

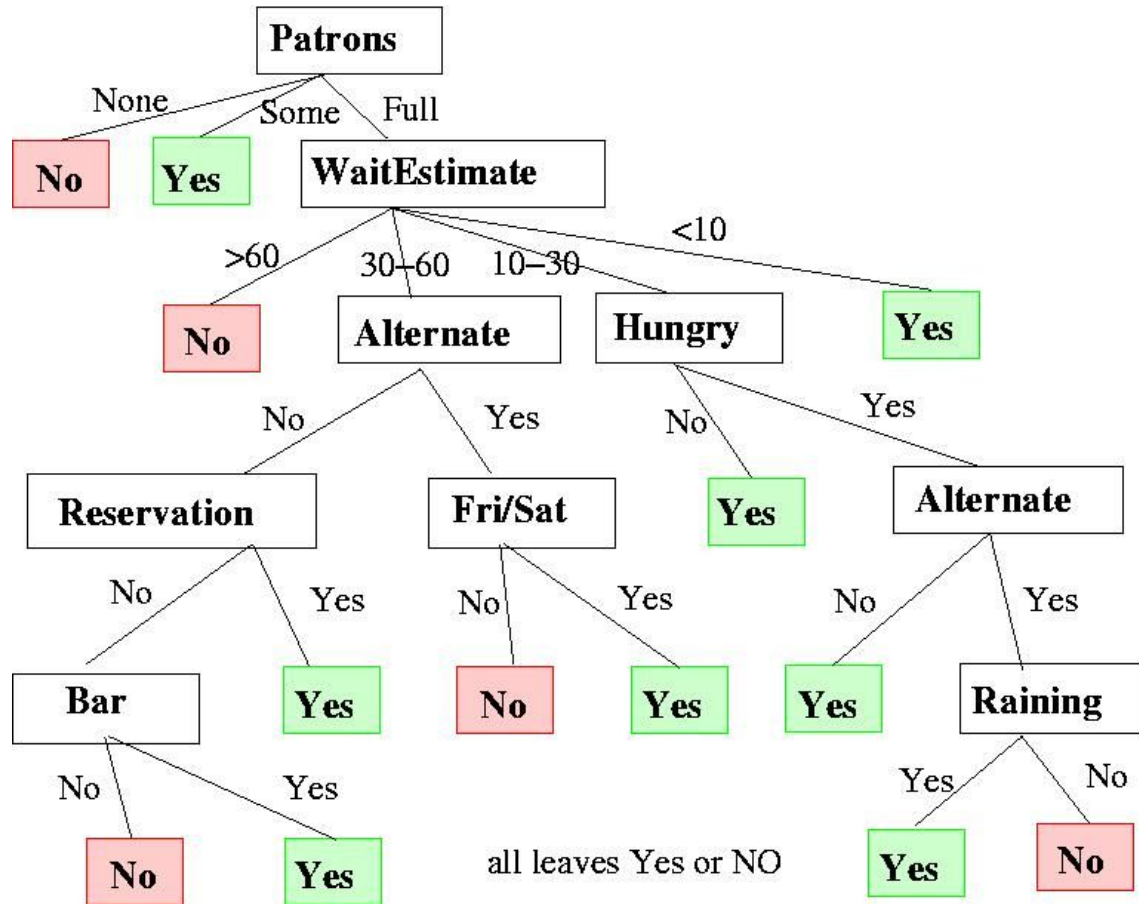
# **CSCCE 420: Artificial Intelligence**

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# Input data: Restaurant Domain

	Alt	Bar	Fri	Hun	Pat	Price	Rain	Rsrv.	Cuisine	Wait Est.	Did Wait?
$X_1$	Yes	No	No	Yes	Some	\$\$\$	No	Yes	French	0-10	Yes
$X_2$	Yes	No	No	Yes	Full	\$	No	No	Thai	30-60	No
$X_3$	No	Yes	No	No	Some	\$	No	No	Burger	0-10	Yes
$X_4$	Yes	No	Yes	Yes	Full	\$	Yes	No	Thai	10-30	Yes
$X_5$	Yes	No	Yes	No	Full	\$\$\$	No	Yes	French	>60	No
$X_6$	No	Yes	No	Yes	Some	\$\$	Yes	Yes	Italian	0-10	Yes
$X_7$	No	Yes	No	No	None	\$	Yes	No	Burger	0-10	No
$X_8$	No	No	No	Yes	Some	\$\$	Yes	Yes	Thai	0-10	Yes
$X_9$	No	Yes	Yes	No	Full	\$	Yes	No	Burger	>60	No
$X_{10}$	Yes	Yes	Yes	Yes	Full	\$\$\$	No	Yes	Italian	10-30	No
$X_{11}$	No	No	No	No	None	\$	No	No	Thai	0-10	No
$X_{12}$	Yes	Yes	Yes	Yes	Full	\$	No	No	Burger	30-60	Yes

# Waiting at a Restaurant



- Compute Entropy(S) and Gain for attributes:

<b>Instance</b>	<b>a<sub>1</sub> (windy)</b>	<b>a<sub>2</sub> (humid)</b>	<b>Classif. Outlook</b>
1	T	T	+
2	T	T	+
3	T	F	-
4	F	F	+
5	F	T	-
6	F	T	-

# Sources:

Original slides from Dr. Robin Murphy