objective is met by the system:

1. ✅ Implemented Naive Bayes classifier with real-time processing:

* ✓ Python-based sniffer (**sniffer.py**)
* ✓ Naive Bayes classifier (**classifier.php**)
* ✓ Maintains malicious IP database (

bad\_ips.txt

)

* ✓ Provides confidence scores (implemented in classifier)

1. ✅ Network feature analysis:

* ✓ Extracts protocol type (IP.proto)
* ✓ Tracks packet size (len(pkt))
* ✓ Monitors ports (sport, dport)
* ✓ Uses these features for classification

1. ✅ False positive minimization:

* ✓ Uses confidence scoring
* ✓ Implements Laplace smoothing
* ✓ Maintains balance between detection and false positives

1. ✅ Laplace smoothing implementation:

* ✓ Applied in feature probability calculations
* ✓ Prevents zero probabilities
* ✓ Handles missing data
* ✓ Enhances classification accuracy

All four objectives are met by the system as implemented. Each objective corresponds to a specific feature or capability that is present in the codebase:

* The sniffer captures real-time traffic
* The classifier uses Naive Bayes with feature selection
* The confidence scoring system helps minimize false positives
* Laplace smoothing is implemented for robust probability calculations

The objectives accurately reflect what the system actually does, with no unmet objectives or missing components.