**Interpretation of My Classification Report:**

| Metric | Value (True Class) | Interpretation |
| --- | --- | --- |
| Precision | 0.75 | When the model predicts a player is in the true class (Division III or the chosen division), it's correct 75% of the time. |
| Recall | 0.78 | The model successfully identifies 78% of all actual cases of the true class. It captures a substantial proportion of real cases, minimizing missed predictions. |
| F1-score | 0.77 | Balances precision and recall, showing robust overall predictive strength for the true class. |

Overall Accuracy: 0.82 (82%), meaning the model correctly predicts the NCAA division in approximately 82% of all cases.

**Interpretation of Confusion Matrix:**

|  | Predicted False | Predicted True |
| --- | --- | --- |
| Actual False | 1454 *(True Negative)* | 267 *(False Positive)* |
| Actual True | 226 *(False Negative)* | 807 *(True Positive)* |
|  |  |  |

* True Positives (807):  
  Correctly predicted cases belonging to the targeted NCAA division (True class).
* True Negatives (1454):  
  Correctly identified cases that do not belong to the targeted division (Negative class).
* False Positives (267):  
  Incorrectly identified as belonging to the division. Minimally impacts reliability given the context.
* False Negatives (226):  
  Missed cases that genuinely belong to the division. Not excessively high, suggesting good model sensitivity.

**Strengths of My Model:**

* High Accuracy (82%): Robust predictive capability.
* Balanced Precision and Recall: Indicates reliable model performance.
* Good generalization: Demonstrated by strong results on the validation set.

The results show that the model is good to answer my research question:

* Reliably predicts NCAA division membership from demographic and physical attributes.
* Demonstrates clearly differentiated attributes across NCAA divisions.