

4. Consider S and T as variables and the following relation representing the relationships:

- (i) a:  $\neg(SVT)$
- (ii) b:  $(S \& T)$
- (iii) c:  $TV \neg T$
- (iv) d:  $\neg(S \Leftrightarrow S)$
- (v) e:  $\neg S \quad \neg T$

Analyze the following for PL-TT entailment and show whether

- (i). 'a' entails 'b',
- (ii). 'a' entails 'c',
- (iii). 'a' entails 'd' and
- (iv). 'a' entails 'e'

The screenshot shows a Kaggle notebook titled 'Entailment'. The code defines variables s and t as True, then calculates a, b, c, d, and e based on the given logical expressions. It then prints the values of a, b, c, d, and e, and checks for entailment between 'a' and 'b', 'a' and 'c'.

```
s=True
t=True
a=not(s or t)
b= s and t
c=t or (not t)
d=not((not s or s) and (not s or s))
e=not(not s) or (not t)
print (a)
print (b)
print (c)
print (d)
print (e)
if a==b:
    print("a entails b")
else :
    print("a does not entail b")
if a==c:
    print("a entails c")
else :
    print("a does not entail c")
```

Entailment | Kaggle x Prashanth-R1/Intro\_to\_AI\_Lab-P: x New announcement: "Dear Stud... x

kaggle.com/prashanthhhh/entailment/edit

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### Entailment

Draft saved

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Share Save Version 0

+ Draft Session (19m)

```
print("a does not entail c")
if a==d:
    print("a entails d")
else:
    print("a does not entail d")
if a==e:
    print("a entails e")
else:
    print("a does not entail e")
```

False  
True  
True  
False  
True  
a does not entail b  
a does not entail c  
a entails d  
a does not entail e

+ Code + Markdown

Console

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### Entailment

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+ Draft Session (32m)

```
[6]:
s=True
t=False
a=not(s or t)
b= s and t
c=t or (not t)
d=not((not s or s) and (not s or s))
e=not(not s) or (not t)
print(a)
print(b)
print(c)
print(d)
print(e)
if a==b:
    print("a entails b")
else:
    print("a does not entail b")
if a==c:
    print("a entails c")
else:
    print("a does not entail c")
```

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## Entailment

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Markdown Draft Session (32m)

```

print("a entails c")
else :
    print("a does not entail c")
if a==d:
    print ("a entails d")
else :
    print("a does not entail d")
if a==e:
    print ("a entails e")
else:
    print("a does not entail e")

False
False
True
False
True
a entails b
a does not entail c
a entails d
a does not entail e

```

Console

Type here to search

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## Entailment

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Share Save Version 0

Code Draft Session (45m)

```

s=False
t=False
a=not(s or t)
b= s and t
c=t or (not t)
d=not((not s or s) and (not s or s))
e=not(not s) or (not t)
print (a)
print (b)
print (c)
print (d)
print (e)
if a==b:
    print("a entails b")
else :
    print("a does not entail b")
if a==c:
    print("a entails c")
else :
    print("a does not entail c")

```

Console

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### Entailment

Draft saved

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+ Draft Session (45m)

```
print("a does not entail c")
if a==d:
    print("a entailes d")
else:
    print("a does not entail d")
if a==e:
    print("a entailes e")
else:
    print("a does not entail e")
```

True  
False  
True  
False  
True  
a does not entail b  
a entailes c  
a does not entail d  
a entailes e

+ Code + Markdown

Console

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### Entailment

Draft saved

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+ Draft Session (47m)

```
s=False
t=True
a=not(s or t)
b=s and t
c=t or (not t)
d=not((not s or s) and (not s or s))
e=not(not s) or (not t)
print(a)
print(b)
print(c)
print(d)
print(e)
if a==b:
    print("a entailes b")
else:
    print("a does not entail b")
if a==c:
    print("a entailes c")
else:
    print("a does not entail c")
if a==d:
```

Console

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# Entailment

Draft saved

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Share Save Version 0

+ Draft Session (48m)

```
if a==d:
    print ("a entailes d")
else :
    print("a does not entail d")
if a==e:
    print ("a entailes e")
else:
    print("a does not entail e")
```

False  
False  
True  
False  
False  
False  
a entailes b  
a does not entail c  
a entailes d  
a entailes e

+ Code + Markdown

Find Code Help

Search for examples of how to do things

Console

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