Activity 2 – Student Scoring System (Rule-Based Intelligence)

Objective

The objective of Activity 2 is to transform raw student data into meaningful, interpretable performance scores that mentors can easily understand and act upon. The scoring system uses deterministic, rule-based intelligence to ensure transparency and trust.

Input Dataset

The scoring system uses the structured students.csv dataset designed in Activity 1. This dataset includes academic, wellness, productivity, engagement, and career readiness attributes for each student.

Scoring Components

1. Academic Performance Score (APS)

APS evaluates a student's academic standing based on:

- GPA
- Attendance percentage
- Assignment completion percentage

These attributes are normalized and combined using weighted averaging to produce a score on a 0–100 scale.

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2. Wellness & Wellbeing Score (WWS)

WWS reflects the student's mental and physical wellbeing using:

- Stress level (inversely weighted)
- Sleep hours
- Mental wellbeing score

Lower stress and better sleep and wellbeing contribute to a higher WWS.

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3. Productivity & Time Management Score (PTMS)

PTMS measures how effectively a student manages time and workload based on:

- Productivity score
- Distraction level (inversely weighted)
- Engagement score

This score highlights students who may need productivity or time-management mentoring.

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4. Career Readiness Score (CRS)

CRS evaluates how prepared a student is for future career goals using:

- Skill readiness
- Career clarity

Higher scores indicate stronger alignment between skills and career direction.

Student Readiness Index (SRI)

The Student Readiness Index (SRI) provides a holistic readiness measure by combining all four core scores:

SRI Formula:

SRI = 0.30 × APS + 0.25 × WWS + 0.20 × PTMS + 0.25 × CRS

The SRI is normalized on a 0–100 scale and is used as the primary trigger for mentoring interventions.

Student Classification

Based on SRI values, students are categorized into readiness levels:

SRI Range	Category
≥ 75	Green (Highly Ready)
65 – 74	Blue (Stable)
50 – 64	Yellow (Needs Attention)
< 50	Red (High Risk)

This classification allows mentors to quickly identify students requiring immediate or specialized support.

Validation

The scoring logic was validated using sample students and full-dataset evaluation. The generated scores aligned with expected student behavior patterns, such as:

- High stress leading to lower wellness scores
- Low engagement impacting productivity scores
- High skill readiness improving career readiness

Conclusion

The rule-based scoring system successfully converts raw student data into actionable insights while maintaining full explainability. This approach ensures that mentors can trust and effectively use the scores for personalized mentoring and intervention planning within the HEPro AI+ system.