

# Classification Trees and Naïve Bayes

## Practice Questions

# Assignment

- Classify the new records (test data) in the following slides using Classification Tree and Naïve Bayes.

# Data Set 1

Name	Give Birth	Can Fly	Live in Water	Have Legs	Class
human	yes	no	no	yes	mammals
python	no	no	no	no	non-mammals
salmon	no	no	yes	no	non-mammals
whale	yes	no	yes	no	mammals
frog	no	no	sometimes	yes	non-mammals
komodo	no	no	no	yes	non-mammals
bat	yes	yes	no	yes	mammals
pigeon	no	yes	no	yes	non-mammals
cat	yes	no	no	yes	mammals
leopard shark	yes	no	yes	no	non-mammals
turtle	no	no	sometimes	yes	non-mammals
penguin	no	no	sometimes	yes	non-mammals
porcupine	yes	no	no	yes	mammals
eel	no	no	yes	no	non-mammals
salamander	no	no	sometimes	yes	non-mammals
gila monster	no	no	no	yes	non-mammals
platypus	no	no	no	yes	mammals
owl	no	yes	no	yes	non-mammals
dolphin	yes	no	yes	no	mammals
eagle	no	yes	no	yes	non-mammals

Give Birth	Can Fly	Live in Water	Have Legs	Class
Yes	Yes	No	No	?
No	Yes	Sometimes	Yes	?

# Data Set 2

Outlook	Temperature	Humidity	Windy	Class
sunny	hot	high	false	N
sunny	hot	high	true	N
overcast	hot	high	false	P
rain	mild	high	false	P
rain	cool	normal	false	P
rain	cool	normal	true	N
overcast	cool	normal	true	P
sunny	mild	high	false	N
sunny	cool	normal	false	P
rain	mild	normal	false	P
sunny	mild	normal	true	P
overcast	mild	high	true	P
overcast	hot	normal	false	P
rain	mild	high	true	N

Outlook	Temperature	Humidity	Windy	Class
Overcast	Cool	Normal	False	?
Rain	Mild	Normal	True	?

# Data Set 3

age	income	student	credit_rating	buys_computer
<=30	high	no	fair	no
<=30	high	no	excellent	no
31...40	high	no	fair	yes
>40	medium	no	fair	yes
>40	low	yes	fair	yes
>40	low	yes	excellent	no
31...40	low	yes	excellent	yes
<=30	medium	no	fair	no
<=30	low	yes	fair	yes
>40	medium	yes	fair	yes
<=30	medium	yes	excellent	yes
31...40	medium	no	excellent	yes
31...40	high	yes	fair	yes
>40	medium	no	excellent	no

Age	Income	Student	Credit_Rating	Buys_Computer
<=30	High	Yes	Fair	?
>40	Medium	Yes	Excellent	?

# Data Set 4

<i>Tid</i>	Refund	Marital Status	Taxable Income	Cheat
1	Yes	Single	High	No
2	No	Married	Medium	No
3	No	Single	Low	No
4	Yes	Married	High	No
5	No	Divorced	Medium	Yes
6	No	Married	Low	No
7	Yes	Divorced	High	No
8	No	Single	Medium	Yes
9	No	Married	Low	No
10	No	Single	Medium	Yes

Refund	Marital Status	Taxable Income	Cheat
Yes	Divorced	High	?
Yes	Single	Low	?

# Data Set 5

Height	Hair	Eyes	Class
Short	Blond	Blue	+
Tall	Blond	Brown	-
Tall	Red	Blue	+
Short	Dark	Blue	-
Tall	Dark	Blue	-
Tall	Blond	Blue	+
Tall	Dark	Brown	-
Short	Blond	Brown	-

Height	Hair	Eyes	Class
Short	Red	Blue	?
Tall	Blond	Brown	?