**Performance Monitoring Plan (PMP) for Azure Fraud Rules Model**

**Overview**

Azure Fraud Rules is an in-house built fraud rules engine designed for digital banking. It uses a rule-based approach (non-AI/ML) to classify transaction statuses into the following categories:

* **Green**: Safe transactions.
* **Yellow**: Transactions requiring additional review.
* **Red Pending**: Transactions pending resolution.
* **Red**: High-risk transactions flagged as fraudulent.

This document outlines the performance monitoring framework, including metrics, thresholds, frequency, responsibilities, and escalation plans.

**Performance Monitoring Framework**

| **Aspect** | **Details** |
| --- | --- |
| **Frequency of Monitoring** | Monthly. |
| **Team Responsible** | Fraud Strategy Team in collaboration with Enterprise Risk Management (ERM). |
| **Stakeholders** | Senior Management, Risk, and Operations Teams. |

**Performance Metrics and Thresholds**

| **Metric** | **Definition** | **Thresholds** | **Escalation Plan** |
| --- | --- | --- | --- |
| **True Positives (TP)** | Number of correctly flagged fraudulent transactions. | ≥ 95% (Green) | **Amber (90-94%):** Review rules. **Red (<90%):** Immediate escalation to senior management. |
| **False Positives (FP)** | Number of legitimate transactions incorrectly flagged as fraudulent. | ≤ 5% (Green) | **Amber (5-10%):** Review and adjust thresholds. **Red (>10%):** Full model audit. |
| **True Positive Rate (TPR)** | Proportion of actual fraud cases detected (sensitivity). | ≥ 90% (Green) | **Amber (85-89%):** Investigate rule gaps. **Red (<85%):** Immediate rule reconfiguration. |
| **False Positive Rate (FPR)** | Proportion of non-fraud cases incorrectly flagged. | ≤ 5% (Green) | **Amber (5-10%):** Adjust rule specificity. **Red (>10%):** Immediate senior review. |
| **Precision** | Proportion of flagged transactions that are truly fraudulent. | ≥ 85% (Green) | **Amber (80-84%):** Evaluate misclassifications. **Red (<80%):** Comprehensive rule review. |
| **Hit Rate** | Percentage of flagged transactions reviewed and resolved successfully. | ≥ 90% (Green) | **Amber (85-89%):** Investigate workflow issues. **Red (<85%):** Process escalation. |

**Escalation Matrix**

| **Severity** | **Description** | **Action Plan** | **Responsible Parties** |
| --- | --- | --- | --- |
| **Green** | Metrics within thresholds. | Continue standard monitoring and reporting. | Fraud Strategy Team. |
| **Amber** | Metrics approaching thresholds; potential risk identified. | Conduct a detailed review of flagged metrics. Implement minor rule adjustments if required. | Fraud Strategy Team in collaboration with ERM. |
| **Red** | Metrics outside acceptable thresholds; critical performance issue. | Escalate immediately to senior management. Conduct a full review and reconfiguration of affected rules. | Fraud Strategy Team, ERM, Senior Management. |

**Monitoring Activities**

| **Activity** | **Frequency** | **Responsible Team** | **Key Deliverables** |
| --- | --- | --- | --- |
| Generate monthly performance reports. | Monthly | Fraud Strategy Team, ERM | Performance report detailing TP, FP, TPR, FPR, precision, and hit rate. |
| Review flagged metrics. | Monthly | Fraud Strategy Team | Identification of trends or anomalies in performance metrics. |
| Escalate issues outside thresholds. | As needed | Fraud Strategy Team, ERM, Senior Management | Corrective actions and model updates. |
| Update rules based on findings. | Quarterly | Fraud Strategy Team | Adjustments to rules and thresholds to optimize performance. |

**Documentation and Reporting**

* **Monthly Reports**: Include detailed analysis of all performance metrics and comparisons with thresholds.
* **Escalation Reports**: Prepared when metrics exceed defined thresholds, including root cause analysis and recommended actions.
* **Audit Trails**: Maintain logs of all rule adjustments and performance evaluation activities for accountability.

This PMP ensures a robust framework for monitoring the Azure Fraud Rules model, enhancing fraud detection while minimizing false positives and ensuring continuous improvement.