In [1]:	impo	rt pandas	as nd													
In [2]:																
r - 1 ₀		<pre>rt xgboost rt shap</pre>														
In [3]:	Λ , Υ	= shap.da			.fit(X	(, y)										
In [4]:	<pre>explainer = shap.Explainer(model) shap_values = explainer(X)</pre>															
To [E].	shap	_values =	explaine	er(X)												
In [5]:	shap	.plots.wat	erfall(s	hap_valu	nes[0])				f(x) = 24.01	9						
	4.9	98 = LSTAT				+5.79			-w, -24.01							
	6	5.575 = RM		-2.17												
	0.5	538 = NOX $1 = RAD$				-0.49										
		296 = TAX				-0.47	_ _									
		006 = CRIM $4.09 = DIS$					-0.41									
		= PTRATIO 55.2 = AGE						+0.26 +0.19								
		er features					-0.04									
			19	9	20	21	22 E[f(X)	23] = 22.533	24							
In [6]:	shap	.plots.bee	eswarm(sh	ap_value	es)											
			LSTAT						High							
			RM					•								
			DIS AGE			•			<u>.</u>	ם פרי						
			CRIM		•••											
		Р	TRATIO TAX			-	••			ž.						
	Sum o	of 4 other fe	B eatures			-										
				-io	–5 SHAP va	0 alue (impact	5 10 t on model or	15 utput)	Low 20							
In [7]:	impo	rt pandas	as pd													
	shaps	s_df = pd.	DataFram	e(shap_v	alues.	values)										
In [8]:	shaps	s_df.colum	nns=['SHA	.P_' + x	for x	in X.colum	nns]									
In [9]:	shaps	s_df														
Out[9]:	0	SHAP_CRIM -0.428502			INDUS 181867	SHAP_CHAS -0.001530		SHAP_RM -2.170028		SHAP_DIS -0.414259	SHAP_RAD -0.491561	SHAP_TAX SH -0.472966	0.256695		SHAP_LSTAT 5.788325	
	1 2	-0.159478 -0.062259			27837 70554	-0.000803 -0.002156		-1.750252 3.956776			-0.091274 -0.065633		0.460189 0.036114	0.001291 0.209845	1.547877 7.915174	
	3 4	0.252239 0.642628	-0.007029 -0.005839		252571	-0.003503 -0.006831				-1.169711 -0.360033	-0.060547 -0.049200		-0.138008 -0.134221	0.192880 0.256531	8.041687 5.662515	
	 501	0.311293	-0.03052	 5 -0.6		0.012181		-0.524010	-0.291097	0.526536	-0.597070	 0.062571	-1.423389	-0.052292	1.847324	
	501 502 503	-0.069905 -0.346926	0.01441	9 -0.1	183791 08748	-0.005589 -0.004978	-0.025346	-2.323497	-0.368136	1.272306 0.712909	-0.159295	-0.224204	-1.423389 -1.457388 -2.105958	-0.035109	1.411655 2.020948	
	503 504 505	-0.346926 0.354983 -0.926841	-0.014469	9 -0.7	27385 341228	-0.004978 0.003881 -0.015234	0.041460		-1.245963	0.283501 0.049425	-0.403885 -0.632829 -0.563556	-0.155977		0.094823	2.020948 2.354920 0.066318	
		-0.926641 ws × 13 colu		5.0	J	.5204	-5 TIU	_50/	_500	_ 0	_550		. 	550	2 3 10	
In [10]:	#cred	o matrice	binaria	dove si	ha 1 s	se quella p	.l'output -2 persona ha s	shap posit		ella fea+;	ıre, 0 al+	rimenti				
-	posit						>0).astype		, -2 qu	_0411	. UIL.					
