```
* ============================================================.
 723  0 M>  * ============================================================.
* Five Number Summary - SPSS Syntax.
 724  0 M>  * Five Number Summary - SPSS Syntax.
* Project folder:
 725  0 M>  * Project folder:
* D:\DATA ANALYSIS\A Basic Descriptive Statistics Guides\Five Number Summary
 726  0 M>  * D:\DATA ANALYSIS\A Basic Descriptive Statistics Guides\Five Numb
er Summary
*
 727  0 M>  *
* IMPORTANT:
 728  0 M>  * IMPORTANT:
* 1. Run the Python workflow first so this file exists:
 729  0 M>  * 1. Run the Python workflow first so this file exists:
*    D:\DATA ANALYSIS\A Basic Descriptive Statistics Guides\Five Number Summar
y\Python_Output\clean_data\five_number_summary_clean_data_for_spss.csv
 730  0 M>  *    D:\DATA ANALYSIS\A Basic Descriptive Statistics Guides\Five N
umber Summary\Python_Output\clean_data\five_number_sum
               mary_clean_data_for_spss.csv
*
 731  0 M>  *
* 2. The SPSS output folder must already exist before running this syntax:
 732  0 M>  * 2. The SPSS output folder must already exist before running this
 syntax:
*    D:\DATA ANALYSIS\A Basic Descriptive Statistics Guides\Five Number Summar
y\Python_Output\pdf
 733  0 M>  *    D:\DATA ANALYSIS\A Basic Descriptive Statistics Guides\Five N
umber Summary\Python_Output\pdf
*
 734  0 M>  *
* 3. SPSS usually will NOT create missing Windows folders automatically.
 735  0 M>  * 3. SPSS usually will NOT create missing Windows folders automati
cally.
*    This syntax saves BOTH the editable SPSS Viewer output and the PDF output
.
 736  0 M>  *    This syntax saves BOTH the editable SPSS Viewer output and th
e PDF output.
* ============================================================.
 737  0 M>  * ============================================================.

 738  0 M>
```

```
SET PRINTBACK=ON.
 739  0 M>  SET PRINTBACK=ON.
SET MPRINT=ON.
 740  0 M>  SET MPRINT=ON.
SET TVARS=NAMES.
 741  0 M>  SET TVARS=NAMES.
SET TNUMBERS=VALUES.
 742  0 M>  SET TNUMBERS=VALUES.

 743  0 M>
TITLE "Five Number Summary: SPSS Output for Student Performance Data".
 744  0 M>  TITLE "Five Number Summary: SPSS Output for Student Performance Da
ta".

>Warning # 2003.  Command name: TITLE
>The title given exceeds 60 characters in length.  The first 60 characters wil
l
>be used.
```

```
 745  0 M>
* ------------------------------------------------------------.
 746  0 M>  * ------------------------------------------------------------.
* 1. Import the clean SPSS-ready CSV generated by Python.
 747  0 M>  * 1. Import the clean SPSS-ready CSV generated by Python.
* ------------------------------------------------------------.
 748  0 M>  * ------------------------------------------------------------.

 749  0 M>
GET DATA
 750  0 M>  GET DATA
  /TYPE=TXT
 751  0 M>    /TYPE=TXT
  /FILE="D:\DATA ANALYSIS\A Basic Descriptive Statistics Guides\Five Number Su
mmary\Python_Output\clean_data\five_number_summary_clean_data_for_spss.csv"
 752  0 M>    /FILE="D:\DATA ANALYSIS\A Basic Descriptive Statistics Guides\Fi
ve Number Summary\Python_Output\clean_data\five_number
               _summary_clean_data_for_spss.csv"
  /ENCODING="UTF8"
 753  0 M>    /ENCODING="UTF8"
  /DELCASE=LINE
 754  0 M>    /DELCASE=LINE
  /DELIMITERS=","
 755  0 M>    /DELIMITERS=","
  /QUALIFIER='"'
 756  0 M>    /QUALIFIER='"'
  /ARRANGEMENT=DELIMITED
 757  0 M>    /ARRANGEMENT=DELIMITED
  /FIRSTCASE=2
 758  0 M>    /FIRSTCASE=2
  /IMPORTCASE=ALL
 759  0 M>    /IMPORTCASE=ALL
  /VARIABLES=
 760  0 M>    /VARIABLES=
    school A8
 761  0 M>      school A8
    sex A8
 762  0 M>      sex A8
    age F8.0
```

```
763  0 M>      age F8.0
   address A8
764  0 M>      address A8
   famsize A8
765  0 M>      famsize A8
   Pstatus A8
766  0 M>      Pstatus A8
   Medu F8.0
767  0 M>      Medu F8.0
   Fedu F8.0
768  0 M>      Fedu F8.0
   Mjob A20
769  0 M>      Mjob A20
   Fjob A20
770  0 M>      Fjob A20
   reason A20
771  0 M>      reason A20
   guardian A20
772  0 M>      guardian A20
   traveltime F8.0
773  0 M>      traveltime F8.0
   studytime F8.0
774  0 M>      studytime F8.0
   failures F8.0
775  0 M>      failures F8.0
   schoolsup A8
776  0 M>      schoolsup A8
   famsup A8
777  0 M>      famsup A8
   paid A8
778  0 M>      paid A8
   activities A8
779  0 M>      activities A8
   nursery A8
780  0 M>      nursery A8
   higher A8
781  0 M>      higher A8
   internet A8
782  0 M>      internet A8
```

```
    romantic A8
 783  0 M>      romantic A8
    famrel F8.0
 784  0 M>      famrel F8.0
    freetime F8.0
 785  0 M>      freetime F8.0
    goout F8.0
 786  0 M>      goout F8.0
    Dalc F8.0
 787  0 M>      Dalc F8.0
    Walc F8.0
 788  0 M>      Walc F8.0
    health F8.0
 789  0 M>      health F8.0
    absences F8.0
 790  0 M>      absences F8.0
    G1 F8.0
 791  0 M>      G1 F8.0
    G2 F8.0
 792  0 M>      G2 F8.0
    G3 F8.0
 793  0 M>      G3 F8.0
    studytime_group A20
 794  0 M>      studytime_group A20
    failure_group A20
 795  0 M>      failure_group A20
    absences_group A20.
 796  0 M>      absences_group A20.
EXECUTE.
 797  0 M>  EXECUTE.

 798  0 M>
DATASET NAME FiveNumberSummary WINDOW=FRONT.
 799  0 M>  DATASET NAME FiveNumberSummary WINDOW=FRONT.
```

Dataset Name

Warnings

The active dataset will replace the existing dataset named FiveNumberSummary.

```
 800  0 M>
* ------------------------------------------------------------.
 801  0 M>  * ------------------------------------------------------------.
* 2. Variable labels.
 802  0 M>  * 2. Variable labels.
* ------------------------------------------------------------.
 803  0 M>  * ------------------------------------------------------------.

 804  0 M>
VARIABLE LABELS
 805  0 M>  VARIABLE LABELS
  school "Student school"
 806  0 M>    school "Student school"
  sex "Student sex"
 807  0 M>    sex "Student sex"
  age "Student age"
 808  0 M>    age "Student age"
  traveltime "Travel time category"
 809  0 M>    traveltime "Travel time category"
  studytime "Weekly study time category"
 810  0 M>    studytime "Weekly study time category"
  failures "Number of past class failures"
 811  0 M>    failures "Number of past class failures"
  schoolsup "Extra educational school support"
 812  0 M>    schoolsup "Extra educational school support"
  famsup "Family educational support"
 813  0 M>    famsup "Family educational support"
  paid "Extra paid classes"
 814  0 M>    paid "Extra paid classes"
  activities "Extra-curricular activities"
 815  0 M>    activities "Extra-curricular activities"
  nursery "Attended nursery school"
 816  0 M>    nursery "Attended nursery school"
  higher "Wants to take higher education"
 817  0 M>    higher "Wants to take higher education"
```

```
  internet "Internet access at home"
 818  0 M>    internet "Internet access at home"
  romantic "Romantic relationship"
 819  0 M>    romantic "Romantic relationship"
  famrel "Family relationship quality"
 820  0 M>    famrel "Family relationship quality"
  freetime "Free time after school"
 821  0 M>    freetime "Free time after school"
  goout "Going out with friends"
 822  0 M>    goout "Going out with friends"
  Dalc "Workday alcohol consumption"
 823  0 M>    Dalc "Workday alcohol consumption"
  Walc "Weekend alcohol consumption"
 824  0 M>    Walc "Weekend alcohol consumption"
  health "Current health status"
 825  0 M>    health "Current health status"
  absences "Number of school absences"
 826  0 M>    absences "Number of school absences"
  G1 "First-period grade"
 827  0 M>    G1 "First-period grade"
  G2 "Second-period grade"
 828  0 M>    G2 "Second-period grade"
  G3 "Final grade"
 829  0 M>    G3 "Final grade"
  studytime_group "Study-time group"
 830  0 M>    studytime_group "Study-time group"
  failure_group "Past-failure group"
 831  0 M>    failure_group "Past-failure group"
  absences_group "Absences group".
 832  0 M>    absences_group "Absences group".

 833  0 M>
VALUE LABELS
 834  0 M>  VALUE LABELS
  studytime
 835  0 M>    studytime
    1 "<2 hours"
 836  0 M>      1 "<2 hours"
    2 "2 to 5 hours"
```

```
 837  0 M>      2 "2 to 5 hours"
    3 "5 to 10 hours"
 838  0 M>      3 "5 to 10 hours"
    4 ">10 hours"
 839  0 M>      4 ">10 hours"
  failures
 840  0 M>    failures

>Warning # 4492 in column 3.  Text: failures
>The (ADD) VALUE LABELS command included a symbol other than a value where a
>value (either numeric or string) was expected.  For compatibility with
>previous systems, a parenthesized value would have been acceptable.  All valu
e
>labels up to the next slash will be ignored.
    0 "0 failures"
 841  0 M>      0 "0 failures"
    1 "1 failure"
 842  0 M>      1 "1 failure"
    2 "2 failures"
 843  0 M>      2 "2 failures"
    3 "3 failures"
 844  0 M>      3 "3 failures"
    4 "4 failures".
 845  0 M>      4 "4 failures".

 846  0 M>
FORMATS age traveltime studytime failures famrel freetime goout Dalc Walc heal
th absences G1 G2 G3 (F8.0).
 847  0 M>  FORMATS age traveltime studytime failures famrel freetime goout Da
lc Walc health absences G1 G2 G3 (F8.0).

 848  0 M>
* ------------------------------------------------------------.
 849  0 M>  * ------------------------------------------------------------.
* 3. Dataset overview.
 850  0 M>  * 3. Dataset overview.
* ------------------------------------------------------------.
 851  0 M>  * ------------------------------------------------------------.
```

```
 852  0 M>
TITLE "Five Number Summary: Dataset Overview".
 853  0 M>  TITLE "Five Number Summary: Dataset Overview".
```

```
 854   0 M>
FREQUENCIES VARIABLES=school sex higher internet schoolsup romantic studytime_
group failure_group absences_group
 855   0 M>  FREQUENCIES VARIABLES=school sex higher internet schoolsup romanti
c studytime_group failure_group absences_group
  /ORDER=ANALYSIS.
 856   0 M>    /ORDER=ANALYSIS.
```

Frequencies

Statistics

		school	sex	higher	internet	schoolsup	romantic	studytime_group
N	Valid	649	649	649	649	649	649	649
	Missing	0	0	0	0	0	0	0

Statistics

		failure_group	absences_group
N	Valid	649	649
	Missing	0	0

Frequency Table

school

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	GP	423	65.2	65.2	65.2
	MS	226	34.8	34.8	100.0
	Total	649	100.0	100.0	

sex

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	383	59.0	59.0	59.0
	Male	266	41.0	41.0	100.0
	Total	649	100.0	100.0	

higher

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	69	10.6	10.6	10.6
	Yes	580	89.4	89.4	100.0
	Total	649	100.0	100.0	

internet

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	151	23.3	23.3	23.3
	Yes	498	76.7	76.7	100.0
	Total	649	100.0	100.0	

schoolsup

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	581	89.5	89.5	89.5
	Yes	68	10.5	10.5	100.0
	Total	649	100.0	100.0	

romantic

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	410	63.2	63.2	63.2
	Yes	239	36.8	36.8	100.0
	Total	649	100.0	100.0	

Five Number Summary: Dataset Overview

studytime_group

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<2 hours	212	32.7	32.7	32.7
	>10 hours	35	5.4	5.4	38.1
	2 to 5 hours	305	47.0	47.0	85.1
	5 to 10 hours	97	14.9	14.9	100.0
	Total	649	100.0	100.0	

failure_group

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 failures	549	84.6	84.6	84.6
	1 failure	70	10.8	10.8	95.4
	2 failures	16	2.5	2.5	97.8
	3+ failures	14	2.2	2.2	100.0
	Total	649	100.0	100.0	

absences_group

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 absences	244	37.6	37.6	37.6
	1 to 3 absences	129	19.9	19.9	57.5
	4 to 7 absences	157	24.2	24.2	81.7
	8+ absences	119	18.3	18.3	100.0
	Total	649	100.0	100.0	

```
 857  0 M>
DESCRIPTIVES VARIABLES=age traveltime studytime failures famrel freetime goout
 Dalc Walc health absences G1 G2 G3
 858  0 M>  DESCRIPTIVES VARIABLES=age traveltime studytime failures famrel fr
eetime goout Dalc Walc health absences G1 G2 G3
  /STATISTICS=MEAN STDDEV MIN MAX.
 859  0 M>    /STATISTICS=MEAN STDDEV MIN MAX.
```

Descriptives

Five Number Summary: Dataset Overview

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
age	649	15	22	16.74	1.218
traveltime	649	1	4	1.57	.749
studytime	649	1	4	1.93	.830
failures	649	0	3	.22	.593
famrel	649	1	5	3.93	.956
freetime	649	1	5	3.18	1.051
goout	649	1	5	3.18	1.176
Dalc	649	1	5	1.50	.925
Walc	649	1	5	2.28	1.284
health	649	1	5	3.54	1.446
absences	649	0	32	3.66	4.641
G1	649	0	19	11.40	2.745
G2	649	0	19	11.57	2.914
G3	649	0	19	11.91	3.231
Valid N (listwise)	649				

```
 860  0 M>
* ------------------------------------------------------------.
 861  0 M>  * ------------------------------------------------------------.
* 4. Five-number summary for all important numeric variables.
 862  0 M>  * 4. Five-number summary for all important numeric variables.
*    SPSS EXAMINE gives minimum, maximum, median, quartiles,
 863  0 M>  *    SPSS EXAMINE gives minimum, maximum, median, quartiles,
*    interquartile range details through percentiles and boxplots.
 864  0 M>  *    interquartile range details through percentiles and boxplots.
* ------------------------------------------------------------.
 865  0 M>  * ------------------------------------------------------------.

 866  0 M>
TITLE "Five Number Summary: Numeric Variables".
 867  0 M>  TITLE "Five Number Summary: Numeric Variables".
```

```
 868  0 M>
EXAMINE VARIABLES=age traveltime studytime failures famrel freetime goout Dalc
 Walc health absences G1 G2 G3
 869  0 M>  EXAMINE VARIABLES=age traveltime studytime failures famrel freetim
e goout Dalc Walc health absences G1 G2 G3
  /PLOT BOXPLOT STEMLEAF HISTOGRAM
 870  0 M>    /PLOT BOXPLOT STEMLEAF HISTOGRAM
  /COMPARE GROUPS
 871  0 M>    /COMPARE GROUPS
  /STATISTICS DESCRIPTIVES EXTREME
 872  0 M>    /STATISTICS DESCRIPTIVES EXTREME
  /PERCENTILES(25,50,75) HAVERAGE
 873  0 M>    /PERCENTILES(25,50,75) HAVERAGE
  /CINTERVAL 95
 874  0 M>    /CINTERVAL 95
  /MISSING LISTWISE
 875  0 M>    /MISSING LISTWISE
  /NOTOTAL.
 876  0 M>    /NOTOTAL.
```

Explore

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
age	649	100.0%	0	0.0%	649	100.0%
traveltime	649	100.0%	0	0.0%	649	100.0%
studytime	649	100.0%	0	0.0%	649	100.0%
failures	649	100.0%	0	0.0%	649	100.0%
famrel	649	100.0%	0	0.0%	649	100.0%
freetime	649	100.0%	0	0.0%	649	100.0%
goout	649	100.0%	0	0.0%	649	100.0%
Dalc	649	100.0%	0	0.0%	649	100.0%
Walc	649	100.0%	0	0.0%	649	100.0%
health	649	100.0%	0	0.0%	649	100.0%
absences	649	100.0%	0	0.0%	649	100.0%
G1	649	100.0%	0	0.0%	649	100.0%
G2	649	100.0%	0	0.0%	649	100.0%
G3	649	100.0%	0	0.0%	649	100.0%

Five Number Summary: Numeric Variables

Descriptives

			Statistic	Std. Error
age	Mean		16.74	.048
	95% Confidence Interval for Mean	Lower Bound	16.65	
		Upper Bound	16.84	
	5% Trimmed Mean		16.69	
	Median		17.00	
	Variance		1.484	
	Std. Deviation		1.218	
	Minimum		15	
	Maximum		22	
	Range		7	
	Interquartile Range		2	
	Skewness		.417	.096
	Kurtosis		.072	.192
traveltime	Mean		1.57	.029
	95% Confidence Interval for Mean	Lower Bound	1.51	
		Upper Bound	1.63	
	5% Trimmed Mean		1.49	
	Median		1.00	
	Variance		.560	
	Std. Deviation		.749	
	Minimum		1	
	Maximum		4	
	Range		3	
	Interquartile Range		1	
	Skewness		1.248	.096
	Kurtosis		1.109	.192
studytime	Mean		1.93	.033
	95% Confidence Interval for Mean	Lower Bound	1.87	
		Upper Bound	1.99	
	5% Trimmed Mean		1.87	
	Median		2.00	
	Variance		.688	
	Std. Deviation		.830	

Five Number Summary: Numeric Variables

Descriptives

			Statistic	Std. Error
	Minimum		1	
	Maximum		4	
	Range		3	
	Interquartile Range		1	
	Skewness		.700	.096
	Kurtosis		.038	.192
failures	Mean		.22	.023
	95% Confidence Interval for Mean	Lower Bound	.18	
		Upper Bound	.27	
	5% Trimmed Mean		.12	
	Median		.00	
	Variance		.352	
	Std. Deviation		.593	
	Minimum		0	
	Maximum		3	
	Range		3	
	Interquartile Range		0	
	Skewness		3.093	.096
	Kurtosis		9.824	.192
famrel	Mean		3.93	.038
	95% Confidence Interval for Mean	Lower Bound	3.86	
		Upper Bound	4.00	
	5% Trimmed Mean		4.02	
	Median		4.00	
	Variance		.913	
	Std. Deviation		.956	
	Minimum		1	
	Maximum		5	
	Range		4	
	Interquartile Range		1	
	Skewness		-1.106	.096
	Kurtosis		1.349	.192
freetime	Mean		3.18	.041

Five Number Summary: Numeric Variables

Descriptives

			Statistic	Std. Error
	95% Confidence Interval for Mean	Lower Bound	3.10	
		Upper Bound	3.26	
	5% Trimmed Mean		3.20	
	Median		3.00	
	Variance		1.105	
	Std. Deviation		1.051	
	Minimum		1	
	Maximum		5	
	Range		4	
	Interquartile Range		1	
	Skewness		-.181	.096
	Kurtosis		-.397	.192
goout	Mean		3.18	.046
	95% Confidence Interval for Mean	Lower Bound	3.09	
		Upper Bound	3.28	
	5% Trimmed Mean		3.21	
	Median		3.00	
	Variance		1.382	
	Std. Deviation		1.176	
	Minimum		1	
	Maximum		5	
	Range		4	
	Interquartile Range		2	
	Skewness		-.009	.096
	Kurtosis		-.865	.192
Dalc	Mean		1.50	.036
	95% Confidence Interval for Mean	Lower Bound	1.43	
		Upper Bound	1.57	
	5% Trimmed Mean		1.36	
	Median		1.00	
	Variance		.855	
	Std. Deviation		.925	
	Minimum		1	

Five Number Summary: Numeric Variables

Descriptives

			Statistic	Std. Error
	Maximum		5	
	Range		4	
	Interquartile Range		1	
	Skewness		2.142	.096
	Kurtosis		4.349	.192
Walc	Mean		2.28	.050
	95% Confidence Interval for Mean	Lower Bound	2.18	
		Upper Bound	2.38	
	5% Trimmed Mean		2.20	
	Median		2.00	
	Variance		1.650	
	Std. Deviation		1.284	
	Minimum		1	
	Maximum		5	
	Range		4	
	Interquartile Range		2	
	Skewness		.636	.096
	Kurtosis		-.771	.192
health	Mean		3.54	.057
	95% Confidence Interval for Mean	Lower Bound	3.42	
		Upper Bound	3.65	
	5% Trimmed Mean		3.60	
	Median		4.00	
	Variance		2.092	
	Std. Deviation		1.446	
	Minimum		1	
	Maximum		5	
	Range		4	
	Interquartile Range		3	
	Skewness		-.501	.096
	Kurtosis		-1.121	.192
absences	Mean		3.66	.182

Five Number Summary: Numeric Variables

Descriptives

			Statistic	Std. Error
	95% Confidence Interval for Mean	Lower Bound	3.30	
		Upper Bound	4.02	
	5% Trimmed Mean		3.09	
	Median		2.00	
	Variance		21.537	
	Std. Deviation		4.641	
	Minimum		0	
	Maximum		32	
	Range		32	
	Interquartile Range		6	
	Skewness		2.021	.096
	Kurtosis		5.781	.192
G1	Mean		11.40	.108
	95% Confidence Interval for Mean	Lower Bound	11.19	
		Upper Bound	11.61	
	5% Trimmed Mean		11.39	
	Median		11.00	
	Variance		7.536	
	Std. Deviation		2.745	
	Minimum		0	
	Maximum		19	
	Range		19	
	Interquartile Range		3	
	Skewness		-.003	.096
	Kurtosis		.037	.192
G2	Mean		11.57	.114
	95% Confidence Interval for Mean	Lower Bound	11.35	
		Upper Bound	11.79	
	5% Trimmed Mean		11.60	
	Median		11.00	
	Variance		8.489	
	Std. Deviation		2.914	
	Minimum		0	

