

```
1235 0 OUTPUT ACTIVATE TimeSeriesinROutput.  
1235 0 M> OUTPUT ACTIVATE TimeSeriesinROutput.  
1236 0 TITLE 'Time Series in R'.  
1236 0 M> TITLE 'Time Series in R'.
```

Time Series in R

```
1237 0 GET DATA /TYPE=TXT /FILE='D:\DATA ANALYSIS\N Time Series Tests and Fo
recasting\Time Series in R\dataset.csv' /ENCODING='UTF
      8' /DELCASE=LINE /DELIMITERS=', ' /QUALIFIER='"' /ARRANGEMENT=DELIM
ITED /FIRSTCASE=2
1237 0 M> GET DATA /TYPE=TXT /FILE='D:\DATA ANALYSIS\N Time Series Tests and
Forecasting\Time Series in R\dataset.csv' /ENCODING='
      UTF8' /DELCASE=LINE /DELIMITERS=', ' /QUALIFIER='"' /ARRANGEMENT
=DELIMITED /FIRSTCASE=2
1238 0 /VARIABLES=school A8 sex A8 age F8.0 address A8 famsize A8 Pstatus A
8 Medu F8.0 Fedu F8.0 Mjob A16 Fjob A16 reason A16 gua
      rdian A16 traveltime F8.0 studytime F8.0 failures F8.0 schoolsup A
8 famsup A8 paid A8 activities A8 nursery A8 higher A8
      internet A8 romantic A8 famrel F8.0 freetime F8.0 goout F8.0 Dalc
F8.0 Walc F8.0 health F8.0 absences F8.0 G1 F8.0 G2 F
      8.0 G3 F8.0.
1238 0 M> /VARIABLES=school A8 sex A8 age F8.0 address A8 famsize A8 Pstatu
s A8 Medu F8.0 Fedu F8.0 Mjob A16 Fjob A16 reason A16
      guardian A16 traveltime F8.0 studytime F8.0 failures F8.0 schoo
lsup A8 famsup A8 paid A8 activities A8 nursery A8 hig
      her A8 internet A8 romantic A8 famrel F8.0 freetime F8.0 goout
F8.0 Dalc F8.0 Walc F8.0 health F8.0 absences F8.0 G1
      F8.0 G2 F8.0 G3 F8.0.
1239 0 DATASET NAME TimeSeriesinRData.
1239 0 M> DATASET NAME TimeSeriesinRData.
1240 0 COMPUTE time_index=$CASENUM.
1240 0 M> COMPUTE time_index=$CASENUM.
1241 0 EXECUTE.
1241 0 M> EXECUTE.
1242 0 * BEGIN METHOD-SPECIFIC SPSS WORKFLOW.
1242 0 M> * BEGIN METHOD-SPECIFIC SPSS WORKFLOW.
1243 0 COMPUTE ma12=(G3+LAG(G3)+LAG(G3,2)+LAG(G3,3)+LAG(G3,4)+LAG(G3,5)+LAG(
G3,6)+LAG(G3,7)+LAG(G3,8)+LAG(G3,9)+LAG(G3,10)+LAG(G3,
      11))/12.
1243 0 M> COMPUTE ma12=(G3+LAG(G3)+LAG(G3,2)+LAG(G3,3)+LAG(G3,4)+LAG(G3,5)+L
AG(G3,6)+LAG(G3,7)+LAG(G3,8)+LAG(G3,9)+LAG(G3,10)+LAG(
      G3,11))/12.
1244 0 COMPUTE seasonal_remainder=G3-ma12.
1244 0 M> COMPUTE seasonal_remainder=G3-ma12.
1245 0 COMPUTE season_index=MOD(time_index-1,12)+1.
```

Time Series in R

```
1245 0 M> COMPUTE season_index=MOD(time_index-1,12)+1.
1246 0 MEANS TABLES=seasonal_remainder BY season_index /CELLS=COUNT MEDIAN M
EAN STDDEV.
1246 0 M> MEANS TABLES=seasonal_remainder BY season_index /CELLS=COUNT MEDIA
N MEAN STDDEV.
```

Means

Notes

Output Created		18-JUL-2026 15:54:26
Comments		
Input	Data	D:\DATA ANALYSIS\N Time Series Tests and Forecasting\Time Series in R\dataset.csv
	Active Dataset	TimeSeriesinRData
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	649
Missing Value Handling	Definition of Missing	For each dependent variable in a table, user- defined missing values for the dependent and all grouping variables are treated as missing.
	Cases Used	Cases used for each table have no missing values in any independent variable, and not all dependent variables have missing values.
Syntax		MEANS TABLES=seasonal_remai nder BY season_index /CELLS=COUNT MEDIAN MEAN STDDEV.
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.05

[TimeSeriesinRData]

Time Series in R

Case Processing Summary

	Included		Cases Excluded		Total	
	N	Percent	N	Percent	N	Percent
seasonal_remainder * season_index	638	98.3%	11	1.7%	649	100.0%

Report

seasonal_remainder

season_index	N	Median	Mean	Std. Deviation
1.00	54	.5417	.5370	2.25368
2.00	53	-.0833	.0550	2.85325
3.00	53	-.1667	-.0833	2.56283
4.00	53	.0000	-.3632	3.99258
5.00	53	-.6667	-.4371	2.85203
6.00	53	.3333	.3145	3.12800
7.00	53	.1667	.6195	2.88270
8.00	53	.0833	-.0362	2.69519
9.00	53	.3333	.1635	2.86749
10.00	53	.4167	.2343	2.87075
11.00	53	-.1667	-.5314	2.77534
12.00	54	-.9583	-.7963	2.73453
Total	638	-.0833	-.0273	2.90333

```
1247 0 DESCRIPTIVES VARIABLES=ma12 seasonal_remainder /STATISTICS=MEAN STDDEV MIN MAX.
```

```
1247 0 M> DESCRIPTIVES VARIABLES=ma12 seasonal_remainder /STATISTICS=MEAN STDDEV MIN MAX.
```