In [11]: Out[11]:	post	tive_shaps		l Shvb.	NDIIe 1	SHAP CUAC	SHAP NOY	SHAP DA	SHAP ACT	SHAP DIS	SHAP PAR	SHAP_TAX SH	AP PTPATIO	SHAP P O	IAP LSTAT	
~~c[11]:	0	0 0	C		0 0	SHAP_CHAS 0	0	0	1	0 0	0 0	0 1	1 1	0 1	1	
	2	0	C)	0	0	1	1	1	0	0	1	1	1	1	
	3	1	C)	1	0		1	1	0	0	1	0	1	1	
	501	1)	0	1	1	0	0	1	0	1	0	0	1	
	502 503	0	C)	0	0	1		0	1	0	0	0	0	1	
	504 505	0)	0	0	0	0	0	1	0	0	0	0	1	
	506 ro	ws × 13 colu	umns													
In []:	#uti	lizzo apri	lori per	generarn	ni item	nset comuni	> insiem.	i di baske	ets compost	i da patte	ern comuni	di shap posi	itivi			
In [12]:	from	mlxtend.f	requent_	patterns	impor	t apriori										
In [14]:	frequ	uent_items	sets = ap	riori(po	sitive	_shaps_df,	min_suppor	rt=0.01, u	ise_colname	s=True)						
In [15]:	rrequ	uent_items uent_items		gth'] =	freque	ent_itemset	s['itemset:	s'].apply((lambda x:	len(x))						
In [16]:	frequ	uent_items	sets[freq	uent_ite	emsets['length']	> 1].sort_	values(" <mark>s</mark> u	ıpport", as	cending =F a	alse)					
Out[16]:		support 0.577075				(SHAP CRIM	itemsets I, SHAP_NOX)	length 2								
	61	0.509881 0.458498				(SHAP_B	RIM, SHAP_B)	2								
	76	0.452569 0.413043				(SHAP_DIS	S, SHAP_RAD) M, SHAP_DIS)	2								
			(SHAP_LS	STAT, SHAF	P_PTRATI		SHAP_RM,									
		0.011858	(SHAP_B, S	SHAP_TAX,	SHAP_P	TRATIO, SHAF	P_RM, SHAP	6 7								
		0.011858	(SHAP_LS	TAT, SHAP	_TAX, SH	HAP_PTRATIO,	SHAP_RM, NOX, SHAP									
		o.011858		_~:\\!\	<i>∞</i> 41″_	, J. M.	, 2. WWW	. •								
In [17]:	mask	= frequen	ıt_itemse	ts['item	nsets']	.map(lambd	a x: 'SHAP	_LSTAT' in	set(x))							
In [47]:	#COIII						rendo gli i olo itemset					e più importa	nnte			
							ength'] > 1					se)				
Out[47]:		support 0.389328				(SHAP_LSTAT	itemsets , SHAP_NOX)	length 2								
		0.316206 0.302372					SHAP_LSTAT) , SHAP_AGE)	2								
		0.288538 0.286561		(SHA	AP_CRIM,		SHAP_LSTAT), SHAP_NOX)	2								
	 1546	 0.011858	(SHAP_ZN,	SHAP_B, S	SHAP_CH	IAS, SHAP_LS	 TAT, SHAP	 5								
	1564 1576						_DIS, SHAP	5								
	3136 3645						P_PTRATIO	7								
	1715 ro	ows × 3 colu														
In []:			mns													
	#pre	ndo il pri		set in te	ermini	di frequen	nza nel data	abase, qui	indi SHAP_L	STAT, SHAI	P_NOX					
In [49]:	#prei	ndo il pri rt numpy a	imo items	et in te	ermini	di frequen	nza nel data	abase, qui	indi SHAP_L	STAT, SHAI	P_NOX					
In [49]: In [34]:	impor	rt numpy a eziono le	imo items us np osservaz	cioni che	e corri	Espondono a	quell'iter	mset				SHAP_NOX']==1	.)].index			
	#seld lstat	<pre>rt numpy a eziono le t_nox_inde trollo la</pre>	imo items is np osservaz ex = posi	<i>cioni che</i> tive_sha	e <i>corri</i> aps_df[spondono a (positive_	quell'iter	mset				SHAP_NOX']==1	.)].index			
In [34]:	#seld lstate #contain	<pre>rt numpy a eziono le t_nox_inde</pre>	imo items as np osservaz ex = posi media de	<i>cioni che</i> tive_sha	e <i>corri</i> aps_df[spondono a (positive_	quell'iter	mset				SHAP_NOX']==1	.)].index			
