	npreg	glu	bp	skin	bmi	ped	age	type
1	6	148	72	35	33.6	0.627	50	Yes
2	1	85	66	29	26.6	0.351	31	No
3	1	89	66	23	28.1	0.167	21	No
4	3	78	50	32	31.0	0.248	26	Yes
5	2	197	70	45	30.5	0.158	53	Yes
6	5	166	72	19	25.8	0.587	51	Yes
7	0	118	84	47	45.8	0.551	31	Yes
8	1	103	30	38	43.3	0.183	33	No
9	3	126	88	41	39.3	0.704	27	No
10	9	119	80	35	29.0	0.263	29	Yes
11	1	97	66	15	23.2	0.487	22	No
12	5	109	75	26	36.0	0.546	60	No
13	3	88	58	11	24.8	0.267	22	No
14	10	122	78	31	27.6	0.512	45	No
15	4	103	60	33	24.0	0.966	33	No
16	9	102	76	37	32.9	0.665	46	Yes
17	2	90	68	42	38.2	0.503	27	Yes
18	4	111	72	47	37.1	1.390	56	Yes
19	3	180	64	25	34.0	0.271	26	No
20	7	106	92	18	22.7	0.235	48	No
21	9	171	110	24	45.4	0.721	54	Yes
22	0	180	66	39	42.0	1.893	25	Yes
23	2	71	70	27	28.0	0.586	22	No
24	1	103	80	11	19.4	0.491	22	No
25	1	101	50	15	24.2	0.526	26	No
26	5	88	66	21	24.4	0.342	30	No
27	7	150	66	42	34.7	0.718	42	No
28	1	73	50	10	23.0	0.248	21	No
29	0	105	64	41	41.5	0.173	22	No
30	5	99	74	27	29.0	0.203	32	No
31	0	109	88	30	32.5	0.855	38	Yes
32	1	95	66	13	19.6	0.334	25	No
33	4	146	85	27	28.9	0.189	27	No
34	2	100	66	20	32.9	0.867	28	Yes
35	4	129	86	20	35.1	0.231	23	No
36	5	95	72	33	37.7	0.370	27	No
37	2	112	66	22	25.0	0.307	24	No
38	3	113	44	13	22.4	0.140	22	No
39	7	83	78	26	29.3	0.767	36	No
40	0	101	65	28	24.6	0.237	22	No
41	13	106	72	54	36.6	0.178	45	No
42	2	100	68	25	38.5	0.324	26	No
43	15	136	70	32	37.1	0.153	43	Yes
44	4	123	80	15	32.0	0.443	34	No
45	7	81	78	40	46.7	0.261	42	No
46	2	92	62	28	31.6	0.130	24	No
47	6	93	50	30	28.7	0.356	23	No
48	1	122	90	51	49.7	0.325	31	Yes
49	1	81	72	18	26.6	0.283	24	No
50	1	126	56	29	28.7	0.801	21	No
51	4	144	58	28	29.5	0.287	37	No
52	1	89	76	34	31.2	0.192	23	No
53	7	160	54	32	30.5	0.588	39	Yes
54	4	97	60	23	28.2	0.443	22	No

