Projekt 1

Eksploracja danych

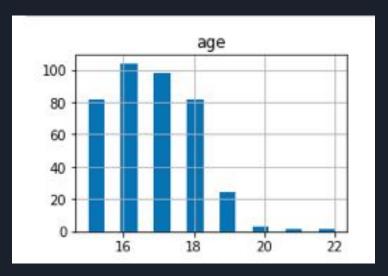
Rozeznanie się w danych

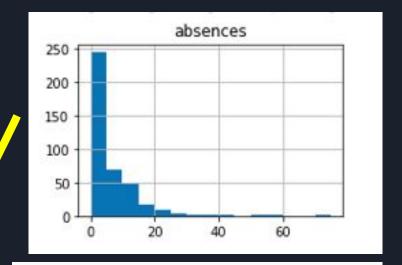
math_students.head()

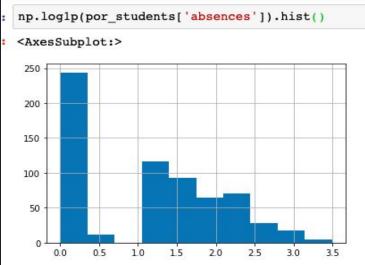
school	sex	age	address	famsize	Pstatus	Medu	Fedu	Mjob	Fjob		famrel	freetime	goout	Dalc	Walc	health	absences	G1	G2	G3
GP	F	18	U	GT3	Α	4	4	at_home	teacher		4	3	4	1	1	3	6	5	6	6
GP	F	17	U	GT3	Т	1	1	at_home	other		5	3	3	1	1	3	4	5	5	6
GP	F	15	U	LE3	Т	1	1	at_home	other		4	3	2	2	3	3	10	7	8	10
GP	F	15	U	GT3	Т	4	2	health	services		3	2	2	1	1	5	2	15	14	15
GP	F	16	U	GT3	Т	3	3	other	other	•••	4	3	2	1	2	5	4	6	10	10
	GP GP GP	GP F GP F	GP F 18 GP F 17 GP F 15 GP F 16	GP F 17 U GP F 15 U GP F 15 U	GP F 17 U GT3 GP F 15 U LE3 GP F 15 U GT3	GP F 17 U GT3 T GP F 15 U LE3 T GP F 15 U GT3 T	GP F 17 U GT3 T 1 GP F 15 U LE3 T 1 GP F 15 U GT3 T 4	GP F 17 U GT3 T 1 1 GP F 15 U LE3 T 1 1 GP F 15 U GT3 T 4 2	GP F 17 U GT3 T 1 1 at_home GP F 15 U LE3 T 1 1 at_home GP F 15 U GT3 T 4 2 health	GP F 17 U GT3 T 1 1 at_home other GP F 15 U LE3 T 1 1 at_home other GP F 15 U GT3 T 4 2 health services	GP F 17 U GT3 T 1 1 at_home other GP F 15 U LE3 T 1 1 at_home other GP F 15 U GT3 T 4 2 health services	GP F 17 U GT3 T 1 1 at_home other 5 GP F 15 U LE3 T 1 1 at_home other 4 GP F 15 U GT3 T 4 2 health services 3	GP F 17 U GT3 T 1 1 at_home other 5 3 GP F 15 U LE3 T 1 1 at_home other 4 3 GP F 15 U GT3 T 4 2 health services 3 2	GP F 17 U GT3 T 1 1 at_home other 5 3 3 GP F 15 U LE3 T 1 1 at_home other 4 3 2 GP F 15 U GT3 T 4 2 health services 3 2 2	GP F 17 U GT3 T 1 1 at_home other 5 3 3 1 GP F 15 U LE3 T 1 1 at_home other 4 3 2 2 GP F 15 U GT3 T 4 2 health services 3 2 2 1	GP F 17 U GT3 T 1 1 at_home other 5 3 3 1 1 GP F 15 U LE3 T 1 1 at_home other 4 3 2 2 3 GP F 15 U GT3 T 4 2 health services 3 2 2 1 1	GP F 17 U GT3 T 1 1 at_home other 5 3 3 1 1 3 GP F 15 U LE3 T 1 1 at_home other 4 3 2 2 3 3 GP F 15 U GT3 T 4 2 health services 3 2 2 1 1 5	GP F 17 U GT3 T 1 1 at_home other 5 3 3 1 1 3 4 GP F 15 U LE3 T 1 1 at_home other 4 3 2 2 3 3 10 GP F 15 U GT3 T 4 2 health services 3 2 2 1 1 5 2	GP F 17 U GT3 T 1 1 at_home other 5 3 3 1 1 3 4 5 GP F 15 U LE3 T 1 1 at_home other 4 3 2 2 3 3 10 7 GP F 15 U GT3 T 4 2 health services 3 2 2 1 1 5 2 15	GP F 17 U GT3 T 1 1 at_home other 5 3 3 1 1 3 4 5 5 GP F 15 U LE3 T 1 1 at_home other 4 3 2 2 3 3 10 7 8 GP F 15 U GT3 T 4 2 health services 3 2 2 1 1 5 2 15 14