Five Number Summary: Numeric Variables

Descriptives

			Statistic	Std. Error
	Maximum		19	
	Range		19	
	Interquartile Range		3	
	Skewness		-.360	.096
	Kurtosis		1.662	.192
G3	Mean		11.91	.127
	95% Confidence Interval for Mean	Lower Bound	11.66	
		Upper Bound	12.16	
	5% Trimmed Mean		12.06	
	Median		12.00	
	Variance		10.437	
	Std. Deviation		3.231	
	Minimum		0	
	Maximum		19	
	Range		19	
	Interquartile Range		4	
	Skewness		-.913	.096
	Kurtosis		2.712	.192

Five Number Summary: Numeric Variables

Percentiles

		Percentiles		
		25	50	75
Weighted Average (Definition 1)	age	16.00	17.00	18.00
	traveltime	1.00	1.00	2.00
	studytime	1.00	2.00	2.00
	failures	.00	.00	.00
	famrel	4.00	4.00	5.00
	freetime	3.00	3.00	4.00
	goout	2.00	3.00	4.00
	Dalc	1.00	1.00	2.00
	Walc	1.00	2.00	3.00
	health	2.00	4.00	5.00
	absences	.00	2.00	6.00
	G1	10.00	11.00	13.00
	G2	10.00	11.00	13.00
	G3	10.00	12.00	14.00
Tukey's Hinges	age	16.00	17.00	18.00
	traveltime	1.00	1.00	2.00
	studytime	1.00	2.00	2.00
	failures	.00	.00	.00
	famrel	4.00	4.00	5.00
	freetime	3.00	3.00	4.00
	goout	2.00	3.00	4.00
	Dalc	1.00	1.00	2.00
	Walc	1.00	2.00	3.00
	health	2.00	4.00	5.00
	absences	.00	2.00	6.00
	G1	10.00	11.00	13.00
	G2	10.00	11.00	13.00
	G3	10.00	12.00	14.00

Extreme Values

			Case Number	Value
age	Highest	1	280	22
		2	408	21
		3	414	21
		4	300	20
		5	352	20[a]
	Lowest	1	538	15
		2	537	15
		3	536	15
		4	483	15
		5	478	15[b]
traveltime	Highest	1	62	4
		2	109	4
		3	137	4
		4	139	4
		5	142	4[c]
	Lowest	1	646	1
		2	645	1
		3	637	1
		4	636	1
		5	635	1[d]
studytime	Highest	1	48	4
		2	67	4
		3	68	4
		4	70	4
		5	71	4[c]
	Lowest	1	649	1
		2	648	1
		3	644	1
		4	641	1
		5	640	1[d]
failures	Highest	1	19	3
		2	79	3

Extreme Values

			Case Number	Value
		3	132	3
		4	170	3
		5	171	3[e]
	Lowest	1	649	0
		2	648	0
		3	647	0
		4	646	0
		5	644	0[f]
famrel	Highest	1	2	5
		2	6	5
		3	10	5
		4	12	5
		5	14	5[g]
	Lowest	1	647	1
		2	616	1
		3	602	1
		4	583	1
		5	564	1[d]
freetime	Highest	1	10	5
		2	15	5
		3	19	5
		4	23	5
		5	33	5[g]
	Lowest	1	647	1
		2	635	1
		3	610	1
		4	599	1
		5	554	1[d]
goout	Highest	1	19	5
		2	30	5

Extreme Values

			Case Number	Value
		3	47	5
		4	53	5
		5	62	5[g]
	Lowest	1	649	1
		2	647	1
		3	625	1
		4	612	1
		5	610	1[d]
Dalc	Highest	1	30	5
		2	62	5
		3	67	5
		4	101	5
		5	144	5[g]
	Lowest	1	647	1
		2	646	1
		3	645	1
		4	643	1
		5	642	1[d]
Walc	Highest	1	30	5
		2	62	5
		3	67	5
		4	90	5
		5	101	5[g]
	Lowest	1	647	1
		2	646	1
		3	643	1
		4	639	1
		5	633	1[d]
health	Highest	1	4	5
		2	5	5

Extreme Values

			Case Number	Value
		3	6	5
		4	10	5
		5	13	5[g]
	Lowest	1	646	1
		2	643	1
		3	636	1
		4	635	1
		5	631	1[d]
absences	Highest	1	198	32
		2	213	30
		3	257	26
		4	151	24
		5	156	22[h]
	Lowest	1	643	0
		2	642	0
		3	641	0
		4	640	0
		5	638	0[f]
G1	Highest	1	618	19
		2	114	18
		3	333	18
		4	339	18
		5	345	18[i]
	Lowest	1	1	0
		2	570	4
		3	568	4
		4	640	5
		5	606	5[j]
G2	Highest	1	339	19
		2	197	18

Extreme Values

			Case Number	Value
		3	241	18
		4	333	18
		5	338	18[i]
	Lowest	1	611	0
		2	606	0
		3	604	0
		4	598	0
		5	568	0[f]
G3	Highest	1	339	19
		2	637	19
		3	114	18
		4	182	18
		5	186	18[i]
	Lowest	1	641	0
		2	640	0
		3	638	0
		4	627	0
		5	611	0[f]

a. Only a partial list of cases with the value 20 are shown in the table of upper extremes.

b. Only a partial list of cases with the value 15 are shown in the table of lower extremes.

c. Only a partial list of cases with the value 4 are shown in the table of upper extremes.

d. Only a partial list of cases with the value 1 are shown in the table of lower extremes.

e. Only a partial list of cases with the value 3 are shown in the table of upper extremes.

f. Only a partial list of cases with the value 0 are shown in the table of lower extremes.

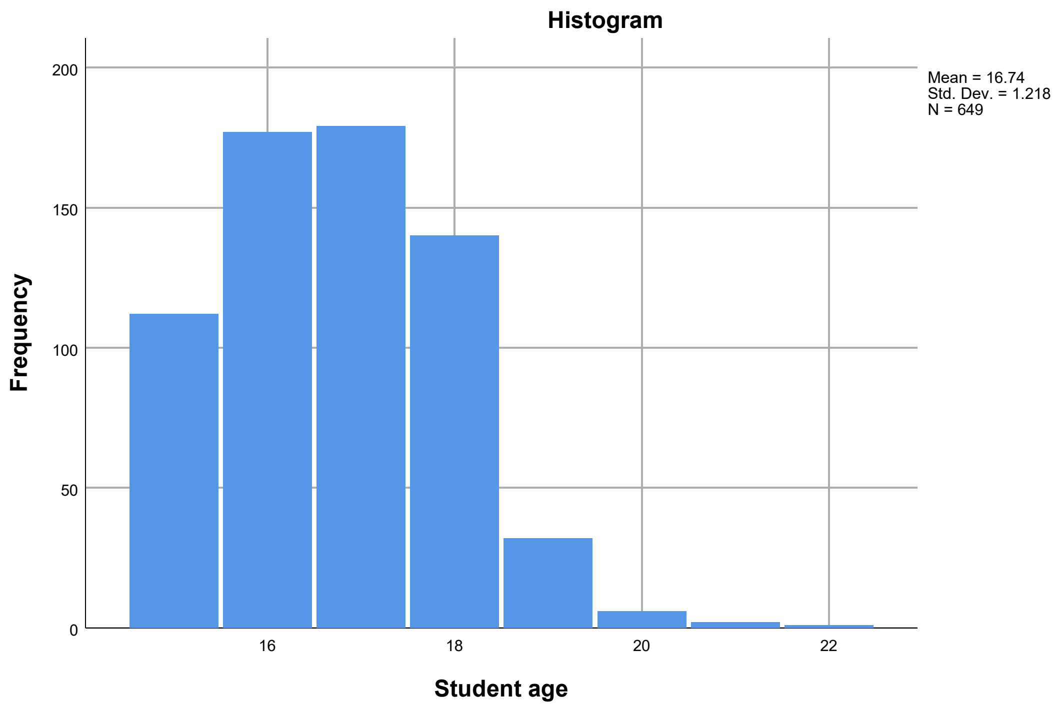
g. Only a partial list of cases with the value 5 are shown in the table of upper extremes.

h. Only a partial list of cases with the value 22 are shown in the table of upper extremes.

i. Only a partial list of cases with the value 18 are shown in the table of upper extremes.

j. Only a partial list of cases with the value 5 are shown in the table of lower extremes.

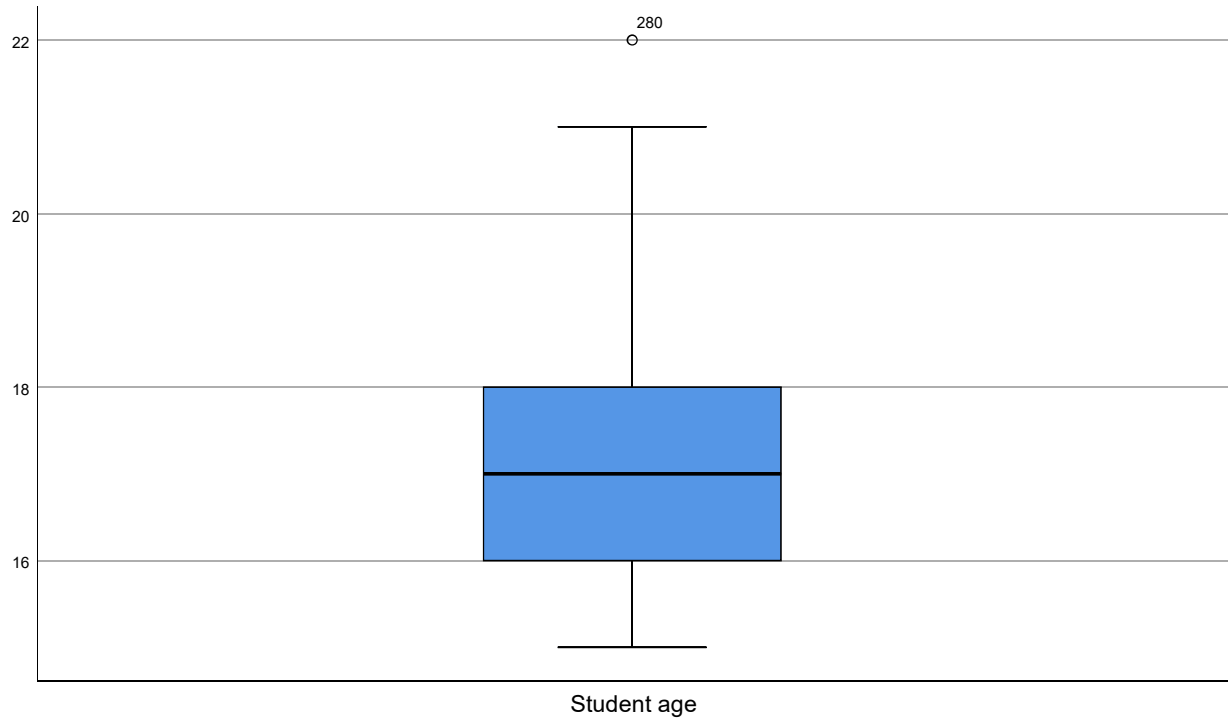
Student age



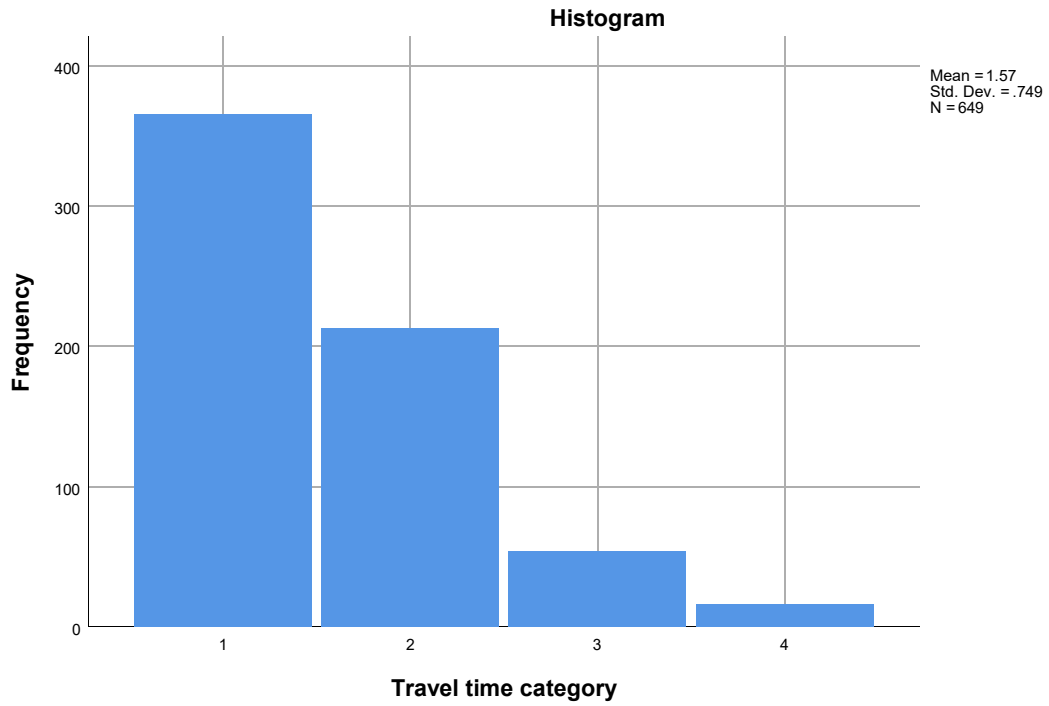

```
Student age Stem-and-Leaf Plot

 Frequency    Stem &  Leaf

   112.00       15 .  00000000000000000000000000000000000000000000000000000000
      .00       15 .
   177.00       16 .  00000000000000000000000000000000000000000000000000000000
00000000000000000000000000000000
      .00       16 .
   179.00       17 .  00000000000000000000000000000000000000000000000000000000
000000000000000000000000000000000
      .00       17 .
   140.00       18 .  00000000000000000000000000000000000000000000000000000000
00000000000000
```

Five Number Summary: Numeric Variables

```
     .00       18 .
   32.00       19 .  00000000000000000
     .00       19 .
    6.00       20 .  000
     .00       20 .
    2.00       21 .  0
    1.00 Extremes    (>=22.0)

Stem width:         1
Each leaf:        2 case(s)
```

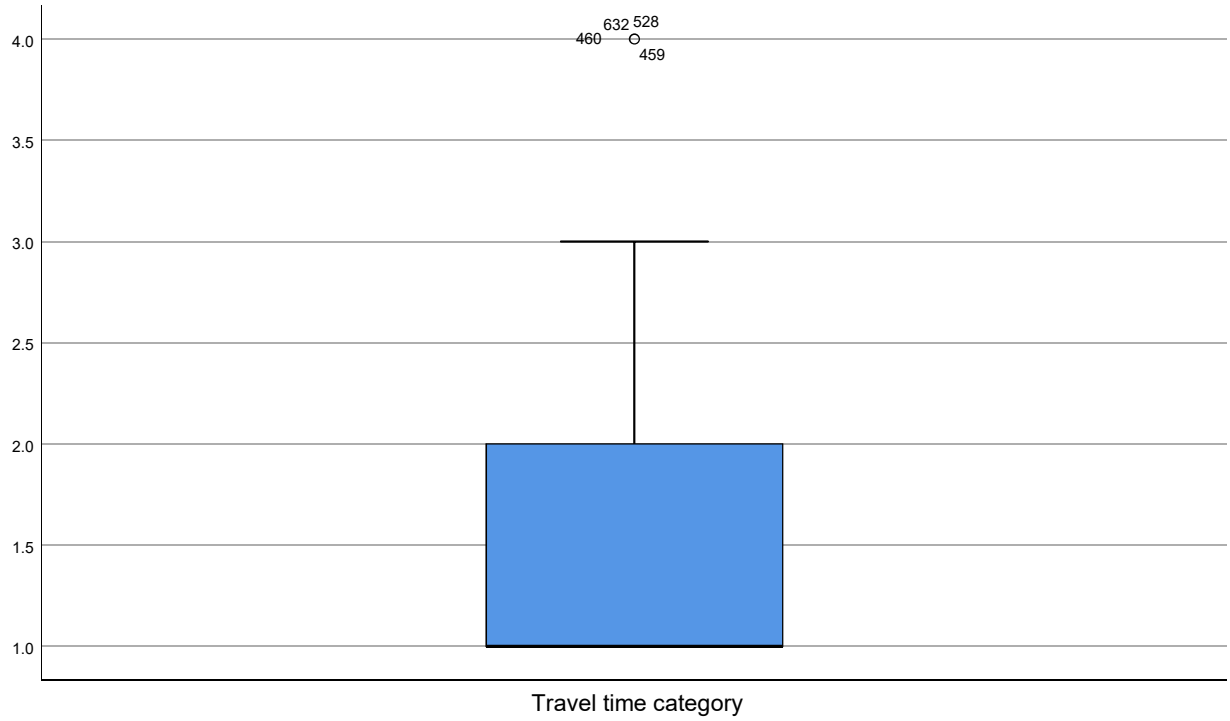


Travel time category

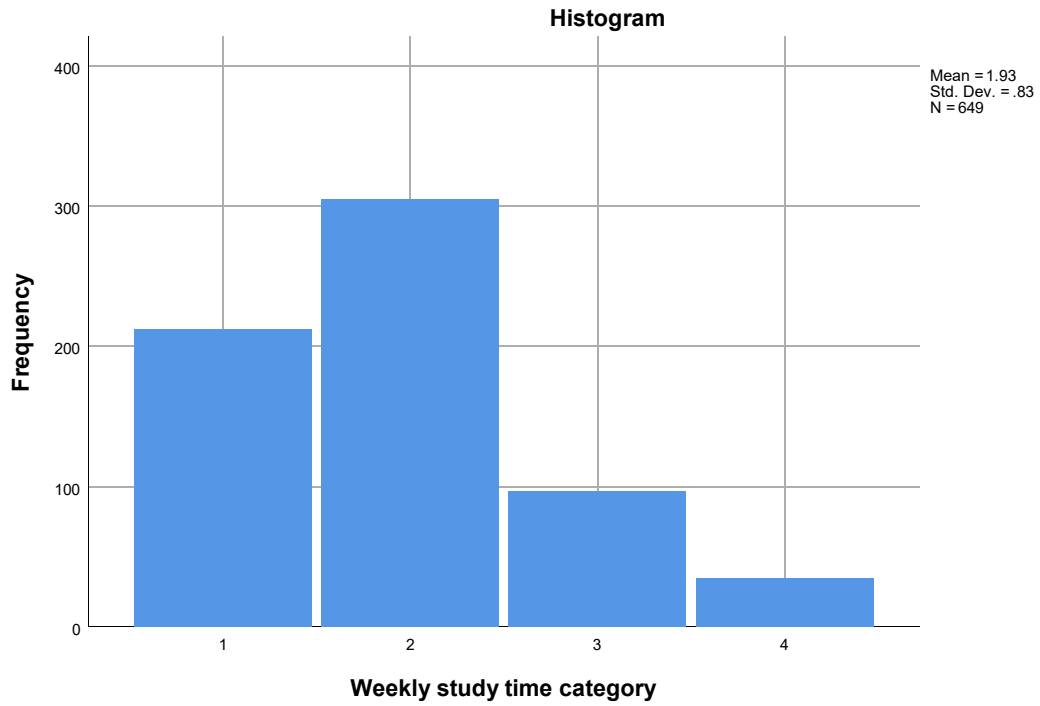



```
Travel time category Stem-and-Leaf Plot

 Frequency    Stem &  Leaf

   366.00        1 .  0000000000000000000000000000000000000000000000000000000000000000000000000000
0000000000000000000000000000000000
      .00        1 .
      .00        1 .
      .00        1 .
      .00        1 .
   213.00        2 .  000000000000000000000000000000000000000000000000000000000000000
      .00        2 .
      .00        2 .
      .00        2 .
      .00        2 .
    54.00        3 .  000000000000
    16.00 Extremes    (>=4.0)

 Stem width:         1
 Each leaf:        4 case(s)
```

Five Number Summary: Numeric Variables

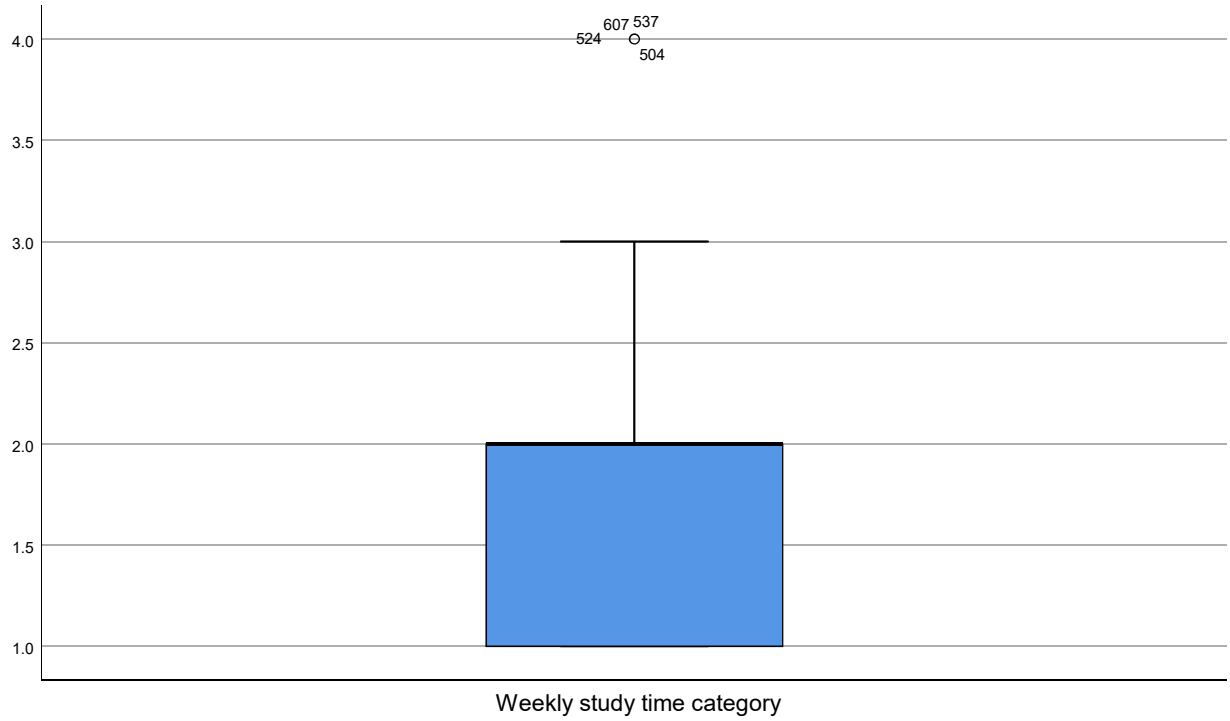


Weekly study time category



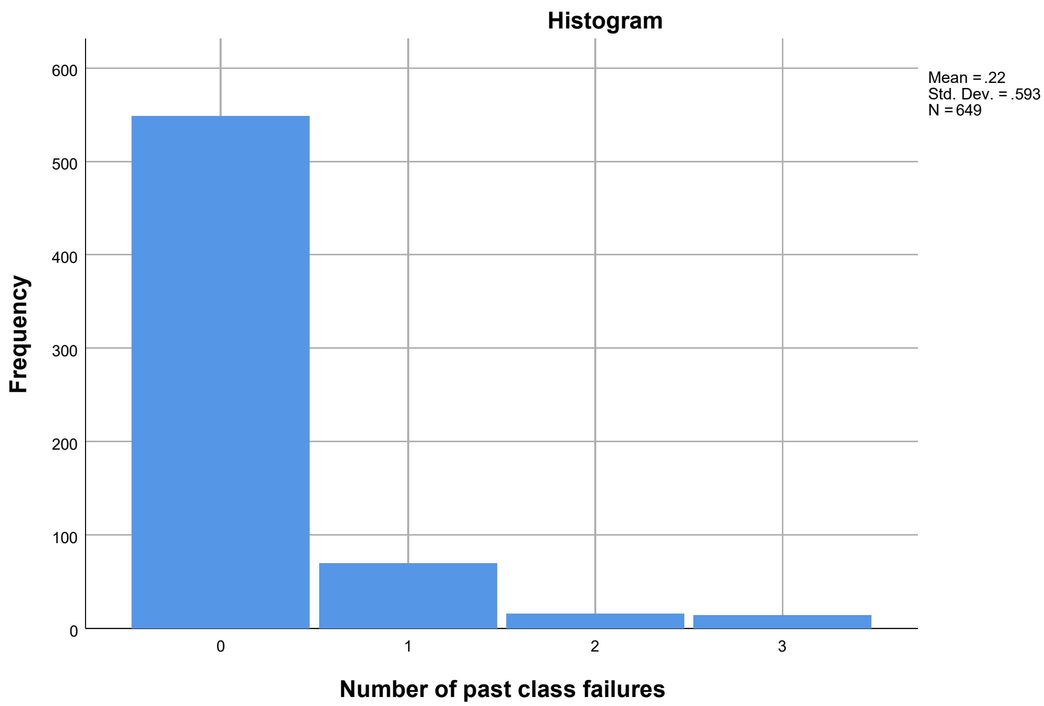

```
Weekly study time category Stem-and-Leaf Plot

 Frequency    Stem &  Leaf

   212.00        1 .  00000000000000000000000000000000000000000000000000000
      .00        1 .
      .00        1 .
      .00        1 .
      .00        1 .
   305.00        2 .  00000000000000000000000000000000000000000000000000000000000
0000000000000000000
      .00        2 .
      .00        2 .
      .00        2 .
      .00        2 .
    97.00        3 .  0000000000000000000000
    35.00 Extremes    (>=4.0)

 Stem width:         1
 Each leaf:        4 case(s)
```

