BARI ANKIT (56)

Exp – 6 : McCulloch Pitts

Code :

```
# %%
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# %%
import numpy as np

# %%
np.random.seed(seed=0)
I = np.random.choice([0,1], 3)
W = np.random.choice([-1,1], 3)
print(f'Input vector:{I}, Weight vector:{W}')

# %%
dot = I @ W
print(f'Dot product: {dot}')

# %%
def linear_threshold_gate(dot: int, T: float) -> int:
  if dot >= T:
    return 1
```

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    else:
        return 0

# %%
T = 1
activation = linear_threshold_gate(dot, T)
print(f'Activation: {activation}')

# %%
T = 3
activation = linear_threshold_gate(dot, T)
print(f'Activation: {activation}')

# %%
input_table = np.array([
    [0,0],
    [0,1],
    [1,0],
    [1,1]
])

print(f'input table:\n{input_table}')

# %%
weights = np.array([1,1])
print(f'weights: {weights}')
```

```
# %%
dot_products = input_table @ weights
print(f'Dot products: {dot_products}')


# %%
def linear_threshold_gate(dot: int, T: float) -> int:
    if dot >= T:
        return 1
    else:
        return 0


# %%
T = 2
for i in range(0,4):
    activation = linear_threshold_gate(dot_products[i], T)
    print(f'Activation: {activation}')
```