COVID-19
‘MODIFIED’ Control Chart Analysis
'Modified' Control Chart Analysis:

- Two points, out of three successive points, are on the same side of the centerline in Zone A or beyond.
  - Two points (4/15/20 - 4/16/20) are below the control line, which suggests a good ‘out-of-control’ pattern for COVID-19 cases in USA.
- Four points, out of five successive points, are on the same side of the centerline in Zone B or beyond.
  - Four points (4/13/20 - 4/16/20) are below the control line, which suggests a good ‘out-of-control’ pattern for COVID-19 cases in USA.
Spain

‘Modified’ Control Chart Analysis:

- Two points, out of three successive points, are on the same side of the centerline in Zone A or beyond.
  - Two points (4/16/20 - 4/17/20) are below the control line, which suggests a good ‘out-of-control’ pattern for COVID-19 cases in Spain.

- Four points, out of five successive points, are on the same side of the centerline in Zone B or beyond.
  - Four points (4/13/20 - 4/14/20 and 4/16/20 - 4/17/20) are all below the control line, which suggests an ‘out-of-control’ pattern for COVID-19 cases in Spain. A good ‘out-of-control’ sign.

- Nine successive points are on one side of the centerline.
  - Nine consecutive points (3/26/20 - 4/14/20) are all on one side (above) of the centerline. This was a bad ‘out-of-control’ pattern.
Italy

‘Modified’ Control Chart Analysis:

• Two points, out of three successive points, are on the same side of the centerline in Zone A or beyond.
  o The last three points (4/15/20 - 4/17/20) are below the control line, which suggests a good ‘out-of-control’ pattern for COVID-19 cases in Italy.

• Four points, out of five successive points, are on the same side of the centerline in Zone B or beyond.
  o The last five points (4/13/20 - 4/17/20) are all below the control line, which suggests an ‘out-of-control’ pattern for COVID-19 cases in Italy. A good ‘out-of-control’ sign.

• Nine successive points are on one side of the centerline.
  o The nine consecutive points (3/21/20 - 3/29/20) are all on one side (above) of the centerline. This was not a good ‘out-of-control’ pattern.
France

'Modified' Control Chart Analysis:

• Two points, out of three successive points, are on the same side of the centerline in Zone A or beyond.
  o Two points (4/15/20 and 4/17/20) are below the control line, which suggests a good ‘out-of-control’ pattern for COVID-19 cases in France.

• Four points, out of five successive points, are on the same side of the centerline in Zone B or beyond.
  o Four points (4/11/20 - 4/13/20 and 4/15/20) are all below the control line, which suggests an ‘out-of-control’ pattern for COVID-19 cases in France. A good ‘out-of-control’ sign.
'Modified' Control Chart Analysis:

• Two points, out of three successive points, are on the same side of the centerline in Zone A or beyond.
  o The last three points (4/15/20 - 4/17/20) are below the control line, which suggests a good ‘out-of-control’ pattern for COVID-19 cases in Germany.

• Four points, out of five successive points, are on the same side of the centerline in Zone B or beyond.
  o The last five points (4/13/20 – 4/17/20) are all below the control line, which suggests an ‘out-of-control’ pattern for COVID-19 cases in Germany. A good ‘out-of-control’ sign.

• There are six consecutive points, increasing or decreasing.
  o There are six consecutive points (4/8/20 - 4/15/20) decreasing which indicates a good ‘out-of-control’ sign.
'Modified' Control Chart Analysis:

- Two points, out of three successive points, are on the same side of the centerline in Zone A or beyond.
  - The last three points (4/15/20 - 4/17/20) are below the control line, which suggests a good 'out-of-control' pattern for COVID-19 cases in Iran. The linear trend line has a remarkable downward slope since 3/30/20.

- Four points, out of five successive points, are on the same side of the centerline in Zone B or beyond.
  - The last five points (4/13/20 - 4/17/20) are all below the control line, which suggests an 'out-of-control' pattern for COVID-19 cases in Iran. A good 'out-of-control' sign. The linear trend line has a downward slope.