55	0	162	76	56	53.2	0.759	25	Yes
56	2	107	74	30	33.6	0.404	23	No
57	1	88	30	42	55.0	0.496	26	Yes
58	1	117	88	24	34.5	0.403	40	Yes
59	4	173	70	14	29.7	0.361	33	Yes
60	3	170	64	37	34.5	0.356	30	Yes
61	8	84	74	31	38.3	0.457	39	No
62	0	100	70	26	30.8	0.597	21	No
63	0	93	60	25	28.7	0.532	22	No
64	5	106	82	30	39.5	0.286	38	No
65	2	108	52	26	32.5	0.318	22	No
66	2	106	64	35	30.5	1.400	34	No
67	2	90	70	17	27.3	0.085	22	No
68	9	156	86	28	34.3	1.189	42	Yes
69	1	153	82	42	40.6	0.687	23	No
70	7	152	88	44	50.0	0.337	36	Yes
71	2	88	74	19	29.0	0.229	22	No
72	17	163	72	41	40.9	0.817	47	Yes
73	4	151	90	38	29.7	0.294	36	No
74	7	102	74	40	37.2	0.204	45	No
75	0	114	80	34	44.2	0.167	27	No
76	6	104	74	18	29.9	0.722	41	Yes
77	2	75	64	24	29.7	0.370	33	No
78	8	179	72	42	32.7	0.719	36	Yes
79	0	129	110	46	67.1	0.319	26	Yes
80	1	128	98	41	32.0	1.321	33	Yes
81	8	109	76	39	27.9	0.640	31	Yes
82	4	109	64	44	34.8	0.905	26	Yes
83	0	113	80	16	31.0	0.874	21	No
84	0	108	68	20	27.3	0.787	32	No
85	5	111	72	28	23.9	0.407	27	No
86	8	196	76	29	37.5	0.605	57	Yes
87	2	81	60	22	27.7	0.290	25	No
88	0	147	85	54	42.8	0.375	24	No
89	5	109	62	41	35.8	0.514	25	Yes
90	6	125	68	30	30.0	0.464	32	No
91	5	85	74	22	29.0	1.224	32	Yes
92	7	142	60	33	28.8	0.687	61	No
93	1	100	66	15	23.6	0.666	26	No
94	1	87	78	27	34.6	0.101	22	No
95	3	162	52	38	37.2	0.652	24	Yes
96	4	197	70	39	36.7	2.329	31	No
97	0	117	80	31	45.2	0.089	24	No
98	6	134	80	37	46.2	0.238	46	Yes
99	3	74	68	28	29.7	0.293	23	No
100	7	181	84	21	35.9	0.586	51	Yes
101	0	179	90	27	44.1	0.686	23	Yes
102	1	91	64	24	29.2	0.192	21	No
103	4	91	70	32	33.1	0.446	22	No
104	6	119	50	22	27.1	1.318	33	Yes
105	2	146	76	35	38.2	0.329	29	No
106	9	184	85	15	30.0	1.213	49	Yes
107	0	165	90	33	52.3	0.427	23	No
108	9	124	70	33	35.4	0.282	34	No
109	1	111	86	19	30.1	0.143	23	No

110	2	90	80	14	24.4	0.249	24	No
111	1	113	64	35	33.6	0.543	21	Yes
112	3	111	56	39	30.1	0.557	30	No
113	11	155	76	28	33.3	1.353	51	Yes
114	4	95	70	32	32.1	0.612	24	No
115	5	96	74	18	33.6	0.997	43	No
116	2	128	64	42	40.0	1.101	24	No
117	10	101	86	37	45.6	1.136	38	Yes
118	2	108	62	32	25.2	0.128	21	No
119	2	100	70	52	40.5	0.677	25	No
120	7	106	60	24	26.5	0.296	29	Yes
121	0	104	64	23	27.8	0.454	23	No
122	2	108	62	10	25.3	0.881	22	No
123	7	133	88	15	32.4	0.262	37	No
124	7	136	74	26	26.0	0.647	51	No
125	1	119	86	39	45.6	0.808	29	Yes
126	4	96	56	17	20.8	0.340	26	No
127	0	78	88	29	36.9	0.434	21	No
128	0	107	62	30	36.6	0.757	25	Yes
129	6	151	62	31	35.5	0.692	28	No
130	2	146	70	38	28.0	0.337	29	Yes
131	0	126	84	29	30.7	0.520	24	No
132	2	144	58	33	31.6	0.422	25	Yes
133	2	120	76	37	39.7	0.215	29	No
134	10	161	68	23	25.5	0.326	47	Yes
135	0	128	68	19	30.5	1.391	25	Yes
136	2	124	68	28	32.9	0.875	30	Yes
137	2	155	74	17	26.6	0.433	27	Yes
138	3	113	50	10	29.5	0.626	25	No
139	7	109	80	31	35.9	1.127	43	Yes
140	3	115	66	39	38.1	0.150	28	No
141	13	152	90	33	26.8	0.731	43	Yes
142	2	112	75	32	35.7	0.148	21	No
143	1	157	72	21	25.6	0.123	24	No
144	1	122	64	32	35.1	0.692	30	Yes
145	2	102	86	36	45.5	0.127	23	Yes
146	6	105	70	32	30.8	0.122	37	No
147	8	118	72	19	23.1	1.476	46	No
148	2	87	58	16	32.7	0.166	25	No
149	1	95	60	18	23.9	0.260	22	No
150	1	130	70	13	25.9	0.472	22	No
151	1	95	74	21	25.9	0.673	36	No
152	8	126	88	36	38.5	0.349	49	No
153	1	139	46	19	28.7	0.654	22	No
154	3	99	62	19	21.8	0.279	26	No
155	1	125	50	40	33.3	0.962	28	Yes
156	1	196	76	36	36.5	0.875	29	Yes
157	5	189	64	33	31.2	0.583	29	Yes
158	5	103	108	37	39.2	0.305	65	No
159	4	147	74	25	34.9	0.385	30	No
160	5	99	54	28	34.0	0.499	30	No
161	3	81	86	16	27.5	0.306	22	No
162	3	173	82	48	38.4	2.137	25	Yes
163	0	84	64	22	35.8	0.545	21	No
164	0	98	82	15	25.2	0.299	22	No