In [34]: In [50]:	#seld lstate #contains me.me.	<pre>rt numpy a eziono le t_nox_inde trollo la ean(y)</pre>	imo items as np osservaz ex = posi media de	cioni che tive_sha	e <i>corri</i> aps_df[spondono a (positive_	quell'iter	mset				SHAP_NOX']==1	.)].index			
<pre>In [34]: In [50]: Out[50]: Out[51]:</pre>	#seled lstate #containing.me	rt numpy a eziono le t_nox_inde trollo la ean(y)	imo items as np osservaz ex = posi media de	cioni che tive_sha	e <i>corri</i> aps_df[spondono a (positive_	quell'iter	mset				SHAP_NOX']==1	.)].index			
<pre>In [34]: In [50]: Out[50]: In [51]: In [52]:</pre>	#seld lstate #con: np.me 22.53	rt numpy a eziono le t_nox_inde trollo la ean(y) e2806324110	imo items as np osservaz ex = posi media de 0673 at_nox_in	cioni che tive_sha	e <i>corri</i> aps_df[spondono a (positive_	quell'iter	mset				SHAP_NOX']==1	.)].index			
<pre>In [34]: In [50]: Out[50]: In [51]: In [52]:</pre>	#seld lstate #contain np.me 22.53 np.me 30.13	rt numpy a eziono le t_nox_inde trollo la ean(y) 2806324110 ean(y[lsta 13-22.53)/ 23280071016	imo items is np osservaz ex = posi media de 1673 it_nox_in 328	cioni che tive_sha	e corri	spondono a (positive_	quell'iter	mset SHAP_LSTAT	[']==1) & (positive_s		SHAP_NOX']==1	.)].index			
<pre>In [34]: In [50]: Out[50]: In [51]: Out[51]: Out[52]:</pre>	#seld lstate #con: np.me 22.53 np.me 30.13 (30.2) 0.337	rt numpy a eziono le t_nox_inde trollo la ean(y) 2806324110 ean(y[lsta 1472081218 13-22.53)/ 3280071016 temset sel può pensa errispondon	imo items is np osservaz ex = posi media de 1673 it_nox_in 328 22.53 421 dezionato are a div no a feat	cioni che tive_sha	e corri aps_df[c del d	spondono a (positive_ dataset da del targe, come ite	quell'itenshaps_df['s	mset SHAP_LSTAT	Spetto alla	positive_s media alto (pat	shaps_df['	uenti ma che ni itemset pe				
<pre>In [34]: In [50]: Out[50]: In [51]: Out[51]: Out[52]:</pre>	#seld lstate #con: np.me 22.53 np.me 30.13 (30.1) (30.1) ###################################	rt numpy a eziono le t_nox_inde trollo la ean(y) 2806324110 ean(y[lsta 1472081218 13-22.53)/ 3280071016 temset sel può pensa errispondon ione più o	imo items is np osservaz ex = posi media de 0673 it_nox_in 328 222.53 421 dezionato are a div no a feat chirurgio	cioni che tive_sha	e corri aps_df[c del d	spondono a (positive_ dataset da del targe, come ite	quell'itenshaps_df['s	mset SHAP_LSTAT	Spetto alla	positive_s media alto (pat	shaps_df['	uenti ma che				
<pre>In [34]: In [50]: Out[50]: In [51]: Out[51]: In [52]: In []:</pre>	#seld lstate #cons np.me 22.53 np.me 30.13 (30.13 # 1 'i' # # si # cos # az.	rt numpy a eziono le t_nox_inde trollo la ean(y) 2806324110 ean(y[lsta 13-22.53)/ 3280071016 temset sel può pensa rrispondor ione più c possono se 3_max = X. 3_min = X. 4_max = X.	imo items is np osservaz ex = posi media de 0673 it_nox_in 828 222.53 421 dezionato are a div no a feat chirurgio elezionar loc[lsta loc[lsta loc[lsta loc[lsta	cioni che tive_sha claive_sha cla	e corri aps_df[del d ategie bletame adex,"L adex,"L	a del targe, come itente divers	ret al 30% . shaps_df['s	mset SHAP_LSTAT	Spetto alla	positive_s media alto (pat	shaps_df['	uenti ma che				
