## **Performance Analysis of Operation Prediction**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Operation** | **Total Questions** | **True**  **Positive** | **False**  **positive** | **False Negative** | **True Negative** |
| Addition | *159* | *147* | *2* | *12* | *401* |
| Subtraction | *159* | *149* | *1* | *10* | *402* |
| Multiplication | *117* | *110* | *6* | *7* | *439* |
| Division | *127* | *124* | *1* | *3* | *434* |

*Table 1 Confusion Matrix Parameters for Each Operation*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Operation** | **Accuracy(%)** | **Precision(%)** | **Recall(%)** | **F1 Score(%)** |
| Addition | *97.5* | *98.65* | *92.45* | *95.44* |
| Subtraction | *98.04* | *99.33* | *93.71* | *96.44* |
| Multiplication | *97.68* | *94.82* | *94.01* | *94.41* |
| Division | *99.28* | *99.2* | *97.64* | *98.41* |

*Table 2 Performance of Operation Prediction for Each Operation*

|  |  |  |  |
| --- | --- | --- | --- |
| **Accuracy(%)** | **Precision(%)** | **Recall(%)** | **F1 Score(%)** |
| *98.12* | *98* | *94.45* | *96.17* |

*Table 3 Overall System Performance for Predicting Operation*

**Performance Analysis of Final Answer Generation**

|  |  |  |  |
| --- | --- | --- | --- |
| **Operation** | **Total Problems** | **Answers Correctly** | **Accuracy(%)** |
| Addition | *159* | *142* | *90.56* |
| Subtraction | *159* | *145* | *92.45* |
| Multiplication | *117* | *107* | *91.45* |
| Division | *127* | *124* | *97.63* |
| Total | *562* | *522* | ***93.02*** |

*Table 4 System Performance for Final Answer Generation*