165	1	87	60	37	37.2	0.509	22	No
166	0	93	100	39	43.4	1.021	35	No
167	0	105	68	22	20.0	0.236	22	No
168	1	90	62	18	25.1	1.268	25	No
169	1	125	70	24	24.3	0.221	25	No
170	1	119	54	13	22.3	0.205	24	No
171	5	116	74	29	32.3	0.660	35	Yes
172	8	105	100	36	43.3	0.239	45	Yes
173	3	100	68	23	31.6	0.949	28	No
174	1	131	64	14	23.7	0.389	21	No
175	2	127	58	24	27.7	1.600	25	No
176	3	96	56	34	24.7	0.944	39	No
177	3	193	70	31	34.9	0.241	25	Yes
178	5	136	84	41	35.0	0.286	35	Yes
179	9	72	78	25	31.6	0.280	38	No
180	1	172	68	49	42.4	0.702	28	Yes
181	6	102	90	39	35.7	0.674	28	No
182	1	112	72	30	34.4	0.528	25	No
183	1	143	84	23	42.4	1.076	22	No
184	3	173	84	33	35.7	0.258	22	Yes
185	4	144	82	32	38.5	0.554	37	Yes
186	3	129	64	29	26.4	0.219	28	Yes
187	1	119	88	41	45.3	0.507	26	No
188	2	94	68	18	26.0	0.561	21	No
189	0	102	64	46	40.6	0.496	21	No
190	8	151	78	32	42.9	0.516	36	Yes
191	1	181	64	30	34.1	0.328	38	Yes
192	1	95	82	25	35.0	0.233	43	Yes
193	3	89	74	16	30.4	0.551	38	No
194	1	80	74	11	30.0	0.527	22	No
195	1	90	68	8	24.5	1.138	36	No
196	0	189	104	25	34.3	0.435	41	Yes
197	4	117	64	27	33.2	0.230	24	No
198	0	180	78	63	59.4	2.420	25	Yes
199	0	104	64	37	33.6	0.510	22	Yes
200	0	120	74	18	30.5	0.285	26	No
201	1	82	64	13	21.2	0.415	23	No
202	0	91	68	32	39.9	0.381	25	No
203	9	134	74	33	25.9	0.460	81	No
204	9	120	72	22	20.8	0.733	48	No
205	8	74	70	40	35.3	0.705	39	No
206	5	88	78	30	27.6	0.258	37	No
207	0	124	56	13	21.8	0.452	21	No
208	0	97	64	36	36.8	0.600	25	No
209	1	144	82	40	41.3	0.607	28	No
210	0	137	70	38	33.2	0.170	22	No
211	4	132	86	31	28.0	0.419	63	No
212	3	158	70	30	35.5	0.344	35	Yes
213	0	123	88	37	35.2	0.197	29	No
214	0	84	82	31	38.2	0.233	23	No
215	0	135	68	42	42.3	0.365	24	Yes
216	1	139	62	41	40.7	0.536	21	No
217	0	173	78	32	46.5	1.159	58	No
218	2	83	65	28	36.8	0.629	24	No
219	2	89	90	30	33.5	0.292	42	No