Five Number Summary: Numeric Variables

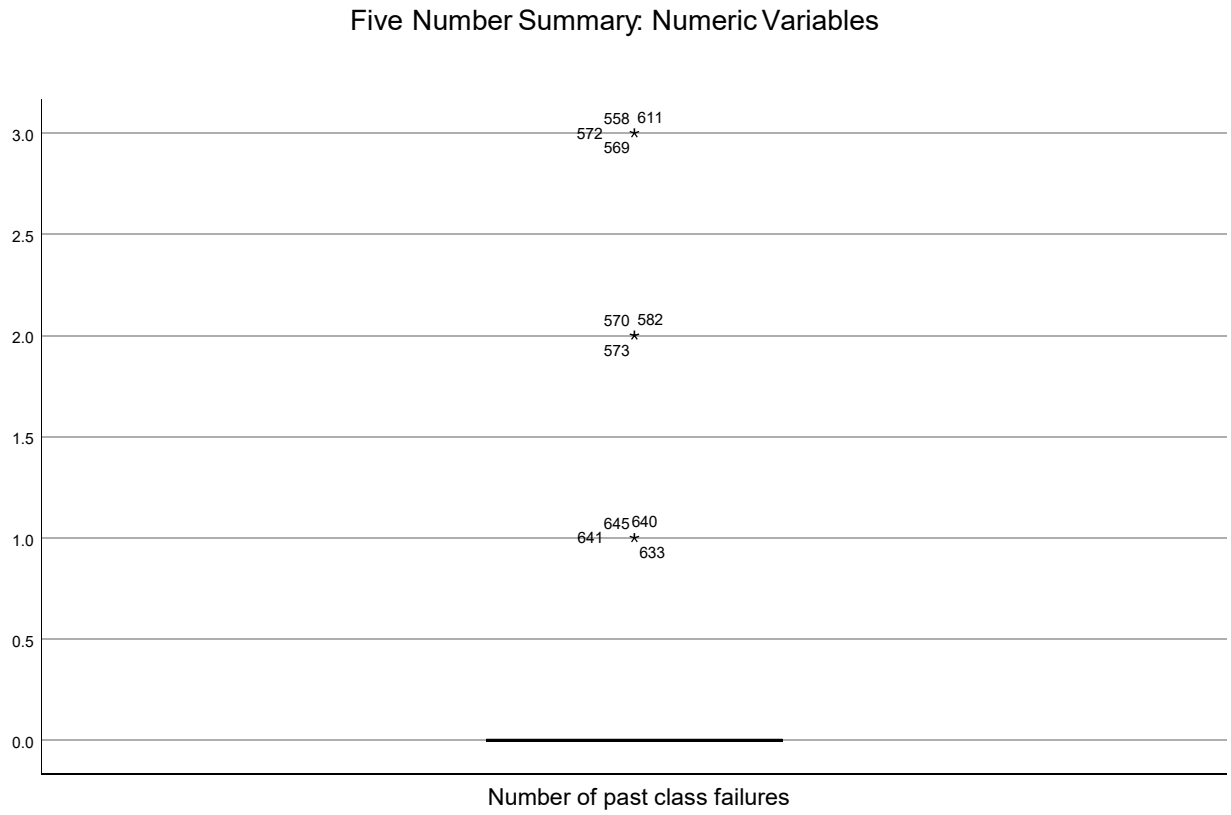


Number of past class failures

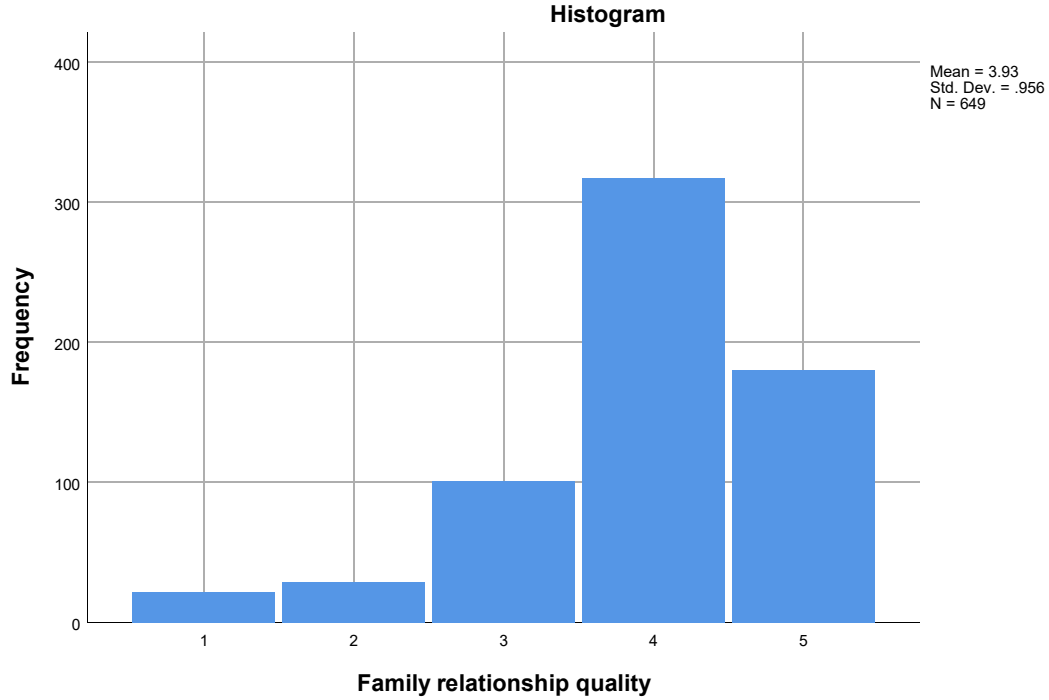
Five Number Summary: Numeric Variables



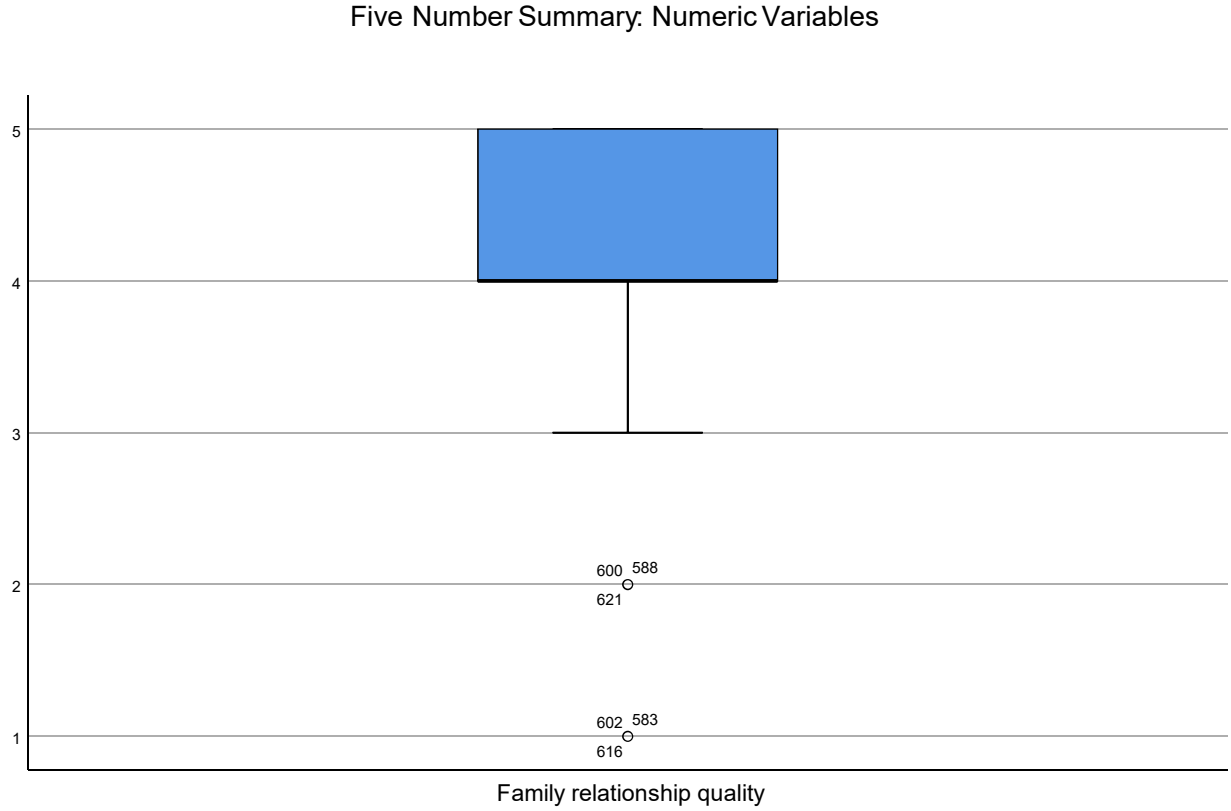

```
Number of past class failures Stem-and-Leaf Plot

 Frequency    Stem &  Leaf

   549.00        0 .  000000000000000000000000000000000000000000000000000000000
00000000000000000000000000000000000
   100.00 Extremes    (>=1)

 Stem width:        10
 Each leaf:        6 case(s)
```



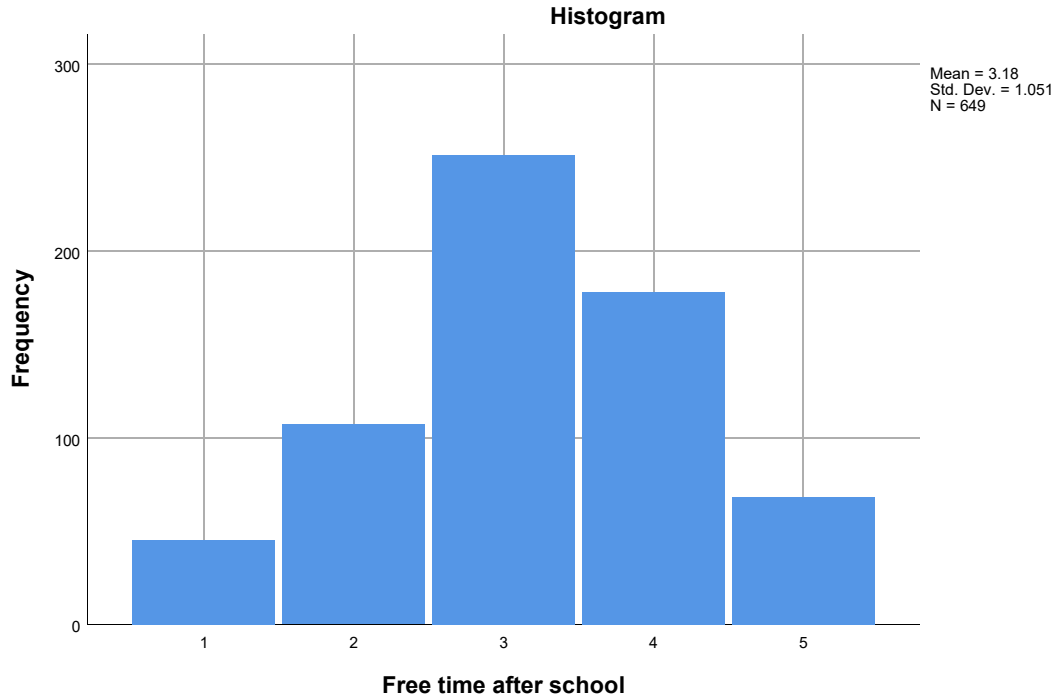
Family relationship quality



```
Family relationship quality Stem-and-Leaf Plot

 Frequency    Stem &  Leaf

    51.00 Extremes    (=<2.0)
   101.00         3 .  00000000000000000000000000
      .00         3 .
      .00         3 .
      .00         3 .
      .00         3 .
   317.00         4 .  00000000000000000000000000000000000000000000000000000000000000000000
0000000000000000000000
      .00         4 .
      .00         4 .
      .00         4 .
      .00         4 .
   180.00         5 .  000000000000000000000000000000000000000000000000

 Stem width:         1
 Each leaf:        4 case(s)
```

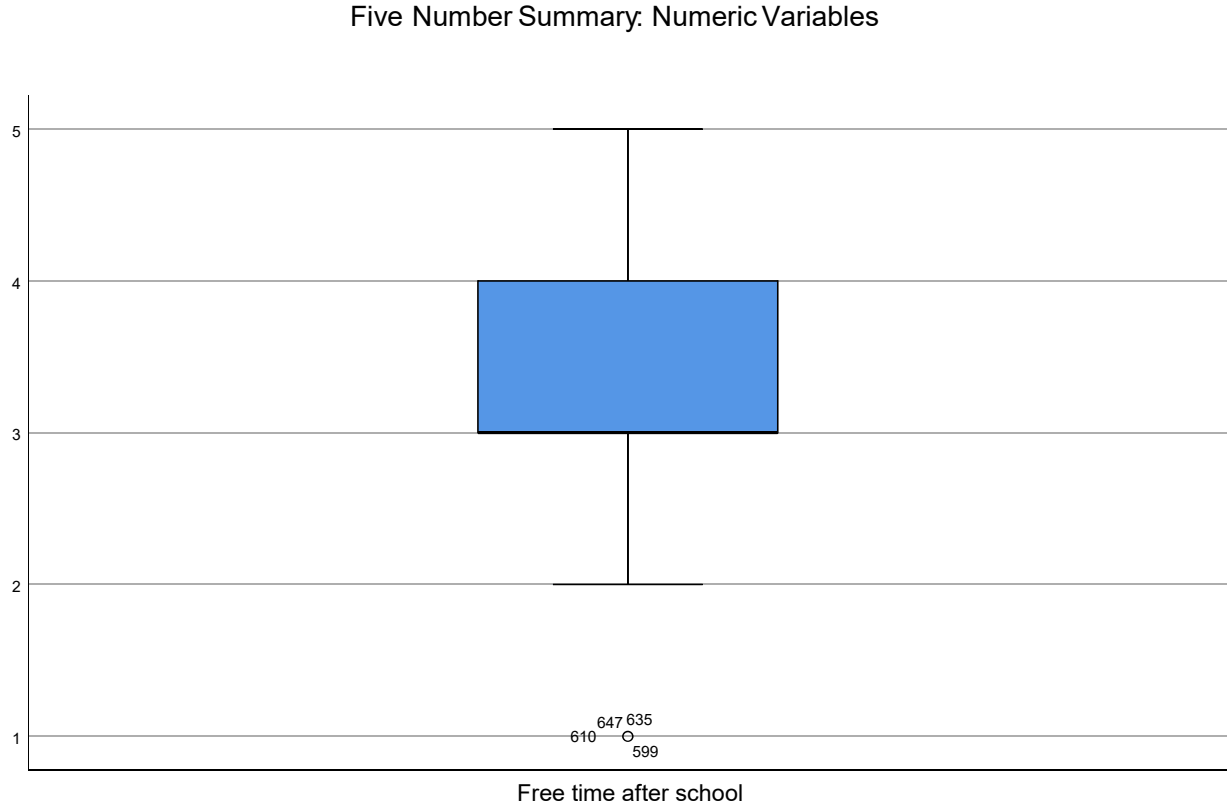


Free time after school

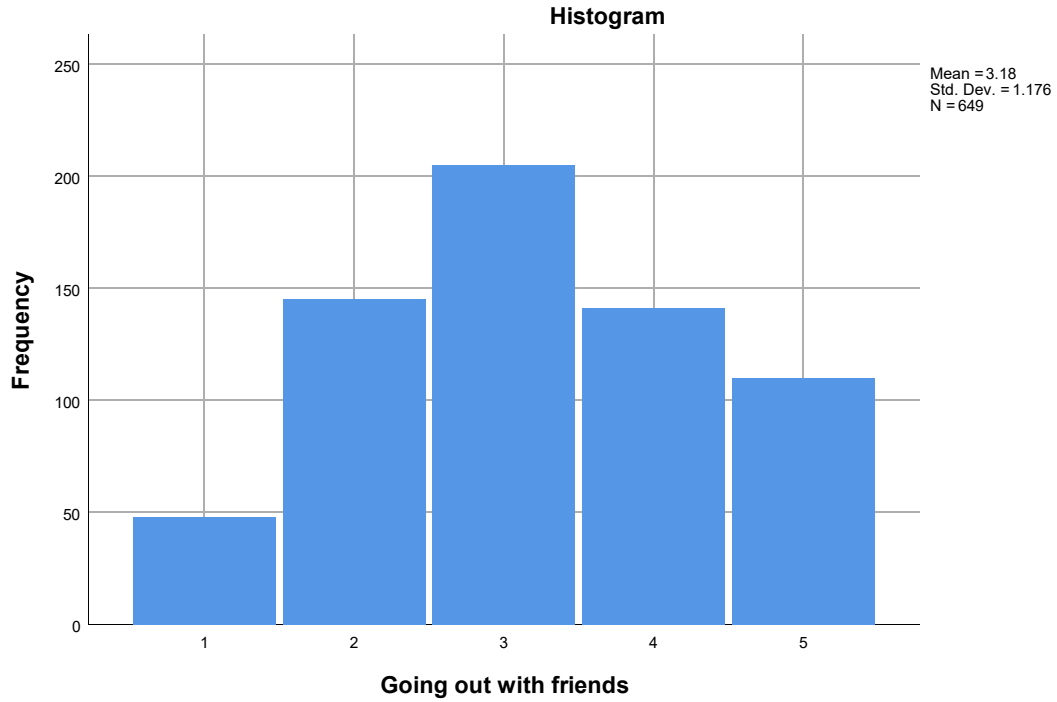


Five Number Summary: Numeric Variables

```
Free time after school Stem-and-Leaf Plot

 Frequency    Stem &  Leaf

    45.00 Extremes    (=<1.0)
   107.00        2 .  000000000000000000000000000000000000
      .00        2 .
      .00        2 .
      .00        2 .
      .00        2 .
   251.00        3 .  00000000000000000000000000000000000000000000000000000000
0000000000000000000000000000
      .00        3 .
      .00        3 .
      .00        3 .
      .00        3 .
   178.00        4 .  00000000000000000000000000000000000000000000000000000000
000
      .00        4 .
      .00        4 .
      .00        4 .
      .00        4 .
    68.00        5 .  00000000000000000000000

 Stem width:          1
 Each leaf:         3 case(s)
```

