

## Instructions & Screenshots

- Figure 1 shows a screenshot of the app immediately after it loads. The interface includes: A sidebar for configuring the Applicant Facts (Cumulative GPA, Monthly Family Income, Co-curricular Score, and Disciplinary Actions on Record) and the Rules Configuration (a text area to edit rules, followed by the Evaluate Eligibility button). There is also a main panel that introduces the Scholarship Advisory Rule-Based System (RBS), displays the Applicant Facts for Evaluation in JSON format, and provides an expander to view the Active Knowledge Base. This is followed by a message: Set applicant details in the sidebar and click Evaluate Eligibility to run the advisory system. So, users may explore by using different parameters and see the results.

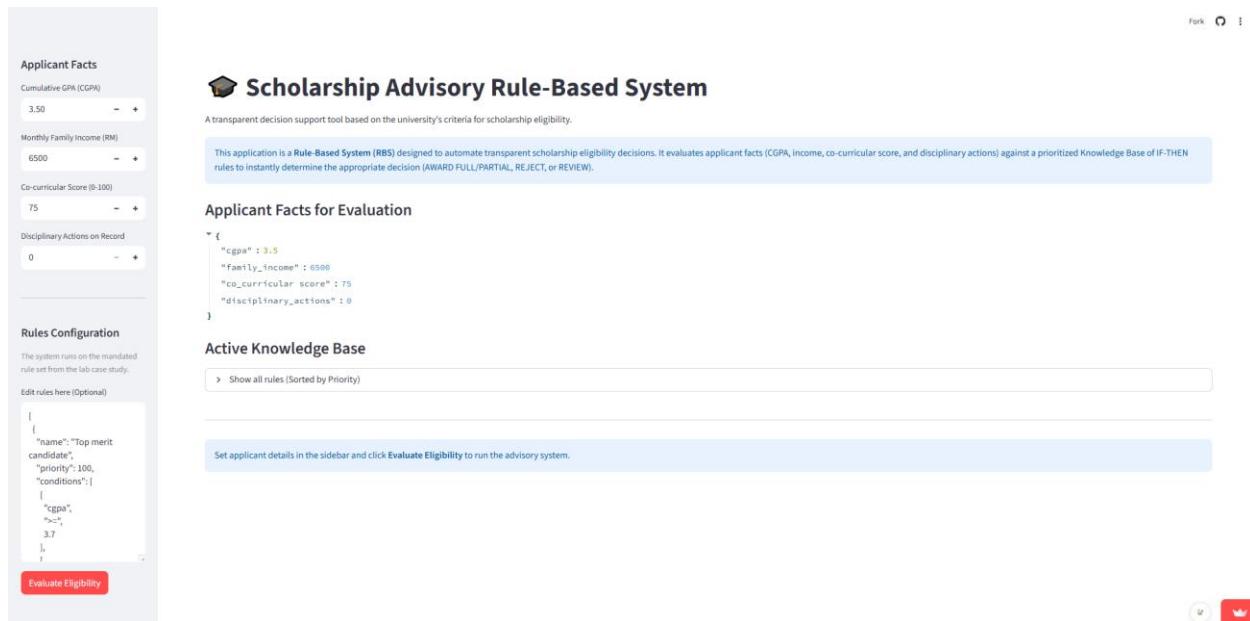


Figure 1

2. Figure 2 shows the screenshot of the app right after the user clicks Evaluate Eligibility, which demonstrates the successful execution of the Rule-Based System's inference engine. This result shows the final decision, which is divided into two columns:

- Decision (Left Column): This displays the resulting status, which in this case is AWARD PARTIAL (indicated by the green badge) with the accompanying Reason: Good academic & involvement record with moderate need.
- Matched Rules (by priority) (Right Column): This identifies the specific rule that dictated the final decision. The Best Match is “Good candidate partial scholarship” with a Priority: 80.

The screenshot shows the Scholarship Advisory Rule-Based System application. On the left, there is a sidebar titled "Applicant Facts" containing fields for Cumulative GPA (CGPA), Monthly Family Income (RM), Co-curricular Score (0-100), and Disciplinary Actions on Record. Below this is a "Rules Configuration" section with a code editor showing a JSON-like rule definition for a "Top merit candidate". At the bottom of the sidebar is a red "Evaluate Eligibility" button. The main content area has a title "Scholarship Advisory Rule-Based System" with a graduation cap icon. It includes a brief description: "A transparent decision support tool based on the university's criteria for scholarship eligibility. This application is a Rule-Based System (RBS) designed to automate transparent scholarship eligibility decisions. It evaluates applicant facts (CGPA, income, co-curricular score, and disciplinary actions) against a prioritized Knowledge Base of IF-THEN rules to instantly determine the appropriate decision (AWARD FULL/PARTIAL, REJECT, or REVIEW)." Below this is a "Show all rules (Sorted by Priority)" link. The "Decision" section shows a green badge with the text "AWARD PARTIAL" and the reason "Good academic & involvement record with moderate need". The "Matched Rules (by priority)" section shows a single rule: "Best Match: Good candidate partial scholarship | Priority: 80" with the chosen action "AWARD PARTIAL". There is also a link "Show All Matched Rules and Details". The bottom right corner of the main content area has a like and share icon.

*Figure 2*

3. Figure 3 shows that by clicking the “Show All Matched Rules and Details”, users can further inspect the reasoning: The system matches the “Good candidate partial scholarship” rule because the applicant’s input facts meet all of its conditions shown in the expander.

**Matched Rules (by priority)** ↗

Best Match: Good candidate partial scholarship | Priority: 80

Chosen Action: AWARD PARTIAL

▼ Show All Matched Rules and Details

---

1. Good candidate partial scholarship | Priority=80

Action: {'decision': 'AWARD PARTIAL', 'reason': 'Good academic & involvement record with moderate need'}

**Conditions**

- `cgpa ≥ 3.3`
- `co_curricular_score ≥ 60`
- `family_income ≤ 12000`
- `disciplinary_actions ≤ 1`

*Figure 3*

4. Figure 4 shows the Active Knowledge Base content, specifically detailing the rules loaded into the system. It indicates that the knowledge base is sorted by Priority, with the highest priority rule, “Top merit candidate” (Priority 100), displayed first. The expander illustrates the complete JSON structure of this rule, including the conditions and the defined action.

## Active Knowledge Base

▼ Show all rules (Sorted by Priority)

```
[
  {
    "name": "Top merit candidate",
    "priority": 100,
    "conditions": [
      [
        [
          "cgpa",
          ">=",
          3.7
        ],
        [
          "co_curricular score",
          ">=",
          80
        ],
        [
          "family_income",
          "<=",
          8000
        ],
        [
          "disciplinary_actions",
          "==" ,
          0
        ]
      ],
      "action": {
        "decision": "AWARD FULL",
        "reason": "Excellent academic & co-curricular performance, with acceptable need"
      }
    ],
    {
      "name": "Low CGPA not eligible",
      "priority": 95,
      "conditions": [
        [
          "cgpa",
          "<",
          null
        ]
      ]
    }
  }
]
```

Figure 4