220	4	99	68	38	32.8	0.145	33	No
221	4	125	70	18	28.9	1.144	45	Yes
222	2	81	72	15	30.1	0.547	25	No
223	6	154	74	32	29.3	0.839	39	No
224	2	117	90	19	25.2	0.313	21	No
225	3	84	72	32	37.2	0.267	28	No
226	7	94	64	25	33.3	0.738	41	No
227	3	96	78	39	37.3	0.238	40	No
228	12	84	72	31	29.7	0.297	46	Yes
229	3	99	54	19	25.6	0.154	24	No
230	3	163	70	18	31.6	0.268	28	Yes
231	9	145	88	34	30.3	0.771	53	Yes
232	6	129	90	7	19.6	0.582	60	No
233	2	68	70	32	25.0	0.187	25	No
234	3	87	60	18	21.8	0.444	21	No
235	2	122	60	18	29.8	0.717	22	No
236	1	77	56	30	33.3	1.251	24	No
237	0	127	80	37	36.3	0.804	23	No
238	3	128	72	25	32.4	0.549	27	Yes
239	10	90	85	32	34.9	0.825	56	Yes
240	4	84	90	23	39.5	0.159	25	No
241	1	88	78	29	32.0	0.365	29	No
242	8	186	90	35	34.5	0.423	37	Yes
243	5	187	76	27	43.6	1.034	53	Yes
244	4	131	68	21	33.1	0.160	28	No
245	1	116	70	28	27.4	0.204	21	No
246	3	84	68	30	31.9	0.591	25	No
247	1	88	62	24	29.9	0.422	23	No
248	1	84	64	23	36.9	0.471	28	No
249	11	103	68	40	46.2	0.126	42	No
250	6	99	60	19	26.9	0.497	32	No
251	1	99	72	30	38.6	0.412	21	No
252	3	111	58	31	29.5	0.430	22	No
253	2	98	60	17	34.7	0.198	22	No
254	1	143	86	30	30.1	0.892	23	No
255	1	119	44	47	35.5	0.280	25	No
256	6	108	44	20	24.0	0.813	35	No
257	3	176	86	27	33.3	1.154	52	Yes
258	11	111	84	40	46.8	0.925	45	Yes
259	2	112	78	50	39.4	0.175	24	No
260	2	82	52	22	28.5	1.699	25	No
261	6	123	72	45	33.6	0.733	34	No
262	1	89	24	19	27.8	0.559	21	No
263	1	108	88	19	27.1	0.400	24	No
264	1	124	60	32	35.8	0.514	21	No
265	1	181	78	42	40.0	1.258	22	Yes
266	1	92	62	25	19.5	0.482	25	No
267	0	152	82	39	41.5	0.270	27	No
268	3	174	58	22	32.9	0.593	36	Yes
269	6	105	80	28	32.5	0.878	26	No
270	11	138	74	26	36.1	0.557	50	Yes
271	2	68	62	13	20.1	0.257	23	No
272	9	112	82	24	28.2	1.282	50	Yes
273	0	94	70	27	43.5	0.347	21	No
274	4	90	88	47	37.7	0.362	29	No