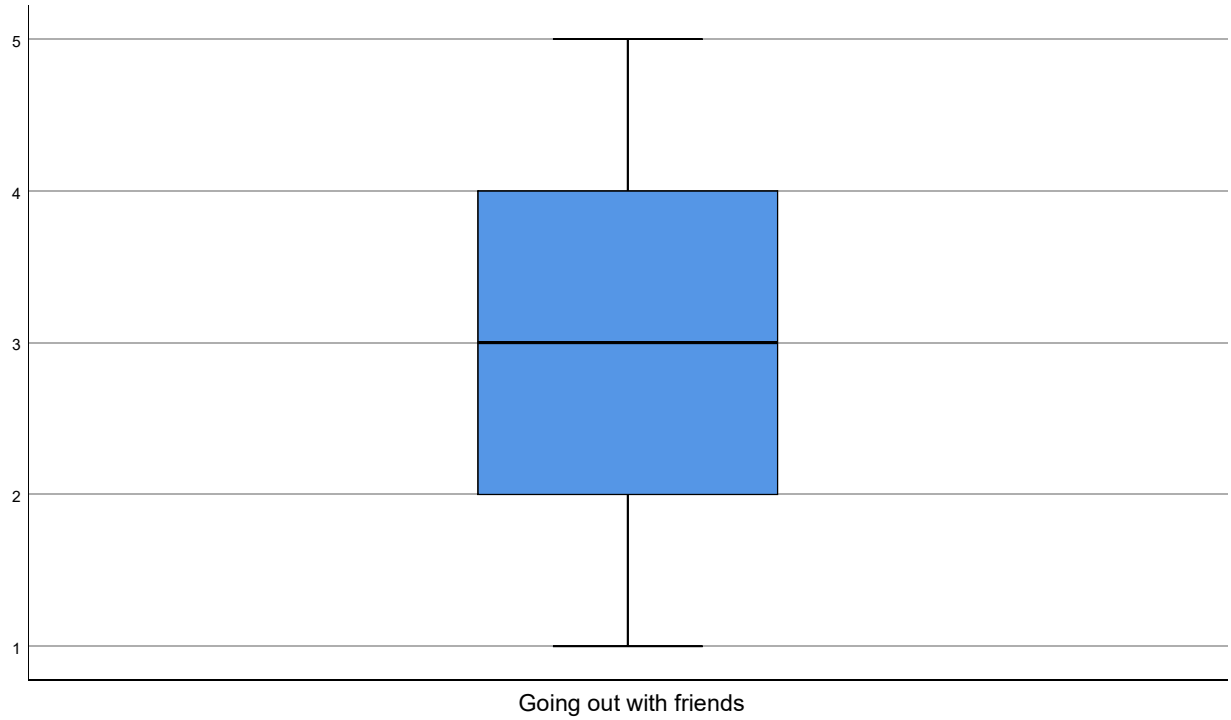


Going out with friends



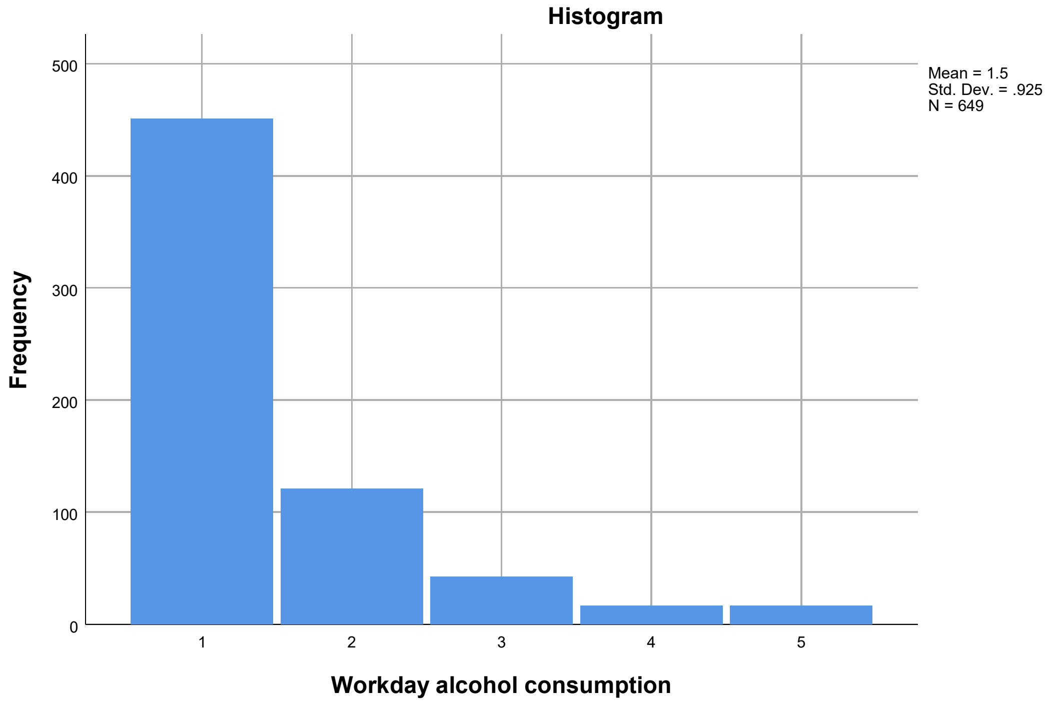
Five Number Summary: Numeric Variables

```
Going out with friends Stem-and-Leaf Plot

 Frequency    Stem &  Leaf

    48.00        1 .  0000000000000000
      .00        1 .
   145.00        2 .  00000000000000000000000000000000000000000000000000
      .00        2 .
   205.00        3 .  00000000000000000000000000000000000000000000000000000000000
0000000000000
      .00        3 .
   141.00        4 .  00000000000000000000000000000000000000000000000000
      .00        4 .
   110.00        5 .  00000000000000000000000000000000000000

 Stem width:         1
 Each leaf:        3 case(s)
```



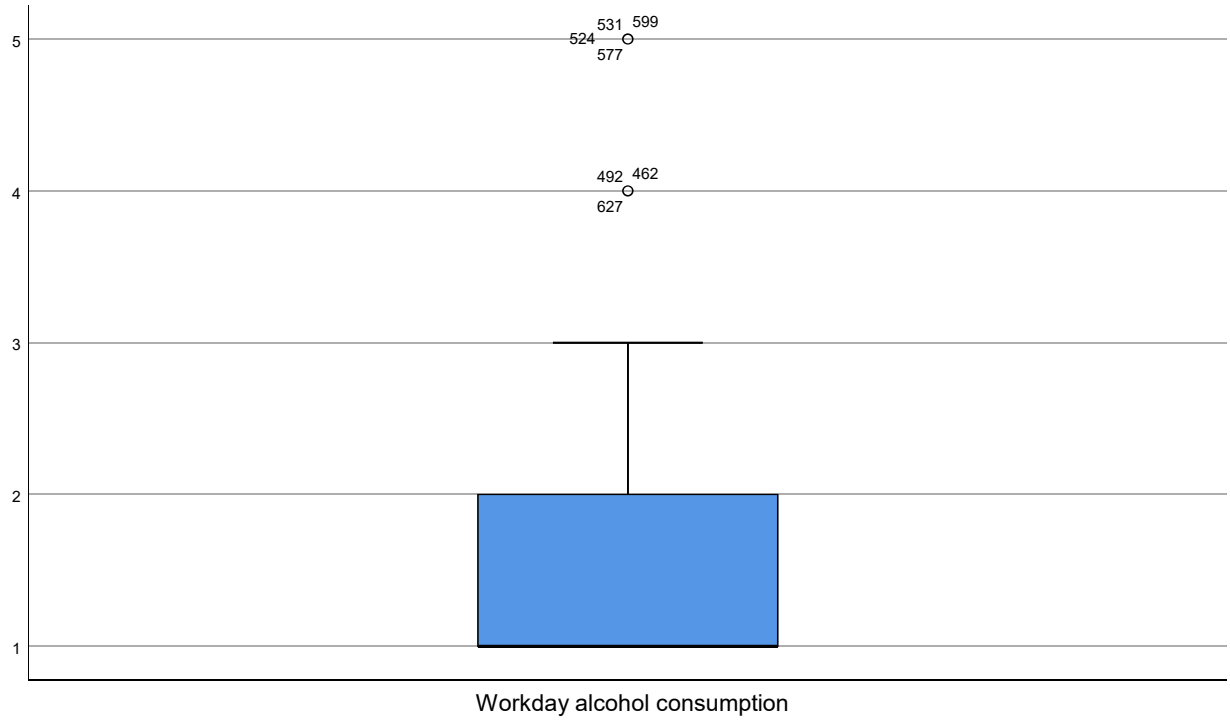
Workday alcohol consumption

Five Number Summary: Numeric Variables

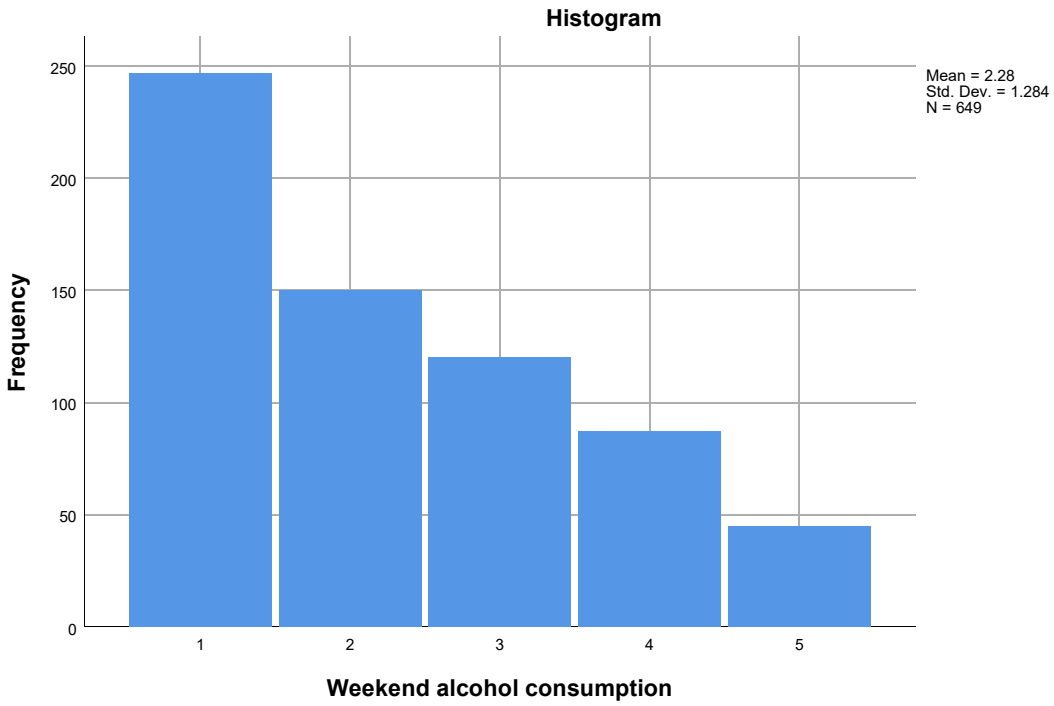



```
Workday alcohol consumption Stem-and-Leaf Plot

 Frequency    Stem &  Leaf

   451.00        1 .  00000000000000000000000000000000000000000000000000000000
0000000000000000000000000000000000
      .00        1 .
      .00        1 .
      .00        1 .
      .00        1 .
   121.00        2 .  000000000000000000000000
      .00        2 .
      .00        2 .
      .00        2 .
      .00        2 .
    43.00        3 .  000000000
    34.00 Extremes    (>=4.0)

 Stem width:          1
 Each leaf:        5 case(s)
```

Five Number Summary: Numeric Variables

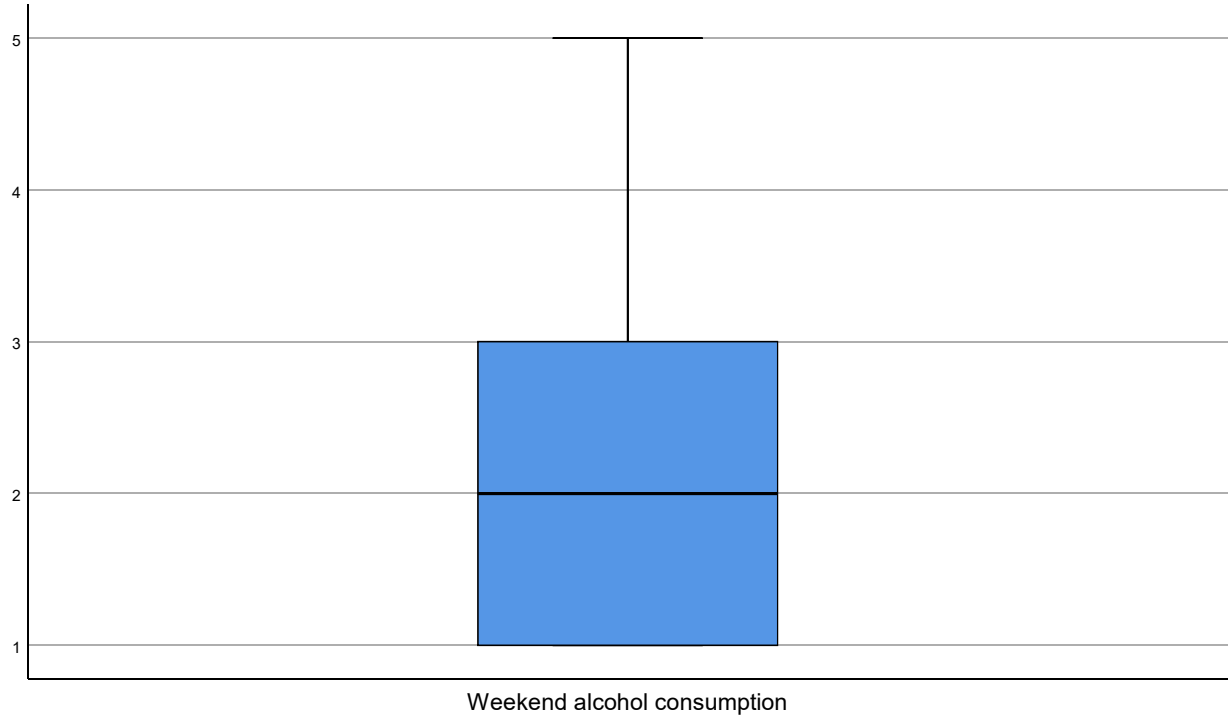


Weekend alcohol consumption

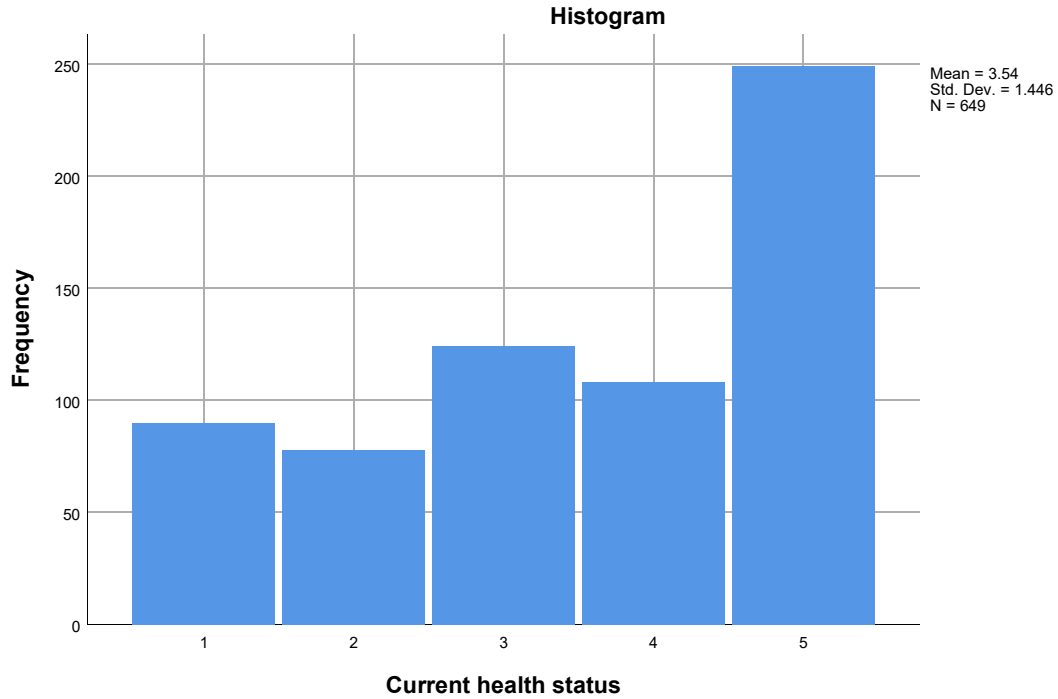



```
Weekend alcohol consumption Stem-and-Leaf Plot

 Frequency    Stem &  Leaf

   247.00        1 .  00000000000000000000000000000000000000000000000000000000000000000000000
0000000000000000000000000
      .00        1 .
   150.00        2 .  000000000000000000000000000000000000000000000000000000
      .00        2 .
   120.00        3 .  000000000000000000000000000000000000000000
      .00        3 .
    87.00        4 .  0000000000000000000000000000
      .00        4 .
    45.00        5 .  000000000000000

 Stem width:         1
 Each leaf:        3 case(s)
```

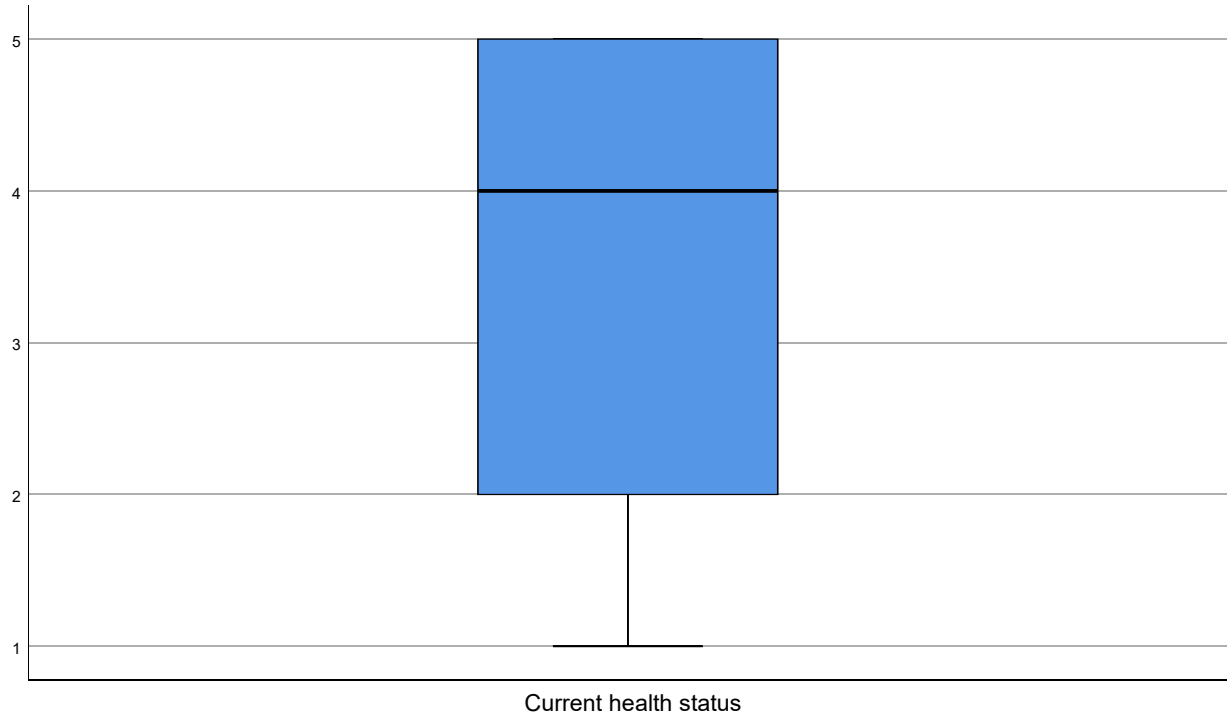
Five Number Summary: Numeric Variables



Current health status

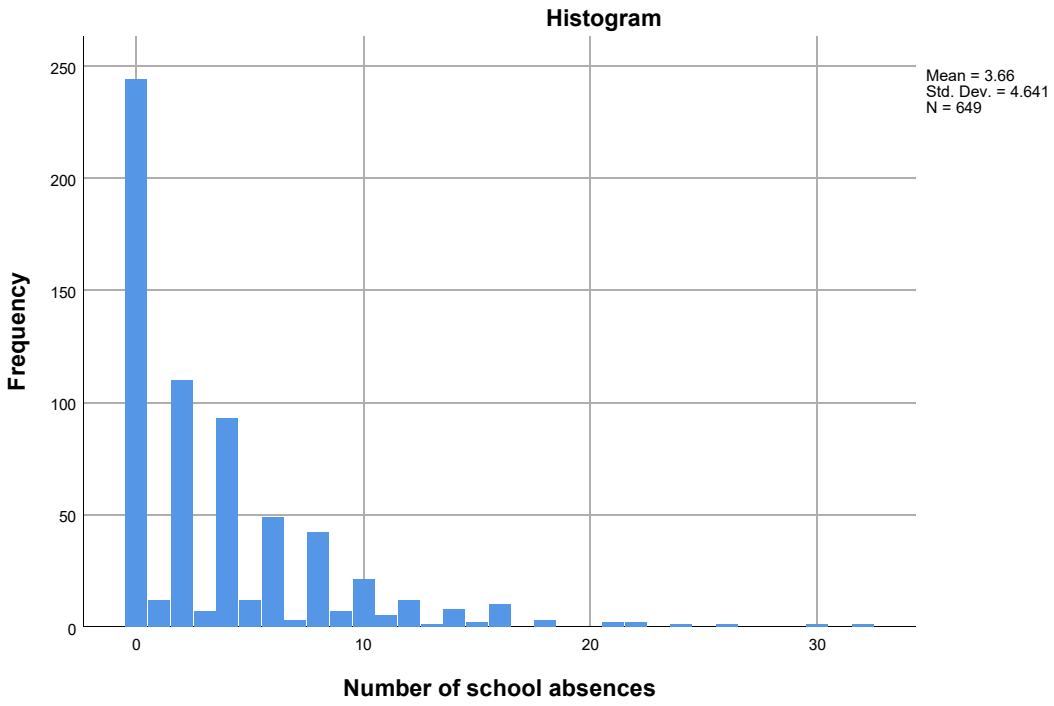


```
Current health status Stem-and-Leaf Plot

 Frequency    Stem &  Leaf

    90.00        1 .  000000000000000000000000000000
      .00        1 .
    78.00        2 .  000000000000000000000000
      .00        2 .
   124.00        3 .  0000000000000000000000000000000000000000
      .00        3 .
   108.00        4 .  000000000000000000000000000000
      .00        4 .
   249.00        5 .  000000000000000000000000000000000000000000000000000000000000000000000000000
000000000000000000000000000

 Stem width:         1
 Each leaf:        3 case(s)
```



