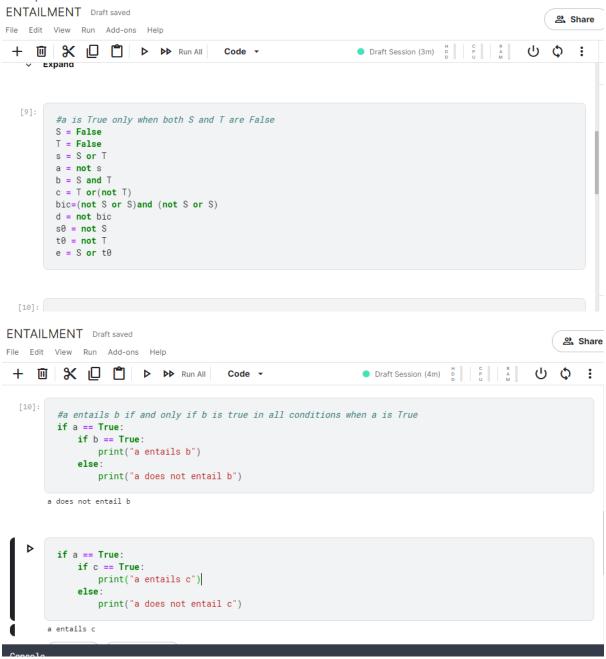## Program:

```
#a is True only when both S and T are False
S = False
T = False
s = S or T
a = not s
b = S and T
c = T or(not T)
bic=(not S or S)and (not S or S)
d = not bic
s0 = not S
t0 = not T
e = S or t0
#a entails b if and only if b is true in all conditions when a is True

if a == True:

    if b == True:

        print("a entails b")

    else:

        print("a does not entail b")

if a == True:

    if c == True:

        print("a entails c")

    else:

        print("a does not entail c")

if a == True:

    if d == True:

        print("a entails d")

    else:

        print("a does not entail d")

if a == True:

    if e == True:

        print("a entails e")

    else:

        print("a does not entail e")
```

Output:

+ 🗑 ✂ ⧉ 📋   ▷   ▷▷ Run All   Code ▾   ● Draft Session (3m)

ˇ Expand

```python
[9]:   #a is True only when both S and T are False
       S = False
       T = False
       s = S or T
       a = not s
       b = S and T
       c = T or(not T)
       bic=(not S or S)and (not S or S)
       d = not bic
       s0 = not S
       t0 = not T
       e = S or t0
```

[10]:

+ 🗑 ✂ ⧉ 📋   ▷   ▷▷ Run All   Code ▾   ● Draft Session (4m)

```python
[10]:   #a entails b if and only if b is true in all conditions when a is True
        if a == True:
            if b == True:
                print("a entails b")
            else:
                print("a does not entail b")
```

a does not entail b

```python
if a == True:
    if c == True:
        print("a entails c")
    else:
        print("a does not entail c")
```

a entails c

Console

+ 🗑 ✂ ▢ 📋 ▷ ▷▷ Run All   Code ▾   ● Draft Session (4m)   HDD   CPU   RAM   ⏻ ↻ ⋮

+ Code   + Markdown

[12]:
```python
if a == True:
    if d == True:
        print("a entails d")
    else:
        print("a does not entail d")
```

a does not entail d

[13]:
```python
if a == True:
    if e == True:
        print("a entails e")
    else:
        print("a does not entail e")
```

a entails e