275	4	94	65	22	24.7	0.148	21	No
276	0	102	78	40	34.5	0.238	24	No
277	1	128	82	17	27.5	0.115	22	No
278	7	97	76	32	40.9	0.871	32	Yes
279	1	100	74	12	19.5	0.149	28	No
280	3	103	72	30	27.6	0.730	27	No
281	0	179	50	36	37.8	0.455	22	Yes
282	11	136	84	35	28.3	0.260	42	Yes
283	1	117	60	23	33.8	0.466	27	No
284	2	155	52	27	38.7	0.240	25	Yes
285	2	101	58	35	21.8	0.155	22	No
286	1	112	80	45	34.8	0.217	24	No
287	4	145	82	18	32.5	0.235	70	Yes
288	10	111	70	27	27.5	0.141	40	Yes
289	6	98	58	33	34.0	0.430	43	No
290	6	165	68	26	33.6	0.631	49	No
291	10	68	106	23	35.5	0.285	47	No
292	3	123	100	35	57.3	0.880	22	No
293	0	162	76	36	49.6	0.364	26	Yes
294	0	95	64	39	44.6	0.366	22	No
295	2	129	74	26	33.2	0.591	25	No
296	1	107	50	19	28.3	0.181	29	No
297	7	142	90	24	30.4	0.128	43	Yes
298	3	169	74	19	29.9	0.268	31	Yes
299	6	80	80	36	39.8	0.177	28	No
300	2	127	46	21	34.4	0.176	22	No
301	2	93	64	32	38.0	0.674	23	Yes
302	5	126	78	27	29.6	0.439	40	No
303	10	129	62	36	41.2	0.441	38	Yes
304	0	134	58	20	26.4	0.352	21	No
305	7	187	50	33	33.9	0.826	34	Yes
306	3	173	78	39	33.8	0.970	31	Yes
307	10	94	72	18	23.1	0.595	56	No
308	1	108	60	46	35.5	0.415	24	No
309	5	117	86	30	39.1	0.251	42	No
310	1	116	78	29	36.1	0.496	25	No
311	0	141	84	26	32.4	0.433	22	No
312	2	174	88	37	44.5	0.646	24	Yes
313	2	106	56	27	29.0	0.426	22	No
314	0	126	86	27	27.4	0.515	21	No
315	8	65	72	23	32.0	0.600	42	No
316	2	99	60	17	36.6	0.453	21	No
317	11	120	80	37	42.3	0.785	48	Yes
318	3	102	44	20	30.8	0.400	26	No
319	1	109	58	18	28.5	0.219	22	No
320	13	153	88	37	40.6	1.174	39	No
321	12	100	84	33	30.0	0.488	46	No
322	1	147	94	41	49.3	0.358	27	Yes
323	3	187	70	22	36.4	0.408	36	Yes
324	1	121	78	39	39.0	0.261	28	No
325	3	108	62	24	26.0	0.223	25	No
326	0	181	88	44	43.3	0.222	26	Yes
327	1	128	88	39	36.5	1.057	37	Yes
328	2	88	58	26	28.4	0.766	22	No
329	9	170	74	31	44.0	0.403	43	Yes

330	10	101	76	48	32.9	0.171	63	No
331	5	121	72	23	26.2	0.245	30	No
332	1	93	70	31	30.4	0.315	23	No

Description
A population of women who were at least 21 years old, of Pima Indian heritage and living near Phoeni

Usage
Pima.tr
Pima.tr2
Pima.te
Format
These data frames contains the following columns:

npreg
number of pregnancies.

glu
plasma glucose concentration in an oral glucose tolerance test.

bp
diastolic blood pressure (mm Hg).

skin
triceps skin fold thickness (mm).

bmi
body mass index (weight in kg/(height in m)\^2).

ped
diabetes pedigree function.

age
age in years.

type
Yes or No, for diabetic according to WHO criteria.

Details
The training set Pima.tr contains a randomly selected set of 200 subjects, and Pima.te contains the re

Source
Smith, J. W., Everhart, J. E., Dickson, W. C., Knowler, W. C. and Johannes, R. S. (1988) Using the A

Ripley, B.D. (1996) Pattern Recognition and Neural Networks. Cambridge: Cambridge University Pres

ix, Arizona, was tested for diabetes according to World Health Organization criteria. The data were col

emaining 332 subjects. Pima.tr2 contains Pima.tr plus 100 subjects with missing values in the explanat

DAP learning algorithm to forecast the onset of diabetes mellitus. In Proceedings of the Symposium o

s.

lected by the US National Institute of Diabetes and Digestive and Kidney Diseases. We used the 532 c

:ory variables.

n Computer Applications in Medical Care (Washington, 1988), ed. R. A. Greenes, pp. 261–265. Los Al

:omplete records after dropping the (mainly missing) data on serum insulin.

lamitos, CA: IEEE Computer Society Press.