<pre>In [34]: In [50]: Out[50]: In [51]: Out[51]: In [52]: In []:</pre>	#seld lstate #con: np.me 22.53 np.me 30.13 (30.13 (30.13 #1'i' # # si # co: # az. #Si # feat: f	rt numpy a eziono le t_nox_inde trollo la ean(y) 2806324110 ean(y[lsta 13-22.53)/ 3280071016 temset sel può pensa rrispondon ione più c possono se 3_max = X. 3_min = X. 4_max = X. 4_min = X.	imo items is np osservaz ex = posi media de 0673 it_nox_in 828 222.53 421 dezionato are a div no a feat chirurgio elezionar loc[lsta loc[lsta loc[lsta loc[lsta	cioni che tive_sha claive_sha cla	e corri aps_df[del d ategie bletame adex,"L adex,"L	spondono a (positive_ dataset dataset c, come ite ente divers	ret al 30% . shaps_df['s	mset SHAP_LSTAT	Spetto alla	positive_s media alto (pat	shaps_df['	uenti ma che				
<pre>In [34]: In [50]: Out[50]: In [51]: Out[51]: In [52]: In []:</pre>	#seld lstate #cons np.me 22.53 np.me 30.13 (30.13 (30.13 ## si # si # cons # az. # si # feats fe	rt numpy a eziono le t_nox_inde trollo la ean(y) 2806324110 ean(y[lsta 13-22.53)/ 3280071016 temset sel può pensa rrispondor ione più o possono se 3_max = X. 4_max = X. 4_min = X. 4_min	imo items is np osservaz ex = posi media de 0673 it_nox_in 828 222.53 421 dezionato are a div no a feat chirurgio elezionar loc[lsta loc[lsta loc[lsta loc[lsta	cioni che tive_sha claive_sha cla	e corri aps_df[del d ategie bletame adex,"L adex,"L	a del targe, come itente divers	ret al 30% . shaps_df['s	mset SHAP_LSTAT	Spetto alla	positive_s media alto (pat	shaps_df['	uenti ma che				
<pre>In [34]: In [50]: Out[50]: In [51]: Out[51]: In [52]: In []:</pre>	#seld lstate #con: np.me 22.53 np.me 30.13 (30.2) 0.337 #1'i: # # si # co: # az. #si feat: feat	rt numpy a eziono le t_nox_inde trollo la ean(y) 2806324110 ean(y[lsta 13-22.53)/ 3280071016 temset sel può pensa rrispondor ione più o possono se 3_max = X. 4_max = X. 4_min = X. 4_min	imo items is np osservaz ex = posi media de 0673 it_nox_in 828 222.53 421 dezionato are a div no a feat chirurgio elezionar loc[lsta loc[lsta loc[lsta loc[lsta	cioni che tive_sha claive_sha cla	e corri aps_df[del d ategie bletame adex,"L adex,"L	a del targe, come itente divers	ret al 30% . shaps_df['s	mset SHAP_LSTAT	Spetto alla	positive_s media alto (pat	shaps_df['	uenti ma che				