- There are six consecutive points, increasing or decreasing.
  - Six consecutive points (4/3/20 - 4/9/20) are decreasing, which indicates a good 'out-of-control' sign.
Brazil

'Modified' Control Chart Analysis:
- Two points, out of three successive points, are on the same side of the centerline in Zone A or beyond.
  - The last three points (4/15/20 - 4/17/20) are all above the control line, which suggests a bad ‘out-of-control’ pattern for COVID-19 cases in Brazil.
- Four points, out of five successive points, are on the same side of the centerline in Zone B or beyond.
  - Four points (4/10/20 - 4/13/20) are all below the control line, which suggests an ‘out-of-control’ pattern for COVID-19 cases in Brazil. A good ‘out-of-control’ sign. However, a linear trend line with an upward slope can be observed from 4/14/20.

![Modified Control Chart of COVID-19 Daily Cases in Brazil (4/8/20 - 4/17/20)](image)
Canada

'Modified' Control Chart Analysis:

- Two points, out of three successive points, are on the same side of the centerline in Zone A or beyond.
  - Two points (4/16/20 - 4/17/20) are above the control line, which suggests a bad ‘out-of-control’ pattern for COVID-19 cases in Canada.
- Four points, out of five successive points, are on the same side of the centerline in Zone B or beyond.
  - Five points (4/11/20 – 4/15/20) are all below the control line, which suggests a good ‘out-of-control’ pattern for COVID-19 cases in Canada. A good ‘out-of-control’ sign. However, a linear trend line with an upward slope can be observed from 4/15/20.
Switzerland

'Modified' Control Chart Analysis:

- Two points, out of three successive points, are on the same side of the centerline in Zone A or beyond.
  - The last three points (4/15/20 - 4/17/20) are below the control line, which suggests a good ‘out-of-control’ pattern for COVID-19 cases in Switzerland. The linear trend line has a downward slope.
- Four points, out of five successive points, are on the same side of the centerline in Zone B or beyond.
  - The last five points (4/13/20 – 4/17/20) are all below the control line, which suggests an ‘out-of-control’ pattern for COVID-19 cases in Switzerland. A good ‘out-of-control’ sign.
- Nine successive points are on one side of the centerline.
  - The nine consecutive points (4/9/20 – 4/17/20) are all on one side (below) of the centerline. This is a good ‘out-of-control’ pattern and indicates that the COVID-19 cases in Switzerland are stabilizing in a positive direction.
Austria

'Modified' Control Chart Analysis:

- Two points, out of three successive points, are on the same side of the centerline in Zone A or beyond.
  - The last three points (4/15/20 - 4/17/20) are below the control line, which suggests a good ‘out-of-control’ pattern for COVID-19 cases in Austria.

- Four points, out of five successive points, are on the same side of the centerline in Zone B or beyond.
  - The last five points (4/13/20 - 4/17/20) are all below the control line, which suggests an ‘out-of-control’ pattern for COVID-19 cases in Austria. A good ‘out-of-control’ sign.

- Nine successive points are on one side of the centerline.
  - Nine consecutive points (4/9/20 - 4/17/20) are all on one side (below) of the centerline. This good ‘out-of-control’ pattern suggests that the daily COVID-19 cases in Austria are stabilizing in a positive direction.
‘Modified’ Control Chart Analysis:

- Two points, out of three successive points, are on the same side of the centerline in Zone A or beyond.
  - The last two points (4/16/20 – 4/17/20) are below the control line, which suggests a good ‘out-of-control’ pattern for COVID-19 cases in Israel.

- Four points, out of five successive points, are on the same side of the centerline in Zone B or beyond.
  - Four points (4/12/20 – 4/6/20) are above the control line. This indicates that there was a bad ‘out-of-control’ pattern for COVID-19 cases in Israel.
Australia

'Modified' Control Chart Analysis:

- Two points, out of three successive points, are on the same side of the centerline in Zone A or beyond.
  - The last three points (4/15/20 - 4/15/20) are below the control line, which suggests a good ‘out-of-control’ pattern for COVID-19 cases in Australia.

- Four points, out of five successive points, are on the same side of the centerline in Zone B or beyond.
  - The last five points (4/13/20 - 4/17/20) are all below the control line, which suggests an ‘out-of-control’ pattern for COVID-19 cases in Australia. A good ‘out-of-control’ sign. Also, a remarkable linear trend line with a downward slope can be observed from 3/22/20.

- Nine successive points are on one side of the centerline.
  - Nine consecutive points (4/9/20 - 4/17/20) are all on one side (below) of the centerline. This good ‘out-of-control’ pattern suggests that the daily COVID-19 cases in Australia are stabilizing in a positive direction.