Number of school absences

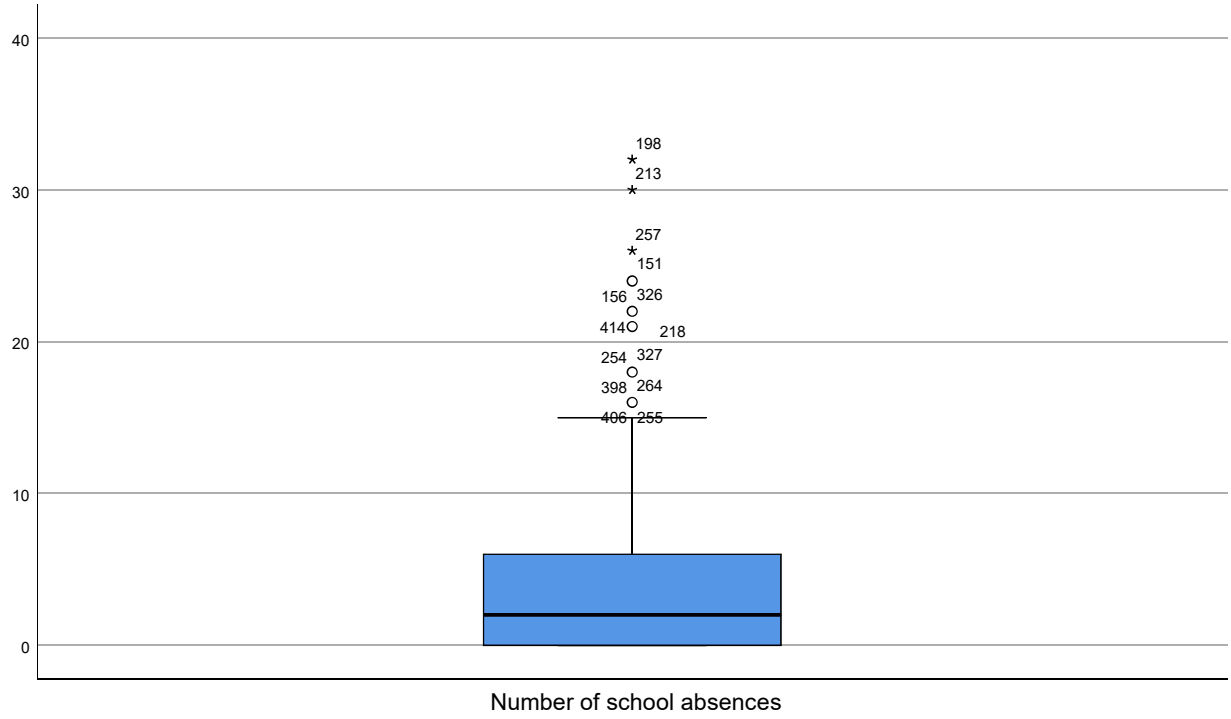
Five Number Summary: Numeric Variables



Number of school absences Stem-and-Leaf Plot

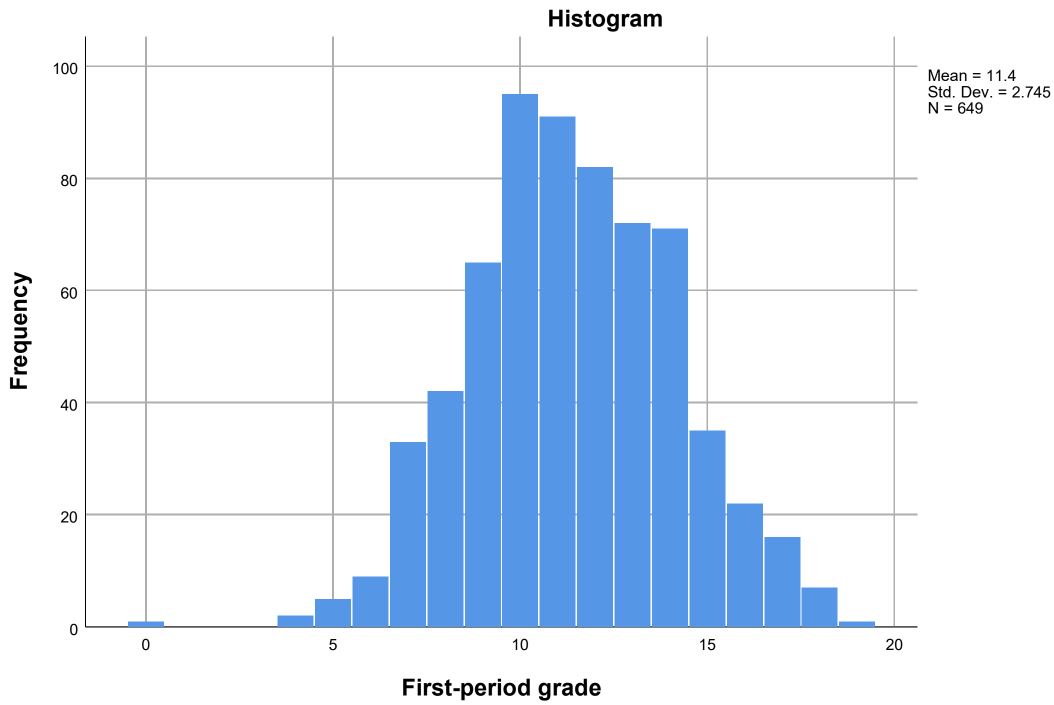
Frequency	Stem &	Leaf
244.00	0 .	00000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000
12.00	1 .	0000
110.00	2 .	00000000000000000000000000000000000000
7.00	3 .	00
93.00	4 .	000000000000000000000000000000000
12.00	5 .	0000
49.00	6 .	00000000000000000
3.00	7 .	0
42.00	8 .	00000000000000
7.00	9 .	00
21.00	10 .	0000000
5.00	11 .	00
12.00	12 .	0000
1.00	13 .	&
8.00	14 .	000

```
    2.00       15 .  0
   21.00 Extremes    (>=16.0)

Stem width:         1
Each leaf:        3 case(s)


& denotes fractional leaves.
```



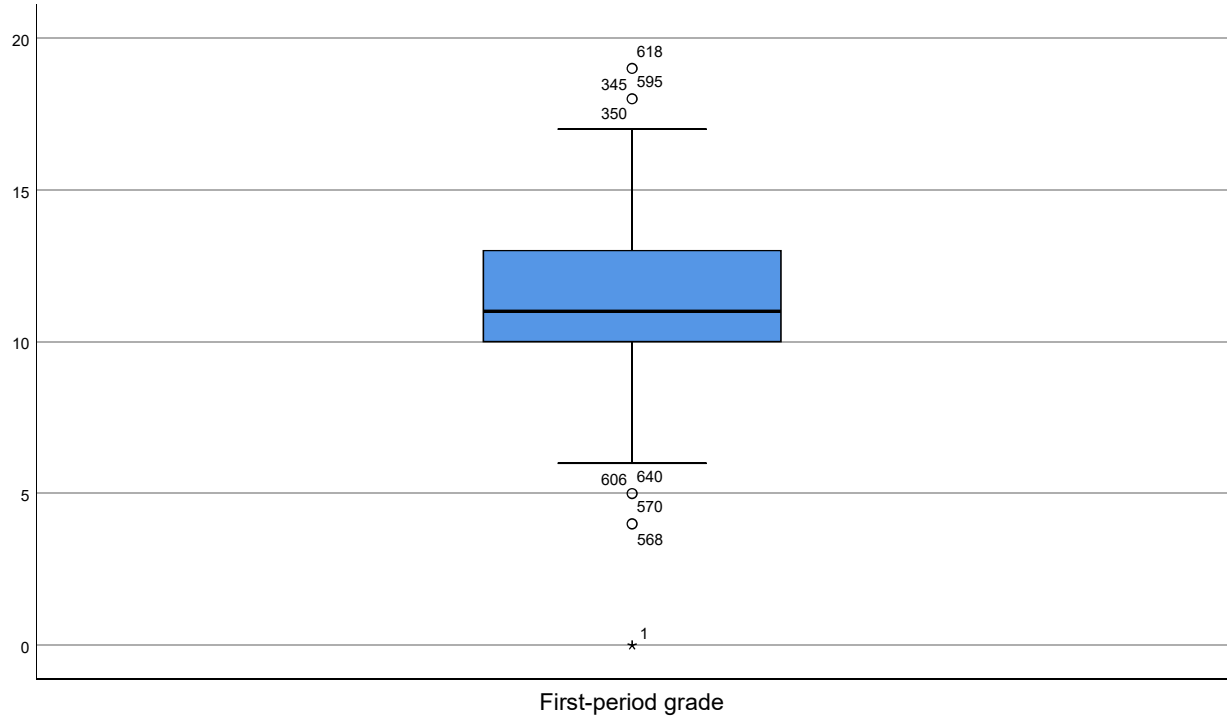
First-period grade

Five Number Summary: Numeric Variables

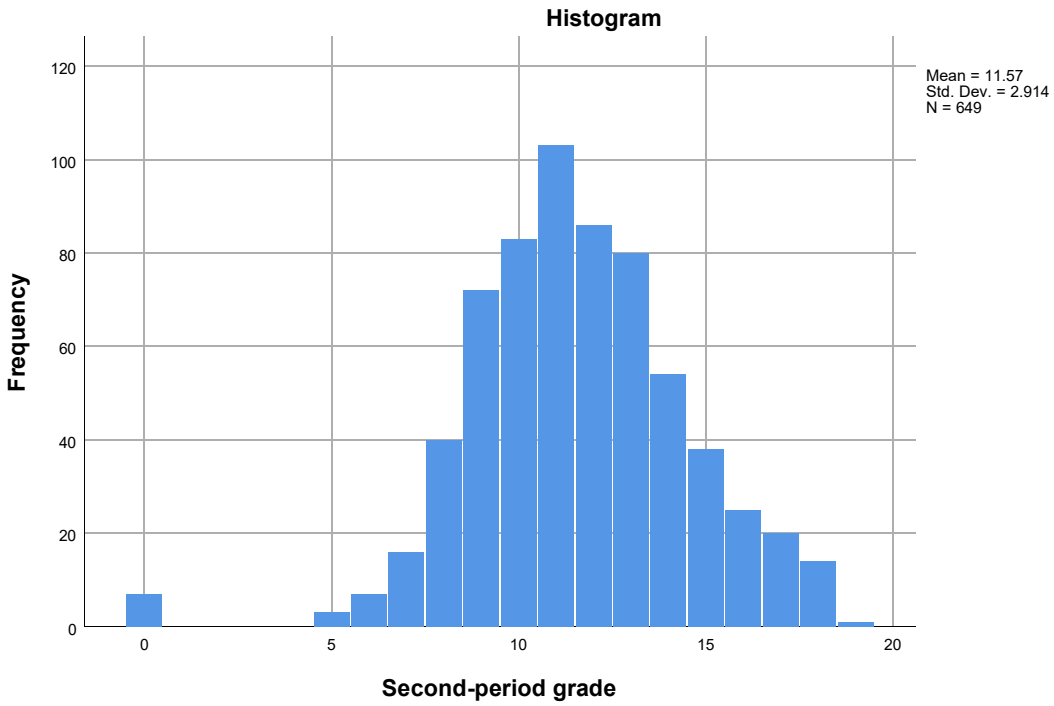



```
First-period grade Stem-and-Leaf Plot

 Frequency    Stem &  Leaf

     8.00 Extremes    (=<5.0)
     9.00        6 .  000000000
    33.00        7 .  000000000000000000000000000000000
    42.00        8 .  000000000000000000000000000000000000000000
    65.00        9 .  00000000000000000000000000000000000000000000000000000000
000000000
    95.00       10 .  00000000000000000000000000000000000000000000000000000000
000000000000000000000000000000000000000
    91.00       11 .  00000000000000000000000000000000000000000000000000000000
00000000000000000000000000000000000
    82.00       12 .  00000000000000000000000000000000000000000000000000000000
00000000000000000000000000
    72.00       13 .  00000000000000000000000000000000000000000000000000000000
0000000000000000
    71.00       14 .  00000000000000000000000000000000000000000000000000000000
000000000000000
```

```
   35.00       15 .  000000000000000000000000000000000000
   22.00       16 .  0000000000000000000000
   16.00       17 .  00000000000000000
    8.00 Extremes    (>=18.0)

Stem width:         1
Each leaf:        1 case(s)
```



Second-period grade



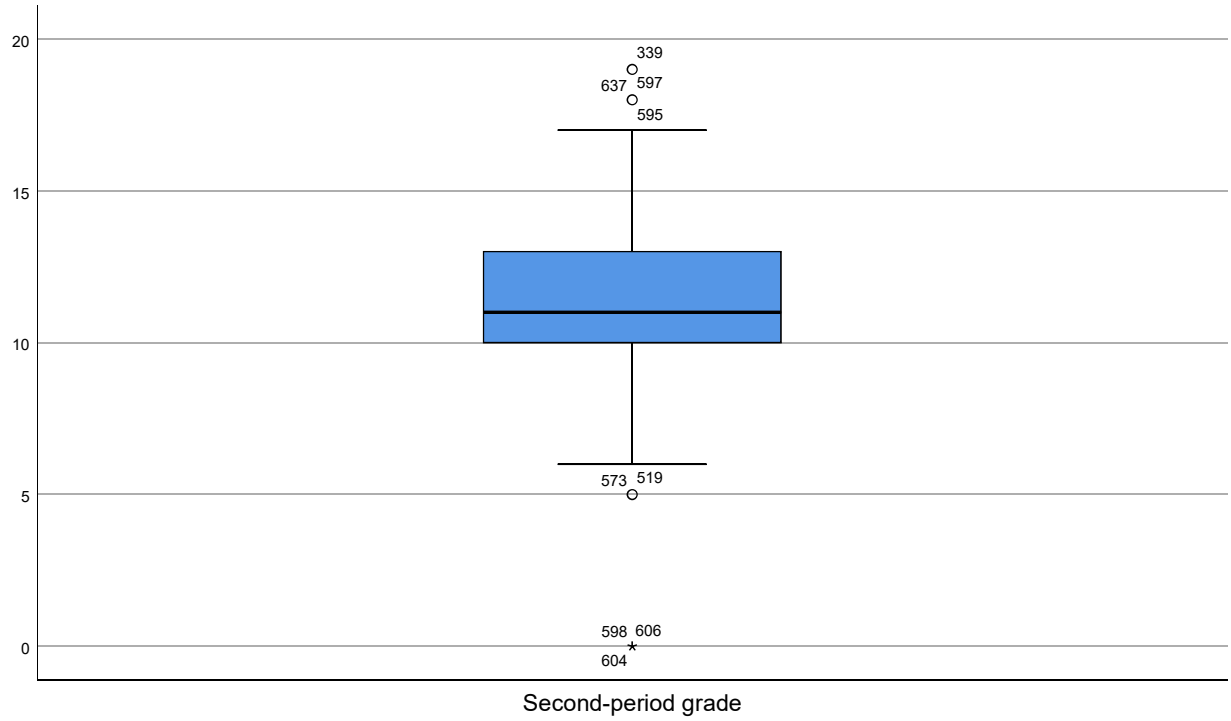
Second-period grade Stem-and-Leaf Plot

Frequency	Stem &	Leaf
10.00	Extremes	(=<5.0)
7.00	6 .	000
16.00	7 .	00000000
40.00	8 .	0000000000000000000
72.00	9 .	000000000000000000000000000000000000
83.00	10 .	00000000000000000000000000000000000000000
103.00	11 .	0000000000000000000000000000000000000000000000000000
86.00	12 .	00000000000000000000000000000000000000000
80.00	13 .	0000000000000000000000000000000000000000
54.00	14 .	000000000000000000000000000
38.00	15 .	00000000000000000000
25.00	16 .	0000000000000
20.00	17 .	00000000000
15.00	Extremes	(>=18.0)

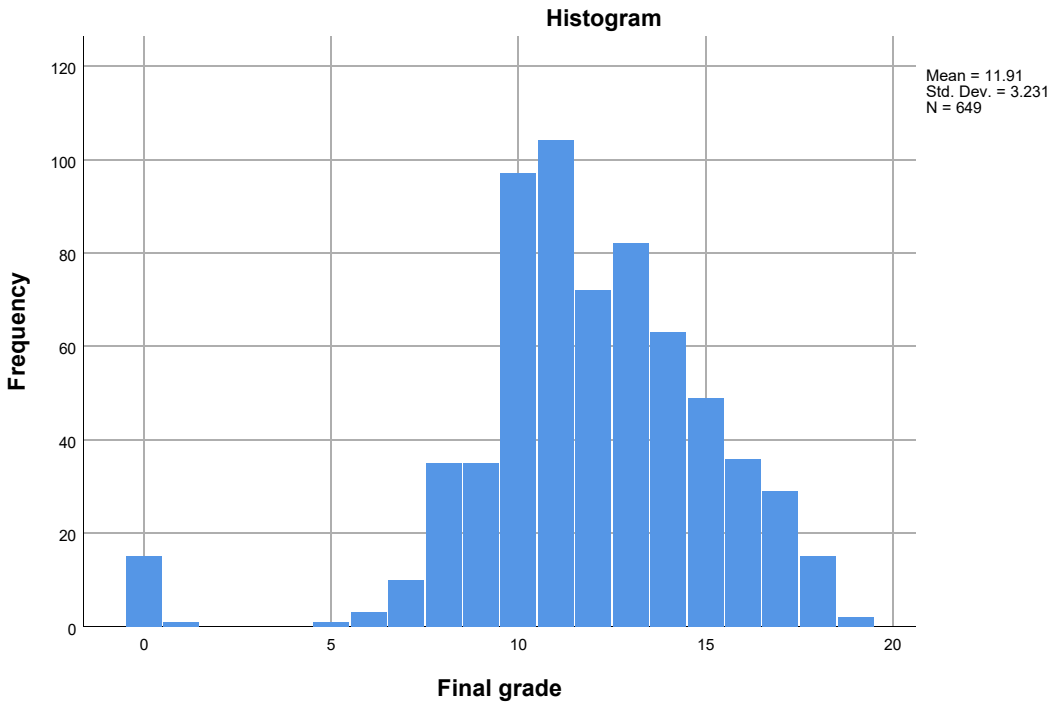
Stem width: 1

Five Number Summary: Numeric Variables

```
Each leaf:        2 case(s)
```



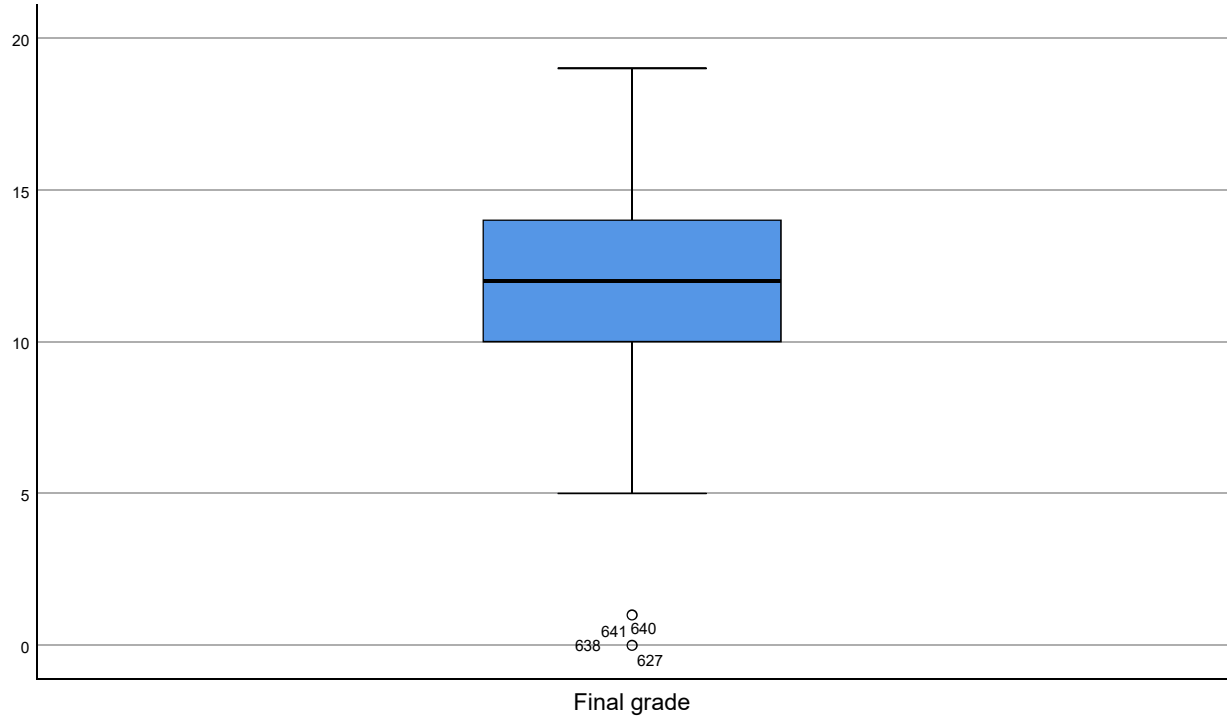
Final grade



Final grade Stem-and-Leaf Plot

Frequency	Stem &	Leaf
16.00	Extremes	(=<1.0)
1.00	5 .	&
3.00	6 .	0
10.00	7 .	00000
35.00	8 .	00000000000000000
35.00	9 .	00000000000000000
97.00	10 .	00000000000000000000000000000000000000000000000
104.00	11 .	000000000000000000000000000000000000000000000000000
72.00	12 .	000000000000000000000000000000000
82.00	13 .	0000000000000000000000000000000000
63.00	14 .	00000000000000000000000000000
49.00	15 .	0000000000000000000000
36.00	16 .	000000000000000000
29.00	17 .	00000000000000
15.00	18 .	0000000
2.00	19 .	0

```
 Stem width:         1
 Each leaf:        2 case(s)


 & denotes fractional leaves.
```




```
 877  0 M>
* ------------------------------------------------------------.
 878  0 M>  * ------------------------------------------------------------.
* 5. Grade-focused five-number summary for G1, G2 and G3.
 879  0 M>  * 5. Grade-focused five-number summary for G1, G2 and G3.
* ------------------------------------------------------------.
 880  0 M>  * ------------------------------------------------------------.

 881  0 M>
TITLE "Five Number Summary: G1, G2 and G3".
 882  0 M>  TITLE "Five Number Summary: G1, G2 and G3".
```

```
 883  0 M>
EXAMINE VARIABLES=G1 G2 G3
 884  0 M>  EXAMINE VARIABLES=G1 G2 G3
  /PLOT BOXPLOT HISTOGRAM
 885  0 M>    /PLOT BOXPLOT HISTOGRAM
  /COMPARE GROUPS
 886  0 M>    /COMPARE GROUPS
  /STATISTICS DESCRIPTIVES EXTREME
 887  0 M>    /STATISTICS DESCRIPTIVES EXTREME
  /PERCENTILES(25,50,75) HAVERAGE
 888  0 M>    /PERCENTILES(25,50,75) HAVERAGE
  /CINTERVAL 95
 889  0 M>    /CINTERVAL 95
  /MISSING LISTWISE
 890  0 M>    /MISSING LISTWISE
  /NOTOTAL.
 891  0 M>    /NOTOTAL.
```

Explore

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
G1	649	100.0%	0	0.0%	649	100.0%
G2	649	100.0%	0	0.0%	649	100.0%
G3	649	100.0%	0	0.0%	649	100.0%

Five Number Summary: G1, G2 and G3

Descriptives

			Statistic	Std. Error
G1	Mean		11.40	.108
	95% Confidence Interval for Mean	Lower Bound	11.19	
		Upper Bound	11.61	
	5% Trimmed Mean		11.39	
	Median		11.00	
	Variance		7.536	
	Std. Deviation		2.745	
	Minimum		0	
	Maximum		19	
	Range		19	
	Interquartile Range		3	
	Skewness		-.003	.096
	Kurtosis		.037	.192
G2	Mean		11.57	.114
	95% Confidence Interval for Mean	Lower Bound	11.35	
		Upper Bound	11.79	
	5% Trimmed Mean		11.60	
	Median		11.00	
	Variance		8.489	
	Std. Deviation		2.914	
	Minimum		0	
	Maximum		19	
	Range		19	
	Interquartile Range		3	
	Skewness		-.360	.096
	Kurtosis		1.662	.192
G3	Mean		11.91	.127
	95% Confidence Interval for Mean	Lower Bound	11.66	
		Upper Bound	12.16	
	5% Trimmed Mean		12.06	
	Median		12.00	
	Variance		10.437	
	Std. Deviation		3.231	

Five Number Summary: G1, G2 and G3

Descriptives

		Statistic	Std. Error
	Minimum	0	
	Maximum	19	
	Range	19	
	Interquartile Range	4	
	Skewness	-.913	.096
	Kurtosis	2.712	.192

Percentiles

		Percentiles		
		25	50	75
Weighted Average (Definition 1)	G1	10.00	11.00	13.00
	G2	10.00	11.00	13.00
	G3	10.00	12.00	14.00
Tukey's Hinges	G1	10.00	11.00	13.00
	G2	10.00	11.00	13.00
	G3	10.00	12.00	14.00

Five Number Summary: G1, G2 and G3

Extreme Values

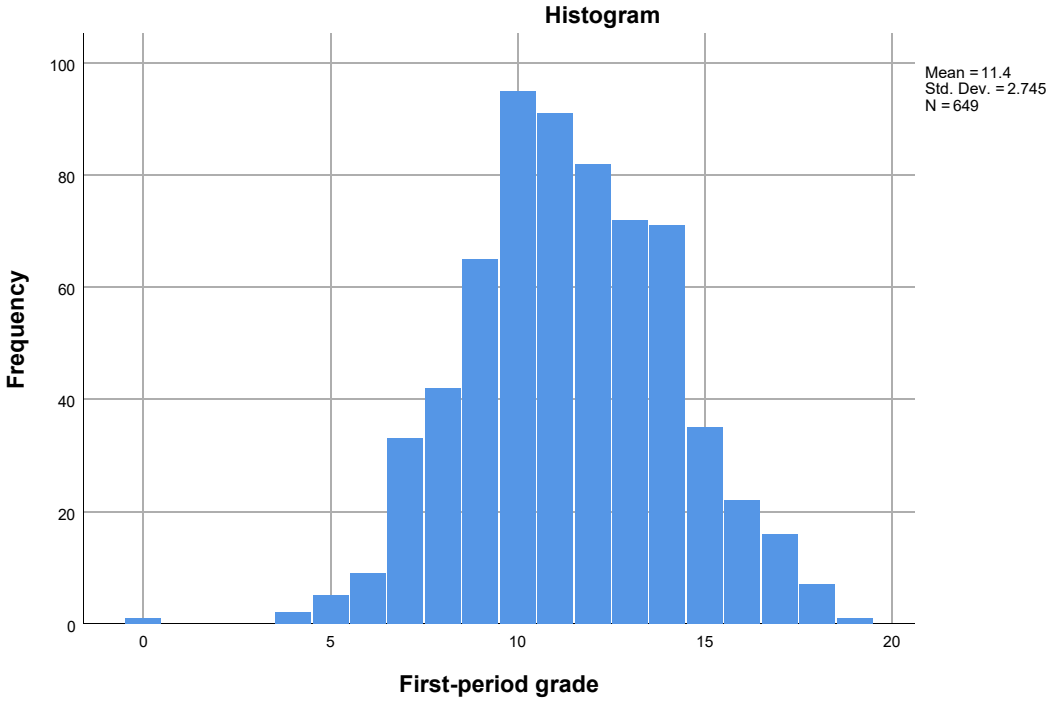
			Case Number	Value
G1	Highest	1	618	19
		2	114	18
		3	333	18
		4	339	18
		5	345	18[a]
	Lowest	1	1	0
		2	570	4
		3	568	4
		4	640	5
		5	606	5[b]
G2	Highest	1	339	19
		2	197	18
		3	241	18
		4	333	18
		5	338	18[a]
	Lowest	1	611	0
		2	606	0
		3	604	0
		4	598	0
		5	568	0[c]
G3	Highest	1	339	19
		2	637	19
		3	114	18
		4	182	18
		5	186	18[a]
	Lowest	1	641	0
		2	640	0
		3	638	0
		4	627	0
		5	611	0[c]

a. Only a partial list of cases with the value 18 are shown in the table of upper extremes.

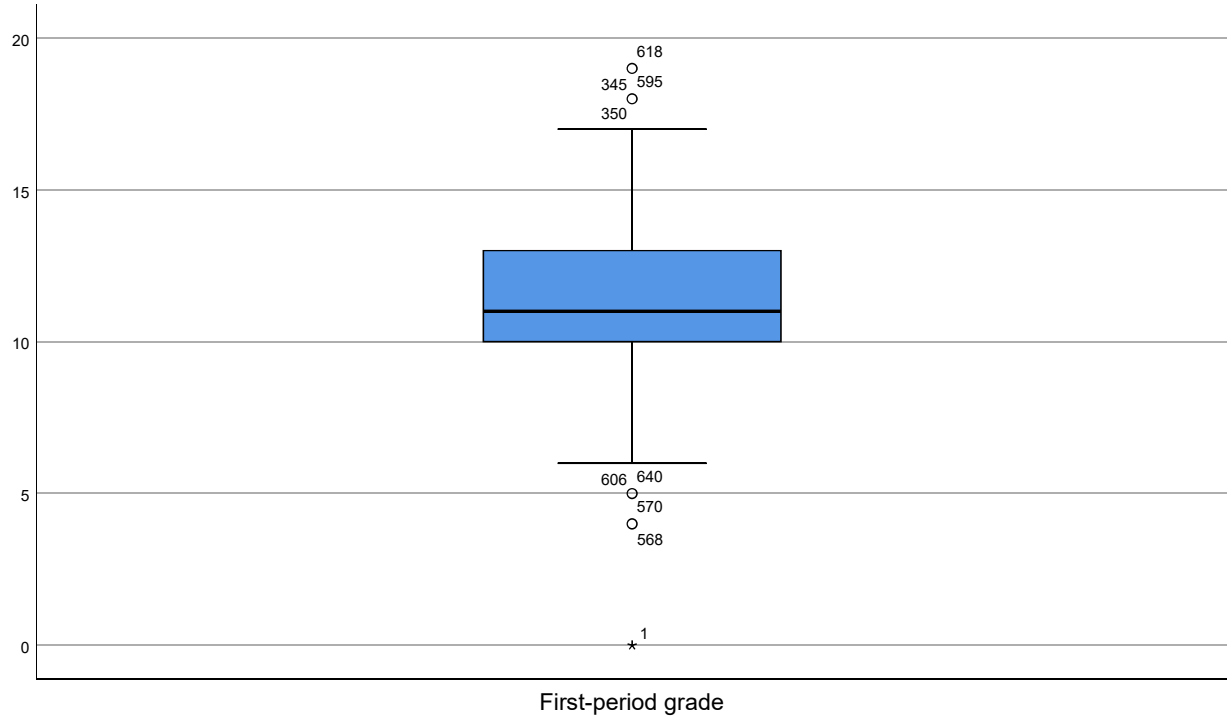
b.

c. Only a partial list of cases with the value 0 are shown in the table of lower extremes.

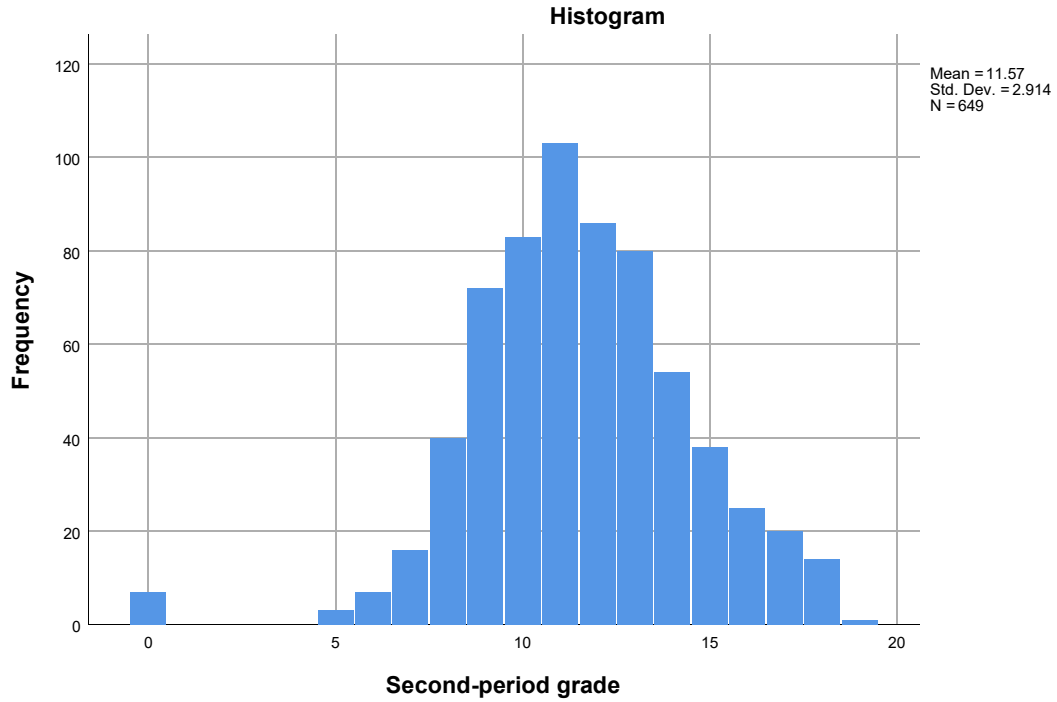
First-period grade



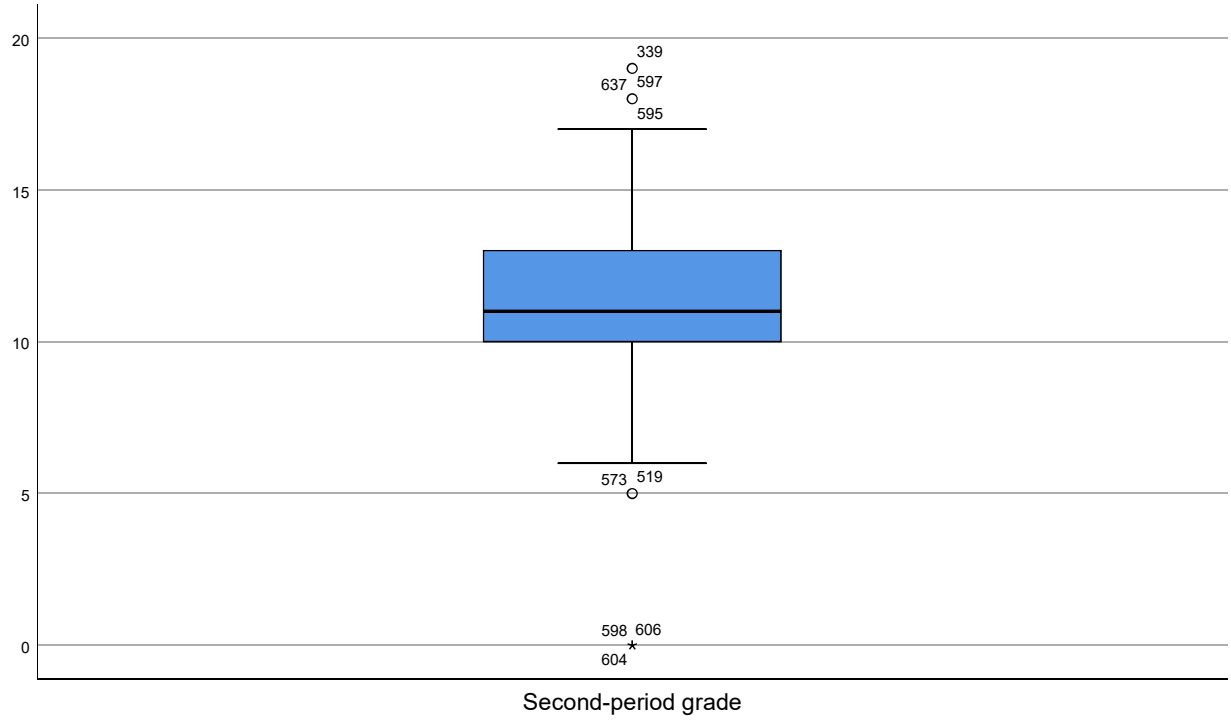
Five Number Summary: G1, G2 and G3



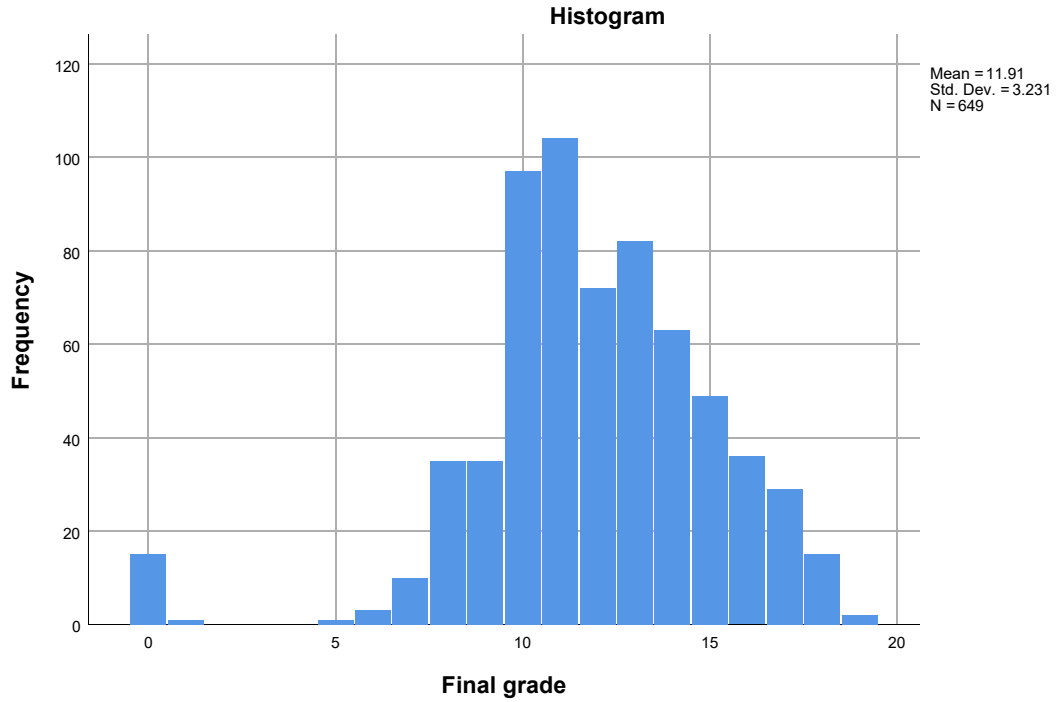
Second-period grade



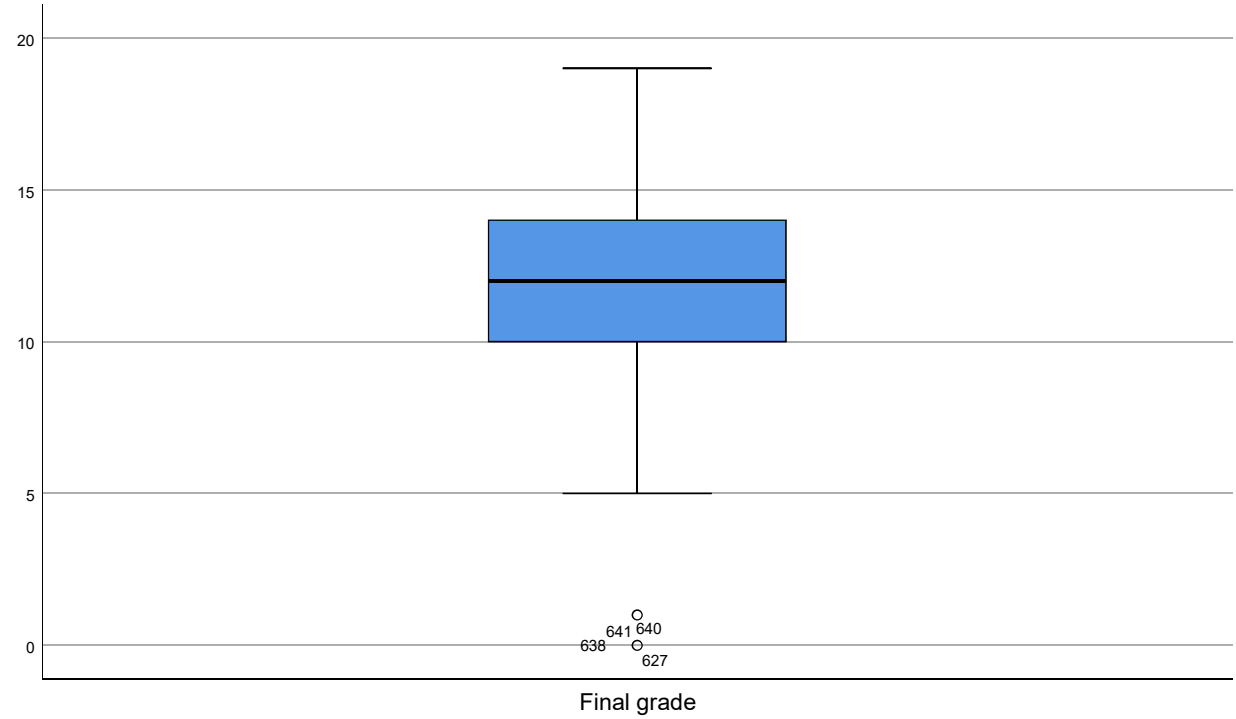
Five Number Summary: G1, G2 and G3



Final grade



Five Number Summary: G1, G2 and G3




```
 892  0 M>
* ------------------------------------------------------------.
 893  0 M>  * ------------------------------------------------------------.
* 6. G3 five-number summary by school.
 894  0 M>  * 6. G3 five-number summary by school.
* ------------------------------------------------------------.
 895  0 M>  * ------------------------------------------------------------.

 896  0 M>
TITLE "Five Number Summary: G3 by School".
 897  0 M>  TITLE "Five Number Summary: G3 by School".
```

```
 898  0 M>
EXAMINE VARIABLES=G3 BY school
 899  0 M>  EXAMINE VARIABLES=G3 BY school
  /PLOT BOXPLOT
 900  0 M>    /PLOT BOXPLOT
  /COMPARE GROUPS
 901  0 M>    /COMPARE GROUPS
  /STATISTICS DESCRIPTIVES EXTREME
 902  0 M>    /STATISTICS DESCRIPTIVES EXTREME
  /PERCENTILES(25,50,75) HAVERAGE
 903  0 M>    /PERCENTILES(25,50,75) HAVERAGE
  /CINTERVAL 95
 904  0 M>    /CINTERVAL 95
  /MISSING LISTWISE
 905  0 M>    /MISSING LISTWISE
  /NOTOTAL.
 906  0 M>    /NOTOTAL.
```

Explore

Student school

Case Processing Summary

		Cases					
		Valid		Missing		Total	
	school	N	Percent	N	Percent	N	Percent
G3	GP	423	100.0%	0	0.0%	423	100.0%
	MS	226	100.0%	0	0.0%	226	100.0%

Five Number Summary: G3 by School

Descriptives

	school			Statistic	Std. Error
G3	GP	Mean		12.58	.128
		95% Confidence Interval for Mean	Lower Bound	12.33	
			Upper Bound	12.83	
		5% Trimmed Mean		12.62	
		Median		13.00	
		Variance		6.894	
		Std. Deviation		2.626	
		Minimum		0	
		Maximum		19	
		Range		19	
		Interquartile Range		3	
		Skewness		-.336	.119
		Kurtosis		1.388	.237
	MS	Mean		10.65	.255
		95% Confidence Interval for Mean	Lower Bound	10.15	
			Upper Bound	11.15	
		5% Trimmed Mean		10.85	
		Median		11.00	
		Variance		14.699	
		Std. Deviation		3.834	
		Minimum		0	
		Maximum		19	
		Range		19	
		Interquartile Range		4	
		Skewness		-.828	.162
		Kurtosis		1.778	.322

Five Number Summary: G3 by School

Percentiles

			Percentiles		
		school	25	50	75
Weighted Average (Definition 1)	G3	GP	11.00	13.00	14.00
		MS	9.00	11.00	13.00
Tukey's Hinges	G3	GP	11.00	13.00	14.00
		MS	9.00	11.00	13.00

Extreme Values

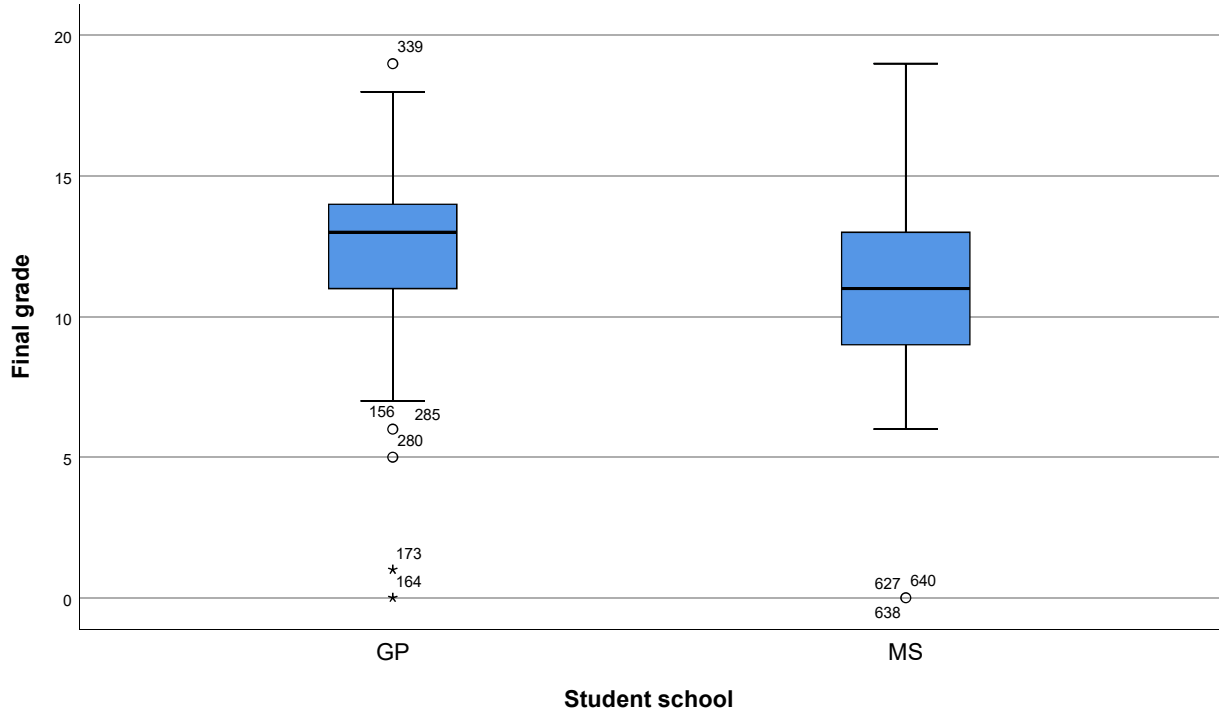
	school			Case Number	Value
G3	GP	Highest	1	339	19
			2	114	18
			3	182	18
			4	186	18
			5	315	18[a]
		Lowest	1	164	0
			2	173	1
			3	280	5
			4	285	6
			5	156	6
	MS	Highest	1	637	19
			2	510	18
			3	550	18
			4	595	18
			5	597	18[a]
		Lowest	1	641	0
			2	640	0
			3	638	0
			4	627	0
			5	611	0[b]

a. Only a partial list of cases with the value 18 are shown in the table of upper extremes.

b. Only a partial list of cases with the value 0 are shown in the table of lower extremes.

Five Number Summary: G3 by School

Final grade




```
 907  0 M>
* ------------------------------------------------------------.
 908  0 M>  * ------------------------------------------------------------.
* 7. G3 five-number summary by sex.
 909  0 M>  * 7. G3 five-number summary by sex.
* ------------------------------------------------------------.
 910  0 M>  * ------------------------------------------------------------.

 911  0 M>
TITLE "Five Number Summary: G3 by Sex".
 912  0 M>  TITLE "Five Number Summary: G3 by Sex".
```

```
 913  0 M>
EXAMINE VARIABLES=G3 BY sex
 914  0 M>  EXAMINE VARIABLES=G3 BY sex
  /PLOT BOXPLOT
 915  0 M>    /PLOT BOXPLOT
  /COMPARE GROUPS
 916  0 M>    /COMPARE GROUPS
  /STATISTICS DESCRIPTIVES EXTREME
 917  0 M>    /STATISTICS DESCRIPTIVES EXTREME
  /PERCENTILES(25,50,75) HAVERAGE
 918  0 M>    /PERCENTILES(25,50,75) HAVERAGE
  /CINTERVAL 95
 919  0 M>    /CINTERVAL 95
  /MISSING LISTWISE
 920  0 M>    /MISSING LISTWISE
  /NOTOTAL.
 921  0 M>    /NOTOTAL.
```

Explore

Student sex

Case Processing Summary

		Cases					
		Valid		Missing		Total	
	sex	N	Percent	N	Percent	N	Percent
G3	Female	383	100.0%	0	0.0%	383	100.0%
	Male	266	100.0%	0	0.0%	266	100.0%

Five Number Summary: G3 by Sex

Descriptives

	sex			Statistic	Std. Error
G3	Female	Mean		12.25	.160
		95% Confidence Interval for Mean	Lower Bound	11.94	
			Upper Bound	12.57	
		5% Trimmed Mean		12.37	
		Median		12.00	
		Variance		9.760	
		Std. Deviation		3.124	
		Minimum		0	
		Maximum		19	
		Range		19	
		Interquartile Range		4	
		Skewness		-.857	.125
		Kurtosis		2.683	.249
	Male	Mean		11.41	.204
		95% Confidence Interval for Mean	Lower Bound	11.01	
			Upper Bound	11.81	
		5% Trimmed Mean		11.60	
		Median		11.00	
		Variance		11.027	
		Std. Deviation		3.321	
		Minimum		0	
		Maximum		19	
		Range		19	
		Interquartile Range		3	
		Skewness		-.980	.149
		Kurtosis		2.803	.298

Five Number Summary: G3 by Sex

Percentiles

			Percentiles		
		sex	25	50	75
Weighted Average (Definition 1)	G3	Female	10.00	12.00	14.00
		Male	10.00	11.00	13.00
Tukey's Hinges	G3	Female	10.00	12.00	14.00
		Male	10.00	11.00	13.00

Extreme Values

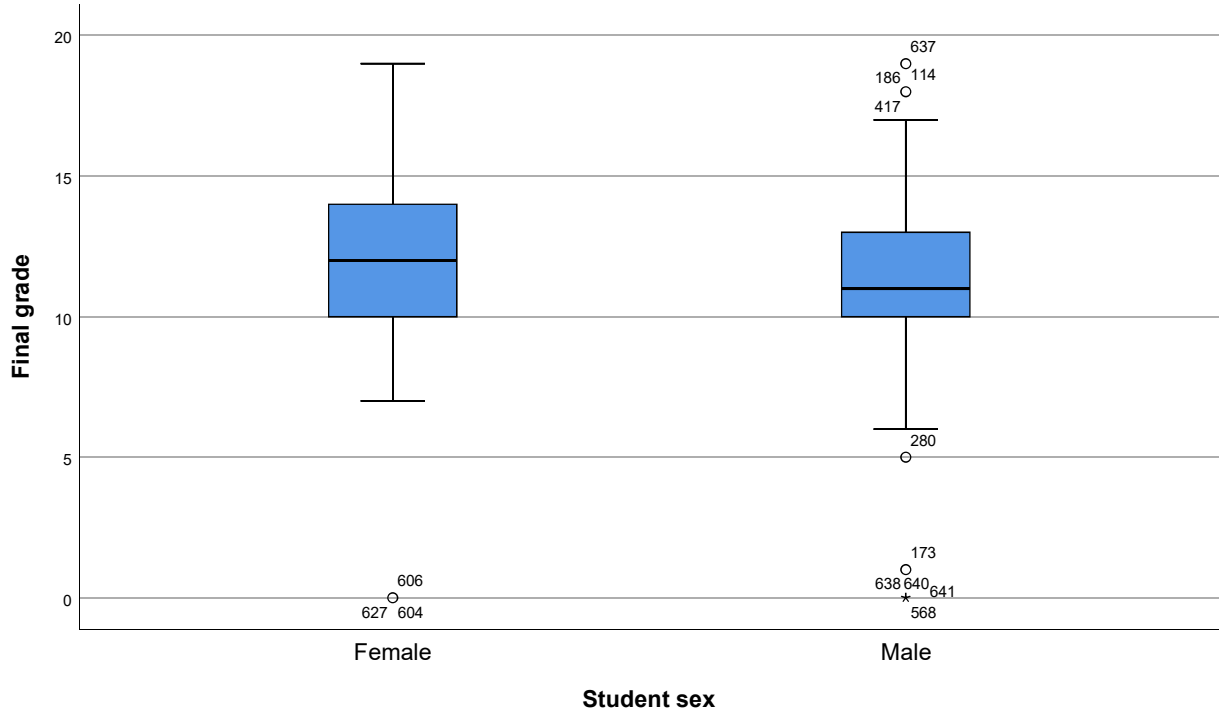
	sex			Case Number	Value
G3	Female	Highest	1	339	19
			2	182	18
			3	328	18
			4	333	18
			5	338	18[a]
		Lowest	1	627	0
			2	611	0
			3	606	0
			4	604	0
			5	598	0[b]
	Male	Highest	1	637	19
			2	114	18
			3	186	18
			4	315	18
			5	417	18
		Lowest	1	641	0
			2	640	0
			3	638	0
			4	568	0
			5	564	0[b]

a. Only a partial list of cases with the value 18 are shown in the table of upper extremes.

b. Only a partial list of cases with the value 0 are shown in the table of lower extremes.

Five Number Summary: G3 by Sex

Final grade




```
 922  0 M>
* ------------------------------------------------------------.
 923  0 M>  * ------------------------------------------------------------.
* 8. G3 five-number summary by study-time group.
 924  0 M>  * 8. G3 five-number summary by study-time group.
* ------------------------------------------------------------.
 925  0 M>  * ------------------------------------------------------------.

 926  0 M>
TITLE "Five Number Summary: G3 by Study Time".
 927  0 M>  TITLE "Five Number Summary: G3 by Study Time".
```

```
 928  0 M>
EXAMINE VARIABLES=G3 BY studytime_group
 929  0 M>  EXAMINE VARIABLES=G3 BY studytime_group
  /PLOT BOXPLOT
 930  0 M>    /PLOT BOXPLOT
  /COMPARE GROUPS
 931  0 M>    /COMPARE GROUPS
  /STATISTICS DESCRIPTIVES EXTREME
 932  0 M>    /STATISTICS DESCRIPTIVES EXTREME
  /PERCENTILES(25,50,75) HAVERAGE
 933  0 M>    /PERCENTILES(25,50,75) HAVERAGE
  /CINTERVAL 95
 934  0 M>    /CINTERVAL 95
  /MISSING LISTWISE
 935  0 M>    /MISSING LISTWISE
  /NOTOTAL.
 936  0 M>    /NOTOTAL.
```

Explore

Warnings

Text: studytime_group Command: EXAMINE
This procedure cannot use string variables longer than 8 bytes.
The values will be truncated.

Study-time group

Case Processing Summary

		Cases					
		Valid		Missing		Total	
	studytime_group	N	Percent	N	Percent	N	Percent
G3	<2 hours	212	100.0%	0	0.0%	212	100.0%
	>10 hour	35	100.0%	0	0.0%	35	100.0%
	2 to 5 h	305	100.0%	0	0.0%	305	100.0%
	5 to 10	97	100.0%	0	0.0%	97	100.0%

Five Number Summary: G3 by Study Time

Descriptives

	studytime_group			Statistic	Std. Error
G3	<2 hours	Mean		10.84	.221
		95% Confidence Interval for Mean	Lower Bound	10.41	
			Upper Bound	11.28	
		5% Trimmed Mean		11.04	
		Median		11.00	
		Variance		10.360	
		Std. Deviation		3.219	
		Minimum		0	
		Maximum		18	
		Range		18	
		Interquartile Range		3	
		Skewness		-1.078	.167
		Kurtosis		3.117	.333
	>10 hour	Mean		13.06	.514
		95% Confidence Interval for Mean	Lower Bound	12.01	
			Upper Bound	14.10	
		5% Trimmed Mean		13.07	
		Median		13.00	
		Variance		9.232	
		Std. Deviation		3.038	
		Minimum		6	
		Maximum		19	
		Range		13	
		Interquartile Range		4	
		Skewness		.209	.398
		Kurtosis		-.339	.778
	2 to 5 h	Mean		12.09	.186
		95% Confidence Interval for Mean	Lower Bound	11.73	
			Upper Bound	12.46	
		5% Trimmed Mean		12.25	
		Median		12.00	
		Variance		10.518	
		Std. Deviation		3.243	

Five Number Summary: G3 by Study Time

Descriptives

studytime_group			Statistic	Std. Error
	Minimum		0	
	Maximum		19	
	Range		19	
	Interquartile Range		4	
	Skewness		-1.028	.140
	Kurtosis		3.044	.278
5 to 10	Mean		13.23	.254
	95% Confidence Interval for Mean	Lower Bound	12.72	
		Upper Bound	13.73	
	5% Trimmed Mean		13.27	
	Median		13.00	
	Variance		6.261	
	Std. Deviation		2.502	
	Minimum		8	
	Maximum		18	
	Range		10	
	Interquartile Range		4	
	Skewness		-.190	.245
	Kurtosis		-.502	.485

Percentiles

			Percentiles		
		studytime_group	25	50	75
Weighted Average (Definition 1)	G3	<2 hours	10.00	11.00	13.00
		>10 hour	11.00	13.00	15.00
		2 to 5 h	10.00	12.00	14.00
		5 to 10	11.50	13.00	15.00
Tukey's Hinges	G3	<2 hours	10.00	11.00	13.00
		>10 hour	11.00	13.00	15.00
		2 to 5 h	10.00	12.00	14.00
		5 to 10	12.00	13.00	15.00

Five Number Summary: G3 by Study Time

Extreme Values

	studytime_group			Case Number	Value
G3	<2 hours	Highest	1	114	18
			2	16	17
			3	345	17
			4	357	17
			5	365	17[a]
		Lowest	1	641	0
			2	640	0
			3	638	0
			4	606	0
			5	584	0[b]
	>10 hour	Highest	1	339	19
			2	328	18
			3	350	18
			4	607	18
			5	48	17[a]
		Lowest	1	524	6
			2	503	9
			3	498	10
			4	107	10
			5	106	10[c]
	2 to 5 h	Highest	1	637	19
			2	182	18
			3	186	18
			4	315	18
			5	417	18[d]
		Lowest	1	627	0
			2	611	0
			3	604	0
			4	598	0
			5	587	0[b]
	5 to 10	Highest	1	333	18
			2	338	18

Five Number Summary: G3 by Study Time

Extreme Values

studytime_group		Case Number	Value
	3	618	18
	4	358	17
	5	360	17[a]
Lowest	1	586	8
	2	455	8
	3	454	8
	4	348	8
	5	220	8

a. Only a partial list of cases with the value 17 are shown in the table of upper extremes.

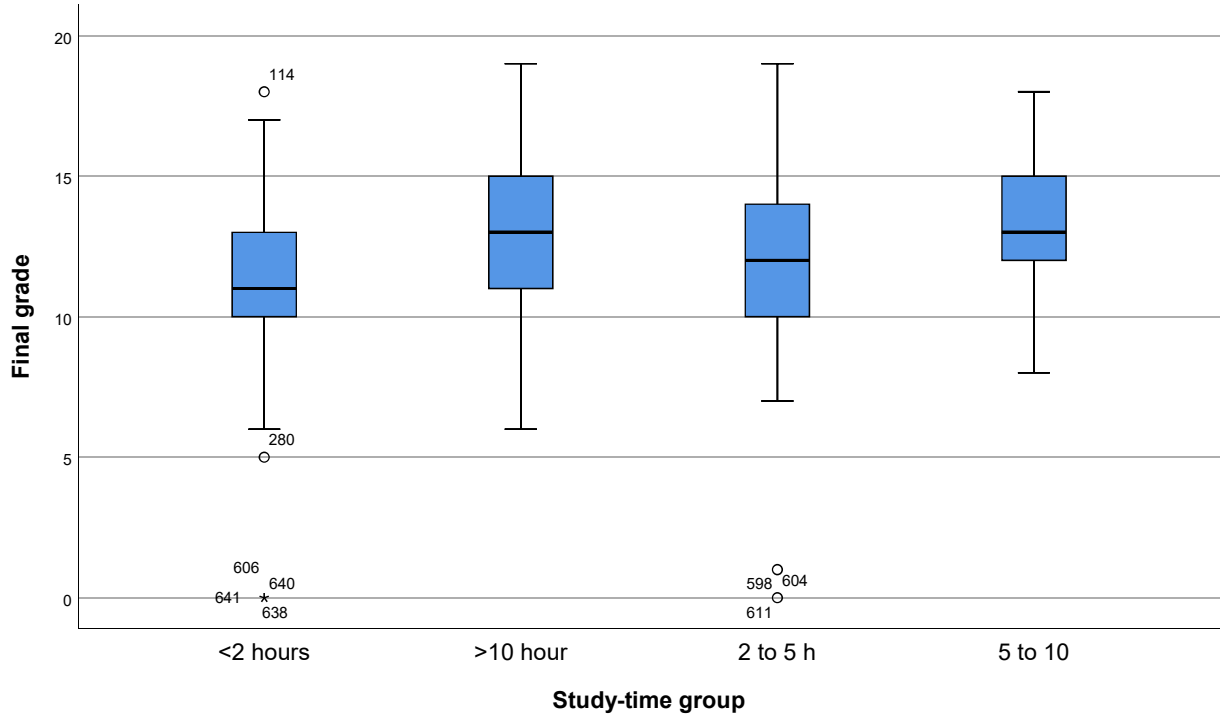
b. Only a partial list of cases with the value 0 are shown in the table of lower extremes.

c. Only a partial list of cases with the value 10 are shown in the table of lower extremes.

d. Only a partial list of cases with the value 18 are shown in the table of upper extremes.

Final grade

Five Number Summary: G3 by Study Time




```
 937   0 M>
* ------------------------------------------------------------.
 938   0 M>  * ------------------------------------------------------------.
* 9. Absences five-number summary and outlier checking.
 939   0 M>  * 9. Absences five-number summary and outlier checking.
* ------------------------------------------------------------.
 940   0 M>  * ------------------------------------------------------------.

 941   0 M>
TITLE "Five Number Summary: Absences and Outlier Checking".
 942   0 M>  TITLE "Five Number Summary: Absences and Outlier Checking".
```

```
 943   0 M>
EXAMINE VARIABLES=absences
 944   0 M>  EXAMINE VARIABLES=absences
  /PLOT BOXPLOT HISTOGRAM
 945   0 M>    /PLOT BOXPLOT HISTOGRAM
  /COMPARE GROUPS
 946   0 M>    /COMPARE GROUPS
  /STATISTICS DESCRIPTIVES EXTREME
 947   0 M>    /STATISTICS DESCRIPTIVES EXTREME
  /PERCENTILES(25,50,75) HAVERAGE
 948   0 M>    /PERCENTILES(25,50,75) HAVERAGE
  /CINTERVAL 95
 949   0 M>    /CINTERVAL 95
  /MISSING LISTWISE
 950   0 M>    /MISSING LISTWISE
  /NOTOTAL.
 951   0 M>    /NOTOTAL.
```

Explore

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
absences	649	100.0%	0	0.0%	649	100.0%

Five Number Summary: Absences and Outlier Checking

Descriptives

			Statistic	Std. Error
absences	Mean		3.66	.182
	95% Confidence Interval for Mean	Lower Bound	3.30	
		Upper Bound	4.02	
	5% Trimmed Mean		3.09	
	Median		2.00	
	Variance		21.537	
	Std. Deviation		4.641	
	Minimum		0	
	Maximum		32	
	Range		32	
	Interquartile Range		6	
	Skewness		2.021	.096
	Kurtosis		5.781	.192

Percentiles

		Percentiles		
		25	50	75
Weighted Average (Definition 1)	absences	.00	2.00	6.00
Tukey's Hinges	absences	.00	2.00	6.00

Five Number Summary: Absences and Outlier Checking

Extreme Values

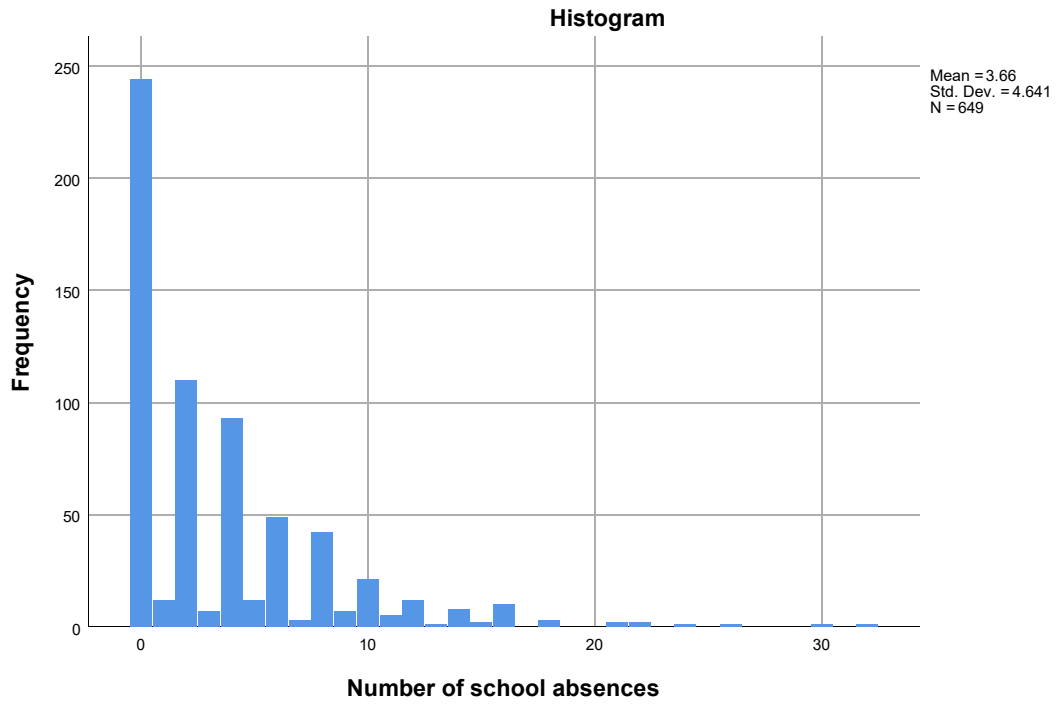
			Case Number	Value
absences	Highest	1	198	32
		2	213	30
		3	257	26
		4	151	24
		5	156	22[a]
	Lowest	1	643	0
		2	642	0
		3	641	0
		4	640	0
		5	638	0[b]

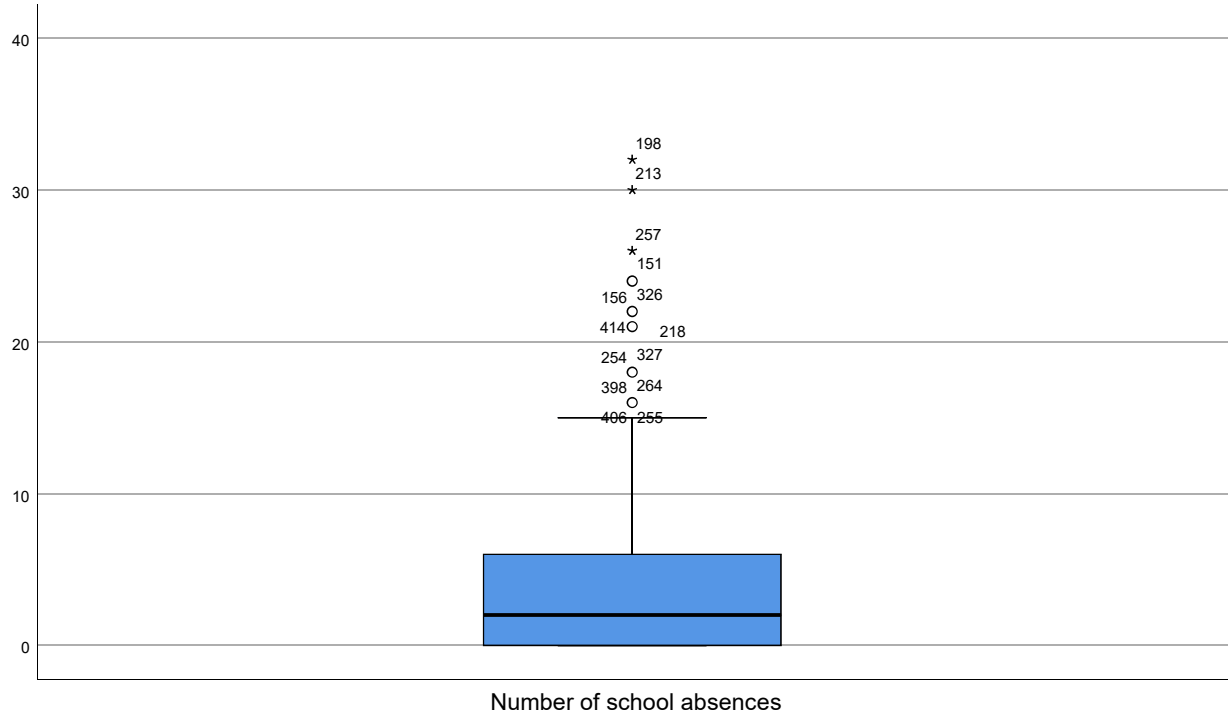
a. Only a partial list of cases with the value 22 are shown in the table of upper extremes.

b. Only a partial list of cases with the value 0 are shown in the table of lower extremes.

