**Summery:**

I’ve calculated the 20MA and 50MA by taking average of preceding 19 and 49 rows, I’ve used window function to make this calculation.

To generate **Signals** based on 20MA and 50MA values, I’ve used following algorithm,

1. Check if current shorter-term value is above longer-term value, if so then check on previous day it was opposite that shorter-term value is below longer-term value, Now In this case shorter – term value(20MA) is crossing over longer-term value (50MA) and hence your signal will be **BUY**
2. Check if current shorter-term value is below longer-term value, if so then check on previous day it was opposite that shorter-term value is above longer-term value, Now In this case shorter – term value(20MA) is crossing over longer-term value (50MA) and hence your signal will be **SELL,** as it indicates the trend is shifting down. It is sometimes referred to as the Death Cross.
3. When the signal is neither buy nor sell, it is classified as **HOLD**. If you already own the stock, keep it and if you don't then don't buy it now.

**Conclusion:**

While solving the problems, I gain some insights and understanding on stock, I learned about Mean Average algorithm, it’s different type and how it works. I also get my understanding on **BUY/SELL/HOLD** signals.