Descriptives

Time Series in R

Notes

Output Created		18-JUL-2026 15:54:26
Comments		
Input	Data	D:\DATA ANALYSIS\N Time Series Tests and Forecasting\Time Series in R\dataset.csv
	Active Dataset	TimeSeriesinRData
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	649
Missing Value Handling	Definition of Missing	User defined missing values are treated as missing.
	Cases Used	All non-missing data are used.
Syntax		DESCRIPTIVES VARIABLES=ma12 seasonal_remainder /STATISTICS=MEAN STDDEV MIN MAX.
Resources	Processor Time	00:00:00.06
	Elapsed Time	00:00:00.04

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ma12	638	7.25	15.92	11.9129	1.59191
seasonal_remainder	638	-12.25	8.67	-.0273	2.90333
Valid N (listwise)	638				

```

1248 0 * END METHOD-SPECIFIC SPSS WORKFLOW.
1248 0 M> * END METHOD-SPECIFIC SPSS WORKFLOW.
1249 0 SAVE OUTFILE='D:\DATA ANALYSIS\N Time Series Tests and Forecasting\Time Series in R\SPSS_Output\sav\time-series-in-r_spss_ready_data.sav' /COMPRESSED.
1249 0 M> SAVE OUTFILE='D:\DATA ANALYSIS\N Time Series Tests and Forecasting\Time Series in R\SPSS_Output\sav\time-series-in-r_sps

```

Time Series in R

```
s_ready_data.sav' /COMPRESSED.
1250 0 ECHO 'Time Series in R'.
1250 0 M> ECHO 'Time Series in R'.
Time Series in R
1251 0 ECHO 'Method type: software_workflow'.
1251 0 M> ECHO 'Method type: software_workflow'.
Method type: software_workflow
1252 0 ECHO 'Design: R-style robust STL decomposition of G3 with period 12 a
nd seasonally adjusted trend regression.'.
1252 0 M> ECHO 'Design: R-style robust STL decomposition of G3 with period 1
2 and seasonally adjusted trend regression.'.
Design: R-style robust STL decomposition of G3 with period 12 and seasonally a
djusted trend regression.
1253 0 ECHO 'Formula: STL(y,m=12,robust=TRUE); adjusted_t=y_t-seasonal_t'.
1253 0 M> ECHO 'Formula: STL(y,m=12,robust=TRUE); adjusted_t=y_t-seasonal_t'
.
Formula: STL(y,m=12,robust=TRUE); adjusted_t=y_t-seasonal_t
1254 0 ECHO 'Series order: source-row order'.
1254 0 M> ECHO 'Series order: source-row order'.
Series order: source-row order
1255 0 ECHO 'period = 12'.
1255 0 M> ECHO 'period = 12'.
period = 12
1256 0 ECHO 'robust = True'.
1256 0 M> ECHO 'robust = True'.
robust = True
1257 0 ECHO 'adjusted_trend_slope = -0.0030822895295156993'.
1257 0 M> ECHO 'adjusted_trend_slope = -0.0030822895295156993'.
adjusted_trend_slope = -0.0030822895295156993
1258 0 ECHO 'adjusted_trend_p_value = 9.232556420812943e-07'.
1258 0 M> ECHO 'adjusted_trend_p_value = 9.232556420812943e-07'.
adjusted_trend_p_value = 9.232556420812943e-07
1259 0 ECHO 'seasonal_strength = 0.15858146501927783'.
1259 0 M> ECHO 'seasonal_strength = 0.15858146501927783'.
seasonal_strength = 0.15858146501927783
1260 0 ECHO 'trend_strength = 0.2397335907184791'.
1260 0 M> ECHO 'trend_strength = 0.2397335907184791'.
trend_strength = 0.2397335907184791
1261 0 ECHO 'Cross-check status: pass'.
```

Time Series in R

```
1261  0 M> ECHO 'Cross-check status: pass'.
Cross-check status: pass
1262  0 OUTPUT SAVE OUTFILE='D:\DATA ANALYSIS\N Time Series Tests and Forecas
ting\Time Series in R\SPSS_Output\spv\time-series-in-r
_spss_output.spv'.
1262  0 M> OUTPUT SAVE OUTFILE='D:\DATA ANALYSIS\N Time Series Tests and Fore
casting\Time Series in R\SPSS_Output\spv\time-series-i
n-r_spss_output.spv'.
1263  0 OUTPUT EXPORT /CONTENTS EXPORT=ALL LAYERS=PRINTSETTING MODELVIEWS=PRI
NTSETTING /PDF DOCUMENTFILE='D:\DATA ANALYSIS\N Time S
eries Tests and Forecasting\Time Series in R\SPSS_Output\pdf\time-
series-in-r_spss_output.pdf'.
1263  0 M> OUTPUT EXPORT /CONTENTS EXPORT=ALL LAYERS=PRINTSETTING MODELVIEWS=
PRINTSETTING /PDF DOCUMENTFILE='D:\DATA ANALYSIS\N Tim
e Series Tests and Forecasting\Time Series in R\SPSS_Output\pdf
\time-series-in-r_spss_output.pdf'.
```