50	age	Medu	Fedu	traveltime	studytime	failures	famrel	freetime	goout	Dalc	Walc	health	
count	395.000000	395.000000	395.000000	395.000000	395.000000	395.000000	395.000000	395.000000	395.000000	395.000000	395.000000	395.000000	3
mean	16.696203	2.749367	2.521519	1.448101	2.035443	0.334177	3.944304	3.235443	3.108861	1.481013	2.291139	3.554430	
std	1.276043	1.094735	1.088201	0.697505	0.839240	0.743651	0.896659	0.998862	1.113278	0.890741	1.287897	1.390303	
min	15.000000	0.000000	0.000000	1.000000	1.000000	0.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	
25%	16.000000	2.000000	2.000000	1.000000	1.000000	0.000000	4.000000	3.000000	2.000000	1.000000	1.000000	3.000000	
50%	17.000000	3.000000	2.000000	1.000000	2.000000	0.000000	4.000000	3.000000	3.000000	1.000000	2.000000	4.000000	
75%	18.000000	4.000000	3.000000	2.000000	2.000000	0.000000	5.000000	4.000000	4.000000	2.000000	3.000000	5.000000	
max	22.000000	4.000000	4.000000	4.000000	4.000000	3.000000	5.000000	5.000000	5.000000	5.000000	5.000000	5.000000	

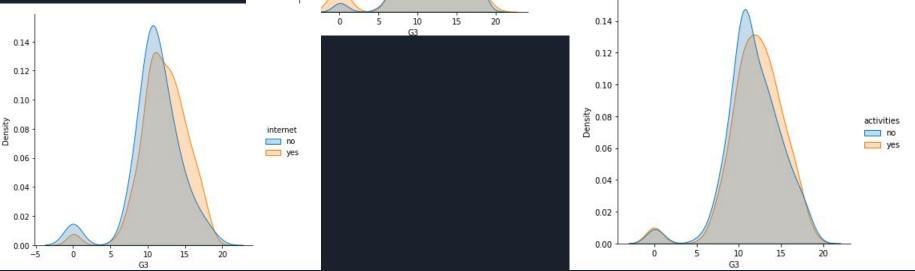
Rozkłady cech



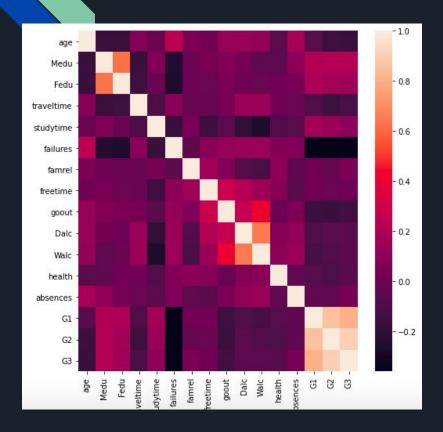


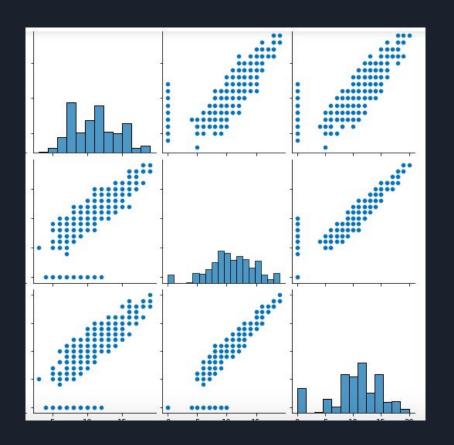


Obserwacje 0.14 0.12 0.10 address 0.06 0.04 0.02 10 G3 15 20 0.14 0.14 0.12 0.12 0.10 0.10



Korelacje





Wykształcenie rodziców