<pre>In [34]: In [50]: Out[50]: In [51]: Out[51]: In [52]: In []: In []:</pre>	#seld lstate #contain np.me 22.53 mp.me 30.13 (30.2 (30.3 #1'i' # # si # contain # si #	rt numpy a eziono le t_nox_inde trollo la ean(y) 2806324110 ean(y[lsta 13-22.53)/ 3280071016 temset sel può pensa rrispondon ione più c possono se 3_max = X. 3_min = X. 4_max = X. 4_min = X. 4_min 2_min	imo items is np osservaz ex = posi media de 0673 it_nox_in 828 222.53 421 dezionato are a div no a feat chirurgio elezionar loc[lsta loc[lsta loc[lsta loc[lsta	cioni che tive_sha claive_sha cla	e corri aps_df[del d ategie bletame adex,"L adex,"L	a del targe, come itente divers	ret al 30% . shaps_df['s	mset SHAP_LSTAT	Spetto alla	positive_s media alto (pat	shaps_df['	uenti ma che				
<pre>In [34]: In [50]: Out[50]: In [51]: Out[51]: In [52]: In []: In [42]: In [42]:</pre>	#seld lstate #con: np.me 22.53 np.me 30.13 (30.2) 0.337 #1'i: # si # co: # az: feat: f	rt numpy a eziono le t_nox_inde trollo la ean(y) 2806324110 ean(y[lsta 13-22.53)/ 3280071016 temset sel può pensa rrispondon ione più c possono se 3_max = X. 3_min = X. 4_min = X. 4_min = X. 4_min 2_min	imo items is np osservaz ex = posi media de 0673 it_nox_in 328 222.53 421 dezionato are a div no a feat chirurgio elezionar loc[lsta loc[lsta loc[lsta loc[lsta loc[lsta loc[lsta loc[lsta loc[lsta loc[lsta	cioni che tive_sha el target cl	e corri aps_df[del d ategie oletame adex,"L adex,"N adex,"N	a del targe, come ite ente divers STAT"].max STAT"].min OX"].max() OX"].min()	ret al 30% . shaps_df['s	in più ris unti ma co	Spetto alla	positive_s media alto (pat	shaps_df['	uenti ma che				
<pre>In [34]: In [50]: Out[50]: In [51]: Out[51]: In [52]: In []: In []: Out[42]: In [43]: In [43]: In [45]:</pre>	#seld lstate #con: np.me 22.53 np.me 30.13 (30.2 0.337 #l'i: # si # co: # az: #si feat: fea	rt numpy a eziono le t_nox_inde trollo la ean(y) 2806324110 ean(y[lsta 13-22.53)/ 3280071016 temset sel può pensa rrispondor ione più c possono se 3_max = X. 3_min = X. 4_max = X. 4_min = X. 4_min 2_min tro per vi c[lstat_no	imo items is np osservaz ex = posi media de 0673 it_nox_in 328 222.53 421 dezionato are a div no a feat chirurgio elezionar loc[lsta loc[lsta loc[lsta loc[lsta loc[lsta loc[lsta loc[lsta loc[lsta loc[lsta	cioni che tive_sha el target cl	e corri aps_df[del d ategie oletame dex,"L dex,"N dex,"N	a del targe, come ite ente divers STAT"].max STAT"].min OX"].max() OX"].min()	ret al 30% . emset disgin se) o patte:	in più ris unti ma co	Spetto alla on supporto nplessi con	positive_s media alto (pat	shaps_df['	uenti ma che				
<pre>In [34]: In [50]: Out[50]: In [51]: Out[51]: In [52]: In []: In [42]: Out[42]: Out[42]: Out[43]:</pre>	#seld lstate #con: np.me 22.53 np.me 30.13 (30.2) (30.3) #1'i: # si # co: # az. #si feat: feat: feat: feat: feat: 1 X.loo	<pre>rt numpy a eziono le t_nox_inde trollo la ean(y) 2806324110 ean(y[lsta 1472081218 13-22.53)/ 23280071016 temset sel può pensa rrispondon ione più c possono se 3_max = X. 3_min = X. 4_min 2_min tro per vi c[lstat_no CRIM ZN 0.02731 0.0</pre>	imo items is np osservaz ex = posi media de 0673 it_nox_in 328 222.53 421 dezionato are a div no a feat chirurgio elezionar loc[lsta loc]lsta loc[lsta