In [ ]:

```
import warnings
warnings.filterwarnings("ignore")
```

In [ ]:

```
import numpy as np
import pandas as pd
```

In [ ]:

```
df = pd.read_csv('/content/Airline_Passangers.csv')
```

In [ ]:

```
df.isnull().sum()
```

Out[ ]:

```
Month          0
Passengers     0
dtype: int64
```

In [ ]:

```
df.shape
```

Out[ ]:

```
(144, 2)
```

Building ARIMA(p,d,q) model:

- **order = (1,1,1)**

In [ ]:

```
from statsmodels.tsa.arima_model import ARIMA
```

In [ ]:

```
order = (1,1,1)
```

In [ ]:

```
model = ARIMA(df.Passengers[:60],order=order)
```

In [ ]:

```
ARIMA_model = model.fit()
```

In [ ]:

```
ARIMA_model.summary2()
```

Out[ ]:

Model:	**ARIMA**	**BIC:**	**434.2349**
Dependent Variable:	**D.Passengers**	**Log-Likelihood:**	**-209.29**
Date:	**2022-08-29 19:22**	**Scale:**	**1.0000**
No. Observations:	**50**	**Method:**	**css-mle**
Df Model:	**3**	**Sample:**	**1**
Df Residuals:	**47**		**1**

Df Residuals:	47		1
Converged:	1.0000	S.D. of innovations:	15.647
No. Iterations:	8.0000	HQIC:	429.499
AIC:	426.5868		

	Coef.	Std.Err.	t	P>|t|	[0.025	0.975]
const	2.4771	2.4012	1.0316	0.3023	-2.2291	7.1833
ar.L1.D.Passengers	-0.8418	0.0889	-9.4698	0.0000	-1.0160	-0.6676
ma.L1.D.Passengers	1.0000	nan	nan	nan	nan	nan

	Real	Imaginary	Modulus	Frequency
AR.1	-1.1879	0.0000	1.1879	0.5000
MA.1	-1.0000	0.0000	1.0000	0.5000

In [ ]: