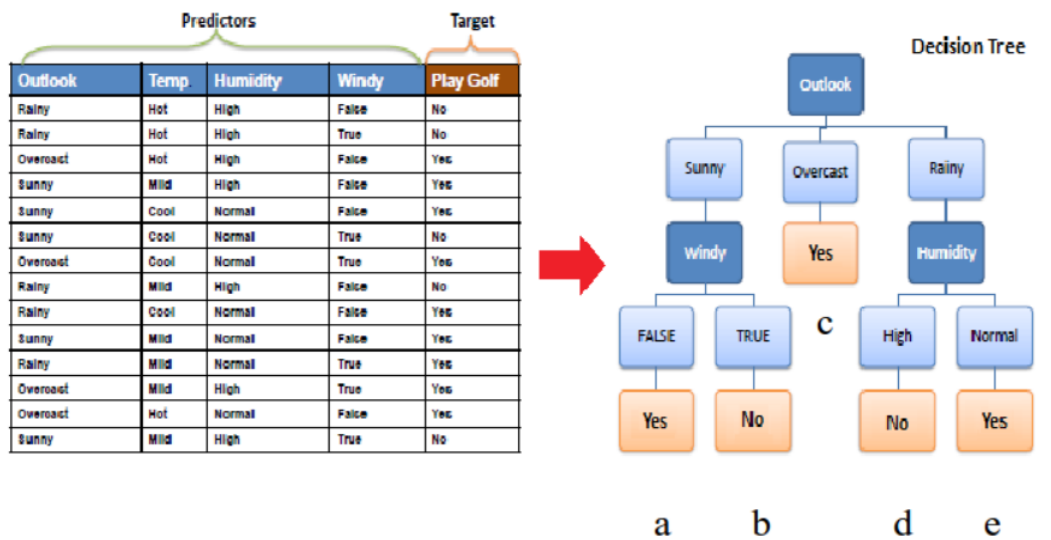


Decision Tree: -

1)

2 points



How are the 14 data items in the provided dataset distributed on the leaves of the decision tree above?

- ☐ a=2 b=3 c=4 d=2 e=3
- ☒ a=3 b=2 c=4 d=3 e=2
- ☐ a=3 b=2 c=3 d=2 e=2

Yes, the answer is correct.
Score: 2

Accepted Answers:

a=3 b=2 c=4 d=3 e=2

Solution:

1. Step to Solve:

1.First look outlook Column in given table then look tree.

e.g. Rainy is first outlook ,

2.go to particular outlook in given tree.(go rainy in decision tree.)

3.then check next branch and take value from given table.(in Rainy Next branch is Humidity ,now go to humidity column and check value of this particular row)

4.then check next branch from tree and take value from table.

5.now take the result from decision tree.

2. Step By Step Solution for first Row:

First Row of given Table:

Outlook	temp	Humidity	Windy	Play Golf
Rainy	Hot	High	false	No

Iteration 1:

Outlook =Rainy

Go decision tree at Rainy outlook.

Branch of tree=outlook->Rainy->**Humidity**

Iteration 2:

Go Humidity Column in given table at 1st row

Humidity=High

Go decision tree at High Humidity.

Branch Of tree=Outlook->Rainy->Humidity->**High**

Iteration 3:

Go playGolf at first row and check value is yes/no in given table.

PlayGolf=No (in given Table)

Go decision tree at No playGolf.

Branch Of tree= outlook->Rainy->Humidity->High->**No->d**

At this place value is “d” in given Decision tree.

After Solving First Row we get “d” as a final answer.

d													
---	--	--	--	--	--	--	--	--	--	--	--	--	--

3. Step By Step Solution for Second Row:

2nd Row of given Table:

Outlook	temp	Humidity	Windy	Play Golf
Rainy	Hot	High	true	No

Iteration 1:

Outlook =Rainy

Go decision tree at Rainy outlook.

Branch of tree=outlook->Rainy->**Humidity**

Iteration 2:

Go Humidity Column in given table at 2nd row

Humidity=High

Go decision tree at High Humidity.

Branch Of tree=Outlook->Rainy->Humidity->**High**

Iteration 3:

Go playGolf row and check value is yes/no in given table.

PlayGolf=No (in given Table)

Go decision tree at No playGolf.

Branch Of tree= outlook->Rainy->Humidity->High->**No**

At this place value is “d” in given Decision tree.

After Solving 1 to 2 Row we get “d d” as a final answer.

d	d												
---	---	--	--	--	--	--	--	--	--	--	--	--	--

4.Step By Step Solution for 3rd Row:

3rd Row of given Table:

Outlook	temp	Humidity	Windyfy	PlayGolf
Overcast	Hot	High	false	yes

Iteration 1:

Outlook =Overcast

Go decision tree at Overcast outlook.

Branch of tree=outlook->Overcast->**Yes**

Iteration 3:

Go PlayGolf row and check value is yes/no in given table.

PlayGolf=Yes (in given Table)

Go decision tree at Yes playGolf.

Branch Of tree= outlook->Overcast->yes->**C**

At this place value is “c” in given Decision tree.

After Solving 1 to 3 Row we get “d d c” as a final answer.

d	d	c											
---	---	---	--	--	--	--	--	--	--	--	--	--	--

5.Step By Step Solution for 4th Row:

4th Row of given Table:

Outlook	temp	Humidity	Windy	PlayGolf
Sunny	Mild	High	False	Yes

Iteration 1:

Outlook =Sunny

Go decision tree at Rainy outlook.

Branch of tree=outlook->Sunny->**Windy**

Iteration 2:

Go Windy Column in given table at particular row

Windy=False

Go decision tree at False Windy.

Branch Of tree=Outlook->Sunny->Windy->**False**

Iteration 3:

Go playGolf row and check value is yes/no in given table.

PlayGolf=Yes (in given Table)

Go decision tree at No playGolf.

Branch Of tree= Outlook->Sunny->Windy->False->**a**

At this place value is “d” in given Decision tree.

After Solving 1 to 4 Row we get “d d c a” as a final answer.

d	d	c	a										
---	---	---	---	--	--	--	--	--	--	--	--	--	--

6.Step By Step Solution for 5th Row:

5th Row of given Table:

Outlook	temp	Humidity	Windy	Play Golf
Sunny	Cool	Normal	False	Yes

Iteration 1:

Outlook =Sunny

Go decision tree at Rainy outlook.

Branch of tree=outlook->Sunny->Windy

Iteration 2:

Go Windy Column in given table at particular row

Windy=False

Go decision tree at False Windy.

Branch Of tree=Outlook->Sunny->Windy->False

Iteration 3:

Go playGolf row and check value is yes/no in given table.

PlayGolf=Yes (in given Table)

Go decision tree at No playGolf.

Branch Of tree= Outlook->Sunny->Windy->False->a

At this place value is “a” in given Decision tree.

After Solving 1 to 5 Row we get “d d c a a” as a final answer.

d	d	c	a	a									
---	---	---	---	---	--	--	--	--	--	--	--	--	--

7.Step By Step Solution for 6th Row:

6th Row of given Table:

Outlook	temp	Humidity	Windy	Play Golf
Sunny	Cool	Normal	True	No

Iteration 1:

Outlook =Sunny

Go decision tree at Rainy outlook.

Branch of tree=outlook->Sunny->Windy

Iteration 2:

Go Windy Column in given table at particular row

Windy=True

Go decision tree at true Windy.

Branch Of tree=Outlook->Sunny->Windy->True

Iteration 3:

Go playGolf row and check value is yes/no in given table.

PlayGolf=No (in given Table)

Go decision tree at No playGolf.

Branch Of tree= Outlook->Sunny->Windy->No->b

At this place value is “b” in given Decision tree.

After Solving 1 to 6 Row we get “d d c a a b” as a final answer.

d	d	c	a	a	b								
---	---	---	---	---	---	--	--	--	--	--	--	--	--

8.Step By Step Solution for 7th Row:

7th Row of given Table:

Outlook	temp	Humidity	Windy	Play Golf
Overcast	Cool	Normal	True	Yes

Iteration 1:

Outlook =Overcast

Go decision tree at Rainy outlook.

Branch of tree=outlook->Overcast->**Yes**

Iteration 2:

Go playGolf row and check value is yes/no in given table.

PlayGolf=Yes (in given Table)

Go decision tree at No playGolf.

Branch Of tree= outlook->Overcast->yes->**c**

At this place value is “c” in given Decision tree.

After Solving 1 to 7 Row we get “d d c a a b c” as a final answer.

d	d	c	a	a	b	c							
---	---	---	---	---	---	---	--	--	--	--	--	--	--

9.Step By Step Solution for 8th Row:

8th Row of given Table:

Outlook	temp	Humidity	Windy	Play Golf
Rainy	Mild	High	False	No

Iteration 1:

Outlook =Rainy

Go decision tree at Rainy outlook.

Branch of tree=outlook->Rainy->**HUmidity**

Iteration 2:

Go Humidity Column in given table at particular row

Humidity=High

Go decision tree at High Humidity.

Branch Of tree= outlook->Rainy->Humidity->**High**

Iteration 3:

Go playGolf row and check value is yes/no in given table.

PlayGolf=No (in given Table)

Go decision tree at No playGolf.

Branch Of tree= outlook->Rainy->Humidity->High->**d**

At this place value is “d” in given Decision tree.

After Solving 1 to 8 Row we get “d d c a a b c d” as a final answer.

D	d	c	a	a	b	c	d						
1	2	3	4	5	6	7	8	9	10	11	12	13	14

10.Step By Step Solution for 9th Row:

9th Row of given Table:

Outlook	temp	Humidity	Windy	Play Golf
Rainy	Cool	Normal	False	Yes

Iteration 1:

Outlook =Rainy

Go decision tree at Rainy outlook.

Branch of tree=outlook->Rainy->**HUmidity**

Iteration 2:

Go Humidity Column in given table at particular row

Humidity=Normal

Go decision tree at Normal Humidity.

Branch Of tree= outlook->Rainy->Humidity->**Normal**

Iteration 3:

Go playGolf row and check value is yes/no in given table.

PlayGolf=Yes (in given Table)

Go decision tree at No playGolf.

Branch Of tree= outlook->Rainy->Humidity->Normal->**Yes->e**

At this place value is “e” in given Decision tree.

After Solving 1 to 9 Row we get “d d c a a b c d e” as a final answer.

D	d	c	a	a	b	c	d	e					
1	2	3	4	5	6	7	8	9	10	11	12	13	14

11.Step By Step Solution for 10th Row:

10th Row of given Table:

Outlook	temp	Humidity	Windy	Play Golf
Sunny	Mild	Normal	False	Yes

Iteration 1:

Outlook =Sunny

Go decision tree at Rainy outlook.

Branch of tree=outlook->Sunny->**Windy**

Iteration 2:

Go Humidity Column in given table at particular row

Windy=False

Go decision tree at False Windy.

Branch Of tree= outlook->Sunny->Windy->**False**

Iteration 3:

Go playGolf row and check value is yes/no in given table.

PlayGolf=Yes (in given Table)

Go decision tree at No playGolf.

Branch Of tree= outlook->Sunny->Windy->False->Yes->**a**

At this place value is “a” in given Decision tree.

After Solving 1 to 10 Row we get “d d c a a b c d e a” as a final answer.

D	d	c	a	a	b	c	d	e	a				
1	2	3	4	5	6	7	8	9	10	11	12	13	14

12.Step By Step Solution for 11th Row:

11th Row of given Table:

Outlook	temp	Humidity	Windy	Play Golf
Rainy	Mild	Normal	True	Yes

After Solving 1 to 11 Row we get “d d c a a b c d e a e” as a final answer.

D	d	c	a	a	b	c	d	e	a	e			
1	2	3	4	5	6	7	8	9	10	11	12	13	14

13.Step By Step Solution for 12th Row:

12th Row of given Table:

Outlook	temp	Humidity	Windy	Play Golf
Overcast	Mild	High	True	Yes

After Solving 1 to 12 Row we get “d d c a a b c d e a e c” as a final answer.

D	d	c	a	a	b	c	d	e	a	e	c		
1	2	3	4	5	6	7	8	9	10	11	12	13	14

14.Step By Step Solution for 13th Row:

13th Row of given Table:

Outlook	temp	Humidity	Windy	Play Golf
Overcast	Hot	Normal	False	Yes

After Solving 1 to 13 Row we get “d d c a a b c d e a e c c” as a final answer.

D	d	c	a	a	b	c	d	e	a	e	c	c	
1	2	3	4	5	6	7	8	9	10	11	12	13	14

15.Step By Step Solution for 14th Row:

14th Row of given Table:

Outlook	temp	Humidity	Windy	Play Golf
Sunny	Mild	High	True	No

After Solving 1 to 14 Row we get “d d c a a b c d e a e c c b” as a final answer.

d	d	c	a	a	b	c	d	e	a	e	c	c	b
1	2	3	4	5	6	7	8	9	10	11	12	13	14

Now count the Frequency of a,b,c,d,e: -

a->3

b->2

c->4

d->3

e->2

Ans is:

a=3 b=2 c=4 d=3 e=2