21se02ml006

Write a function that takes a prior, likelihood, and evidence as input and returns the posterior probability according to Bayes' Theorem.

Code:

```
def calculate_posterior(prior, likelihood, evidence):
    """
    Calculate the posterior probability using Bayes' Theorem.

    Args:
    prior (float): Prior probability.
    likelihood (float): Likelihood of the evidence given the hypothesis.
    evidence (float): Probability of the evidence.

    Returns:
    float: Posterior probability.
    """
    # Calculate the numerator of Bayes' Theorem
    numerator = likelihood * prior

    # Calculate the denominator of Bayes' Theorem
    denominator = evidence

    # Calculate the posterior probability
    posterior = numerator / denominator

    return posterior


prior = 0.3
likelihood = 0.8
evidence = 0.6

posterior = calculate_posterior(prior, likelihood, evidence)
print("Posterior Probability:", posterior)
```

Output:

```
Posterior Probability: 0.4
```