact on housing prices. The relationship between them looks strong and it is a positive correlation which means as rooms per dwelling increases the median house value also increases. There are some outliers to this and this is without considering them. Overall as rooms per dwelling increases the house prices have increased. So yes rooms per dwelling has a poitive impact on housing prices.

4. Would you say that most of the houses in Boston are new? Explain your answer.
No, I think the highest percentage of houses built before 1940 in histogram is in the range 75% to 100% which indicates most houses were built before 1940 and are not recent. We can check the Percentage of units built before 1940 and look at the histogram for this on the diagonal. The highest bar is when percentage is 85% to 100%. We also see the bars are smaller when percentage of the units built before 1940 are less which indicates newer houses.

5. Are modern neighbourhoods pricier than older neighbourhoods? Explain your answer.
The graph with houses built before 1940 (x-axis) and median house value (y-axis) has a negative correlation we can see the % of houses having more median value is around 25% whereas when we look at 100% the median house value has gone down. So the modern neighbourhoods are pricier than older neighbourhoods. There are strong clusters so the strength between x-axis and y-axis is strong. I have not considered the outliers and this is the general trend. Its a negative correlation with non-linear form and strongly associated relationship.So modern neighbourhoods are pricier than older neighbourhoods.