Number of school absences

Five Number Summary: Absences and Outlier Checking





952 0 M>

* ----------.

```
 953  0 M>  * ------------------------------------------------------------.
* 10. Absences by school for grouped outlier interpretation.
 954  0 M>  * 10. Absences by school for grouped outlier interpretation.
* ------------------------------------------------------------.
 955  0 M>  * ------------------------------------------------------------.

 956  0 M>
TITLE "Five Number Summary: Absences by School".
 957  0 M>  TITLE "Five Number Summary: Absences by School".
```

```
 958  0 M>
EXAMINE VARIABLES=absences BY school
 959  0 M>  EXAMINE VARIABLES=absences BY school
  /PLOT BOXPLOT
 960  0 M>    /PLOT BOXPLOT
  /COMPARE GROUPS
 961  0 M>    /COMPARE GROUPS
  /STATISTICS DESCRIPTIVES EXTREME
 962  0 M>    /STATISTICS DESCRIPTIVES EXTREME
  /PERCENTILES(25,50,75) HAVERAGE
 963  0 M>    /PERCENTILES(25,50,75) HAVERAGE
  /CINTERVAL 95
 964  0 M>    /CINTERVAL 95
  /MISSING LISTWISE
 965  0 M>    /MISSING LISTWISE
  /NOTOTAL.
 966  0 M>    /NOTOTAL.
```

Explore

Student school

Case Processing Summary

		Cases					
		Valid		Missing		Total	
	school	N	Percent	N	Percent	N	Percent
absences	GP	423	100.0%	0	0.0%	423	100.0%
	MS	226	100.0%	0	0.0%	226	100.0%

Five Number Summary: Absences by School

Descriptives

	school			Statistic	Std. Error
absences	GP	Mean		4.22	.252
		95% Confidence Interval for Mean	Lower Bound	3.72	
			Upper Bound	4.71	
		5% Trimmed Mean		3.60	
		Median		2.00	
		Variance		26.956	
		Std. Deviation		5.192	
		Minimum		0	
		Maximum		32	
		Range		32	
		Interquartile Range		6	
		Skewness		1.886	.119
		Kurtosis		4.573	.237
	MS	Mean		2.62	.208
		95% Confidence Interval for Mean	Lower Bound	2.21	
			Upper Bound	3.03	
		5% Trimmed Mean		2.32	
		Median		2.00	
		Variance		9.801	
		Std. Deviation		3.131	
		Minimum		0	
		Maximum		12	
		Range		12	
		Interquartile Range		4	
		Skewness		1.125	.162
		Kurtosis		.428	.322

Five Number Summary: Absences by School

Percentiles

			Percentiles		
		school	25	50	75
Weighted Average (Definition 1)	absences	GP	.00	2.00	6.00
		MS	.00	2.00	4.00
Tukey's Hinges	absences	GP	.00	2.00	6.00
		MS	.00	2.00	4.00

Extreme Values

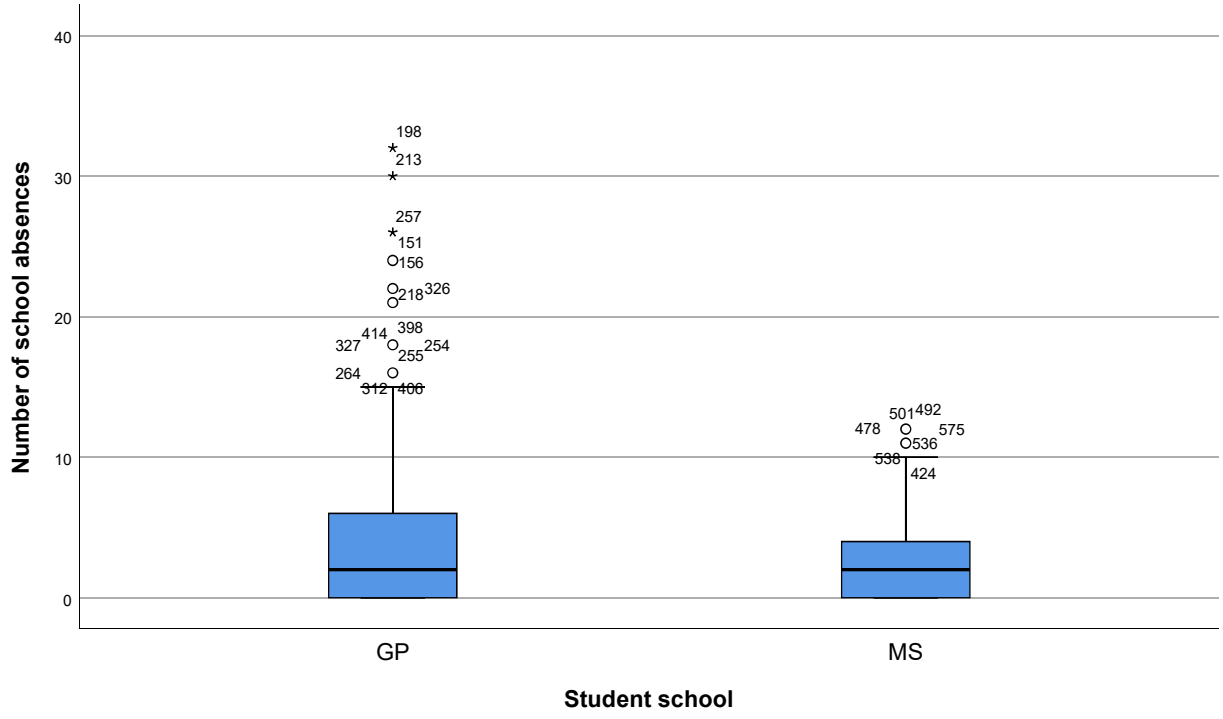
	school			Case Number	Value
absences	GP	Highest	1	198	32
			2	213	30
			3	257	26
			4	151	24
			5	156	22[a]
		Lowest	1	413	0
			2	411	0
			3	408	0
			4	403	0
			5	402	0[b]
	MS	Highest	1	492	12
			2	501	12
			3	575	12
			4	424	11
			5	478	11[c]
		Lowest	1	643	0
			2	642	0
			3	641	0
			4	640	0
			5	638	0[b]

a. Only a partial list of cases with the value 22 are shown in the table of upper extremes.

b. Only a partial list of cases with the value 0 are shown in the table of lower extremes.

c. Only a partial list of cases with the value 11 are shown in the table of upper extremes.

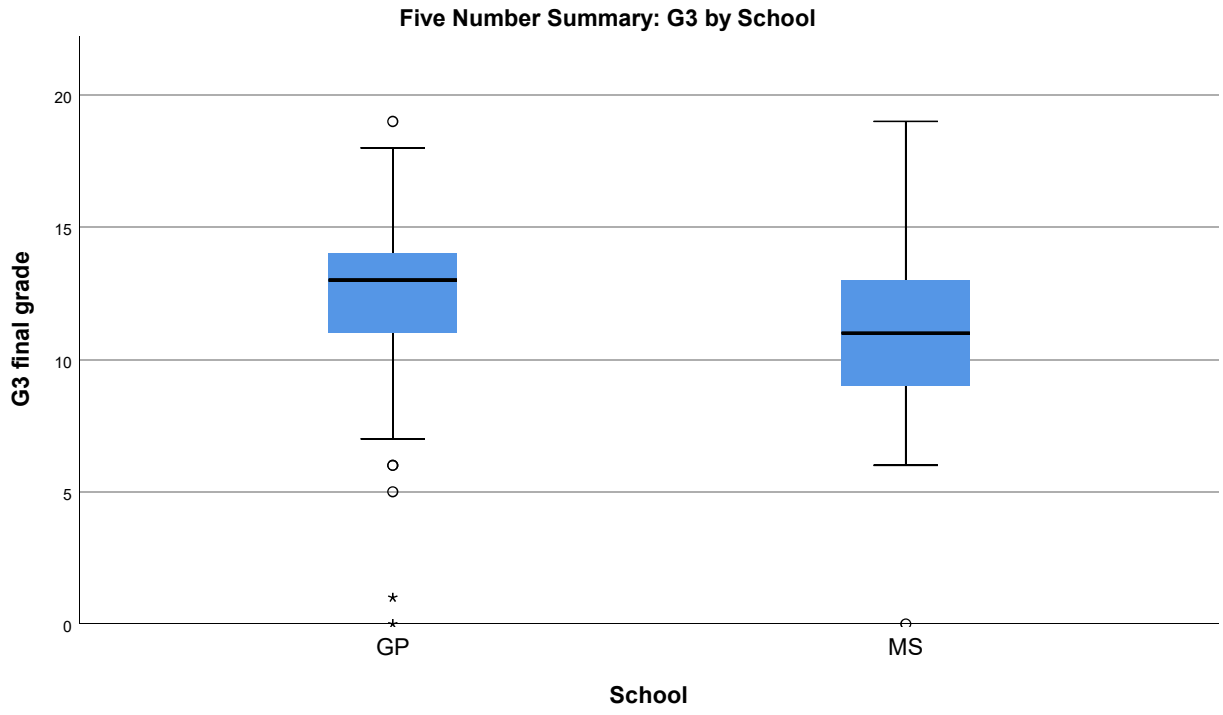
Number of school absences




```
 967  0 M>
* ------------------------------------------------------------.
 968  0 M>  * ------------------------------------------------------------.
* 11. SPSS chart builder alternatives using GPL.
 969  0 M>  * 11. SPSS chart builder alternatives using GPL.
*     These create boxplots similar to the Python outputs.
 970  0 M>  *     These create boxplots similar to the Python outputs.
* ------------------------------------------------------------.
 971  0 M>  * ------------------------------------------------------------.

 972  0 M>
TITLE "Five Number Summary: SPSS Boxplot of G3 by School".
 973  0 M>  TITLE "Five Number Summary: SPSS Boxplot of G3 by School".
```

```
 974  0 M>
GGRAPH
 975  0 M>  GGRAPH
  /GRAPHDATASET NAME="graphdataset" VARIABLES=school G3 MISSING=LISTWISE REPOR
TMISSING=NO
 976  0 M>    /GRAPHDATASET NAME="graphdataset" VARIABLES=school G3 MISSING=LI
STWISE REPORTMISSING=NO
  /GRAPHSPEC SOURCE=INLINE.
 977  0 M>    /GRAPHSPEC SOURCE=INLINE.
BEGIN GPL
  SOURCE: s=userSource(id("graphdataset"))
  DATA: school=col(source(s), name("school"), unit.category())
  DATA: G3=col(source(s), name("G3"))
  GUIDE: axis(dim(1), label("School"))
  GUIDE: axis(dim(2), label("G3 final grade"))
  GUIDE: text.title(label("Five Number Summary: G3 by School"))
  ELEMENT: schema(position(bin.quantile.letter(school*G3)))
END GPL.
```

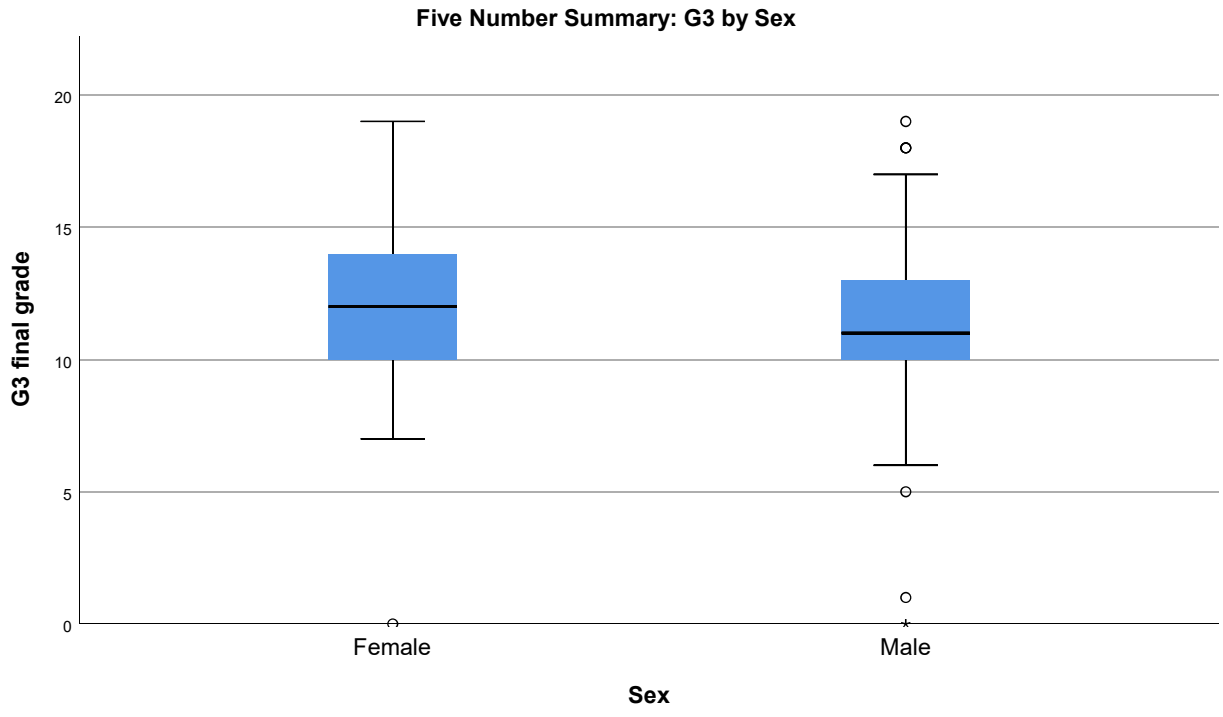
GGraph



```
 978  0 M>
TITLE "Five Number Summary: SPSS Boxplot of G3 by Sex".
 979  0 M>  TITLE "Five Number Summary: SPSS Boxplot of G3 by Sex".
```

```
 980  0 M>
GGRAPH
 981  0 M>  GGRAPH
  /GRAPHDATASET NAME="graphdataset" VARIABLES=sex G3 MISSING=LISTWISE REPORTMI
SSING=NO
 982  0 M>    /GRAPHDATASET NAME="graphdataset" VARIABLES=sex G3 MISSING=LISTW
ISE REPORTMISSING=NO
  /GRAPHSPEC SOURCE=INLINE.
 983  0 M>    /GRAPHSPEC SOURCE=INLINE.
BEGIN GPL
  SOURCE: s=userSource(id("graphdataset"))
  DATA: sex=col(source(s), name("sex"), unit.category())
  DATA: G3=col(source(s), name("G3"))
  GUIDE: axis(dim(1), label("Sex"))
  GUIDE: axis(dim(2), label("G3 final grade"))
  GUIDE: text.title(label("Five Number Summary: G3 by Sex"))
  ELEMENT: schema(position(bin.quantile.letter(sex*G3)))
END GPL.
```

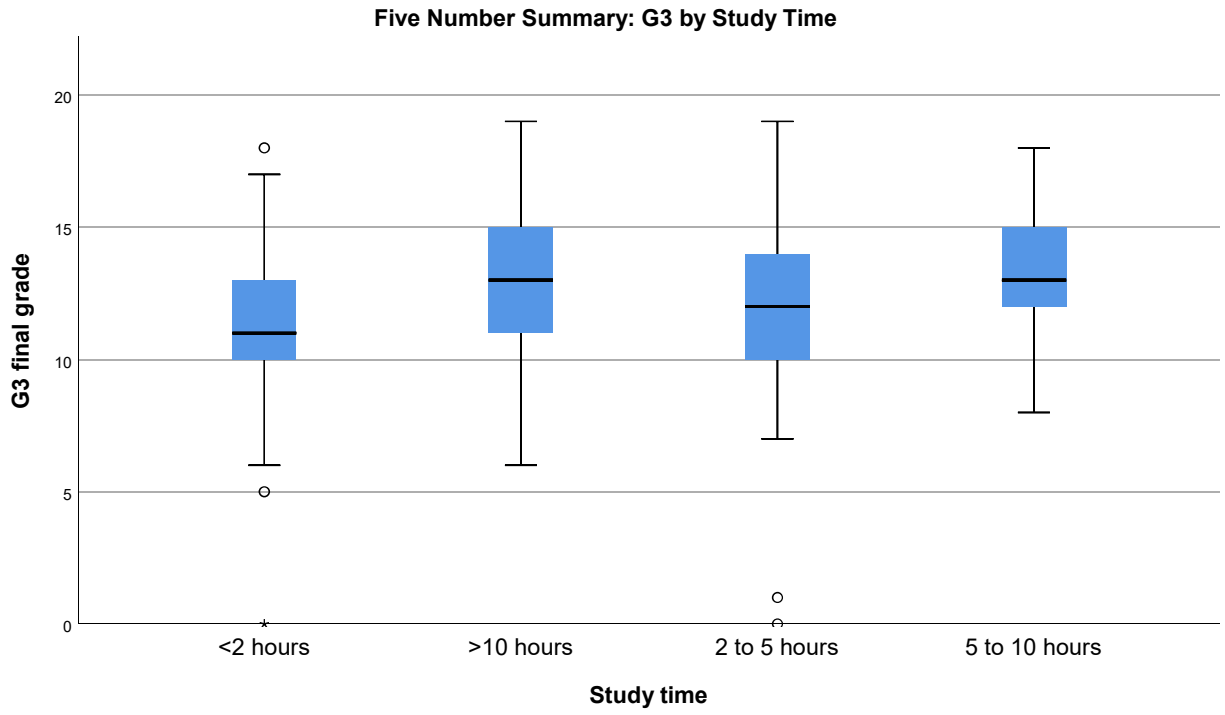
GGraph



```
 984  0 M>
TITLE "Five Number Summary: SPSS Boxplot of G3 by Study Time".
 985  0 M>  TITLE "Five Number Summary: SPSS Boxplot of G3 by Study Time".
```

```
 986  0 M>
GGRAPH
 987  0 M>  GGRAPH
  /GRAPHDATASET NAME="graphdataset" VARIABLES=studytime_group G3 MISSING=LISTW
ISE REPORTMISSING=NO
 988  0 M>    /GRAPHDATASET NAME="graphdataset" VARIABLES=studytime_group G3 M
ISSING=LISTWISE REPORTMISSING=NO
  /GRAPHSPEC SOURCE=INLINE.
 989  0 M>    /GRAPHSPEC SOURCE=INLINE.
BEGIN GPL
  SOURCE: s=userSource(id("graphdataset"))
  DATA: studytime_group=col(source(s), name("studytime_group"), unit.category(
))
  DATA: G3=col(source(s), name("G3"))
  GUIDE: axis(dim(1), label("Study time"))
  GUIDE: axis(dim(2), label("G3 final grade"))
  GUIDE: text.title(label("Five Number Summary: G3 by Study Time"))
  ELEMENT: schema(position(bin.quantile.letter(studytime_group*G3)))
END GPL.
```

GGraph



```
 990  0 M>
* ------------------------------------------------------------.
 991  0 M>  * ------------------------------------------------------------.
* 12. Save SPSS Viewer output and export PDF.
 992  0 M>  * 12. Save SPSS Viewer output and export PDF.
*     The folder must already exist:
 993  0 M>  *     The folder must already exist:
*     D:\DATA ANALYSIS\A Basic Descriptive Statistics Guides\Five Number Summa
ry\Python_Output\pdf
 994  0 M>  *     D:\DATA ANALYSIS\A Basic Descriptive Statistics Guides\Five
Number Summary\Python_Output\pdf
* ------------------------------------------------------------.
 995  0 M>  * ------------------------------------------------------------.

 996  0 M>
OUTPUT SAVE
 997  0 M>  OUTPUT SAVE
  OUTFILE="D:\DATA ANALYSIS\A Basic Descriptive Statistics Guides\Five Number
Summary\Python_Output\pdf\Five-Number-Summary-SPSS-Output.spv"
 998  0 M>    OUTFILE="D:\DATA ANALYSIS\A Basic Descriptive Statistics Guides\
Five Number Summary\Python_Output\pdf\Five-Number-Summ
               ary-SPSS-Output.spv"
  LOCK=NO.
 999  0 M>    LOCK=NO.

1000  0 M>
OUTPUT EXPORT
1001  0 M>  OUTPUT EXPORT
  /CONTENTS EXPORT=ALL LAYERS=PRINTSETTING MODELVIEWS=PRINTSETTING
1002  0 M>    /CONTENTS EXPORT=ALL LAYERS=PRINTSETTING MODELVIEWS=PRINTSETTING
  /PDF DOCUMENTFILE="D:\DATA ANALYSIS\A Basic Descriptive Statistics Guides\Fi
ve Number Summary\Python_Output\pdf\Five-Number-Summary-SPSS-Output.pdf"
1003  0 M>    /PDF DOCUMENTFILE="D:\DATA ANALYSIS\A Basic Descriptive Statisti
cs Guides\Five Number Summary\Python_Output\pdf\Five-N
               umber-Summary-SPSS-Output.pdf"
  /EMBEDBOOKMARKS=YES
1004  0 M>    /EMBEDBOOKMARKS=YES
  /EMBEDFONTS=YES.
1005  0 M>    /EMBEDFONTS=YES.
```

Output Export

Warnings

The name EMBEDBOOKMARKS is not a recognized subcommand.
Execution of this command stops.

```
1006  0 M>
EXECUTE.
1007  0 M>  EXECUTE.
```