loc[lsta loc]lsta loc[lsta loc]lsta loc[lsta	cioni che tive_sha clarget cl	e corri aps_df[de del d ategie oletame dex,"L dex,"L dex,"N dex,"N	Spondono a (positive_ dataset dataset a del targ e, come ite ente divers STAT"].max (STAT"].min (OX"].max() (OX"].min()	ret al 30% . mset disginate disginate of patter se) o patter soddisfano . soddisfano . DIS RAD .9671 2.0	in più ris unti ma co rn più com TAX PTRA 242.0	Epetto alla on supporto nplessi con ATIO B 17.8 396.90	media alto (pat più eleme	shaps_df['	uenti ma che				
<pre>In [34]: In [50]: Out[50]: In [51]: Out[51]: In [52]: In []: In []: Out[42]: In [43]: In [43]: In [45]:</pre>	#seld lstate #contain np.me 22.53 np.me 30.13 (30.2 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3 (30.3	rt numpy a eziono le t_nox_inde trollo la ean(y) 2806324110 ean(y[lsta 1472081218 13-22.53)/ 3280071016 temset sel può pensa rrispondon ione più c possono se 3_max = X. 3_min = X. 4_min = X. 4_min 2_min tro per vi c[lstat_no CRIM ZN 0.02731 0.0 0.02729 0.0 0.03237 0.0	imo items is np osservaz ex = posi media de 0673 at_nox_in 328 22.53 421 dezionato are a div no a feat chirurgio elezionar loc[lsta loc]lsta	cioni che tive_sha clarget cl	e corri aps_df[del d ategie categie cletame dex,"L dex,"N dex,"N 469 6.4 469 7.1 458 6.9	Spondono a (positive_dataset dataset dataset dataset some itemente divers stat"].max stat"].max stat"].max() stoni che state cioni che state dataset RM AGE 421 78.9 4 185 61.1 4 198 45.8 6	ret al 30% demset disginate) o patte: soldisfano demonstratori disconsideration del construcción del constr	in più ris unti ma co rn più com la rule TAX PTRA 242.0 242.0 222.0	Epetto alla on supporto inplessi con in supporto in su	media alto (pat più eleme LSTAT 9.14 4.03 2.94	shaps_df['	uenti ma che				
<pre>In [34]: In [50]: Out[50]: In [51]: Out[51]: In [52]: In []: In []: Out[42]: In [43]: In [43]: In [45]:</pre>	#seld lstate #con: np.me 30.13 (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2) (30.2)	rt numpy a eziono le t_nox_inde trollo la ean(y) 22806324110 ean(y[lsta 13-22.53)/ 3280071016 temset sel può pensa rrispondor ione più c possono se 3_max = X. 3_min = X. 4_max = X. 4_min 2_min c[lstat_no c] CRIM ZN 0.02731 0.0 0.02729 0.0 0.02985 0.0 0.02985 0.0	imo items imo items is np osservaz ex = posi media de 0673 at_nox_in 328 222.53 421 dezionato ere a div no a feat chirurgio elezionar loc[lsta loc]lsta loc]lsta loc[lsta loc]lsta loc]l	cioni che tive_sha dex opera de structure compara d	e corri aps_df[adex,"L dex,"L dex,"L dex,"N dex,"N 469 6.4 458 6.9 458 7.1 458 6.4	### AGE ###################################	### and the second of the seco	in più ris unti ma co rn più com TAX PTRA 242.0 222.0 222.0	ATIO B 17.8 396.90 17.8 394.63 18.7 394.12	media alto (pat più eleme 9.14 4.03 2.94 5.33 5.21	shaps_df['	uenti ma che				
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