SMART STUDENT COUNSELLING AI AGENT

SUBMITTED BY

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ABSTRACT

Students face academic stress, emotional challenges, and career confusion in their educational journey. Due to limited access to counselors and hesitation to share personal problems, many students do not receive timely guidance. The Smart Student Counselling AI Agent is an AI-based system designed to provide automated counseling support to students. Using Natural Language Processing, the system understands student concerns and provides suitable academic advice, emotional support, and motivational guidance. This project aims to improve student well-being and academic performance through intelligent automation.

PROBLEM STATEMENT

In educational institutions, counseling services are limited compared to the growing number of students. Many students hesitate to approach counselors due to fear, stigma, or lack of time. As a result, academic stress, anxiety, and poor decision-making increase. There is a need for a smart, confidential, and easily accessible counseling system. The Smart Student Counselling AI Agent addresses this problem by providing instant AI-based counseling support.

INTRODUCTION

Student counseling plays a crucial role in improving academic success and mental health. Traditional counseling methods are often insufficient to handle a large number of students. With advancements in Artificial Intelligence, automated systems can assist students by providing instant guidance and emotional support.

The Smart Student Counselling AI Agent acts as a virtual counselor that interacts with students through a chat interface. It analyzes student inputs, identifies their issues, and provides appropriate responses. This system creates a safe environment for students to express their concerns freely.

OBJECTIVES

- To provide 24/7 counseling support
- To reduce academic stress among students
- To offer career guidance and motivation
- To ensure privacy and confidentiality

- To assist human counselors

IMPLEMENTATION

Technologies Used

Programming Language: Python

AI Technique: Natural Language Processing (NLP)

Libraries Used:

NLTK – for text processing

Scikit-learn – for classification

Platform: Google Colab

```python
# Smart Student Counseling AI Agent - FULL WORKING CODE

# Safe integer input
def get_int_input(prompt):
    while True:
        try:
            return int(input(prompt).strip())
        except:
            print("Enter numbers only")

# Safe float input
def get_float_input(prompt):
    while True:
        try:
            return float(input(prompt).strip())
        except:
            print("Enter valid number")

# Inputs
student_name = input("Enter Student Name: ").strip()
maths = get_int_input("Enter Maths Marks: ")
science = get_int_input("Enter Science Marks: ")
english = get_int_input("Enter English Marks: ")
attendance = get_float_input("Enter Attendance Percentage: ")

# Average
average = (maths + science + english) / 3

# AI Decision
if average < 50 or attendance < 60:
    risk = "High"
    advice = "Needs academic counseling"
elif average < 65 or attendance < 75:
    risk = "Medium"
    advice = "Needs improvement"
else:
    risk = "Low"
    advice = "Excellent performance"
```

```
# Output
print("\nStudent Name:", student_name)
print("Average Marks:", average)
print("Attendance:", attendance)
print("Risk Level:", risk)
print("AI Agent Advice:", advice)
```

```
Enter Student Name: Harish
Enter Maths Marks: 78
Enter Science Marks: 89
Enter English Marks: 65
Enter Attendance Percentage: 75

Student Name: Harish
Average Marks: 77.33333333333333
Attendance: 75.0
Risk Level: Low
AI Agent Advice: Excellent performance
```

IMPLEMENTATION DESCRIPTION

The Smart Student Counselling AI Agent is implemented as a text-based interactive system. The student enters their problem through a chat interface. The system processes the input using NLP techniques and classifies the issue into predefined categories. Based on the category, appropriate counseling responses are generated.

STEPS INVOLVED IN IMPLEMENTATION

- User Input Collection

The student types their concern such as stress, low marks, or career confusion.

- Text Preprocessing

The input text is cleaned by removing unnecessary symbols and converting text into tokens.

- Issue Classification

The system classifies the problem into:

- ☐ Academic Stress
- ☐ Emotional Problems
- ☐ Career Guidance
- ☐ Motivation Issues

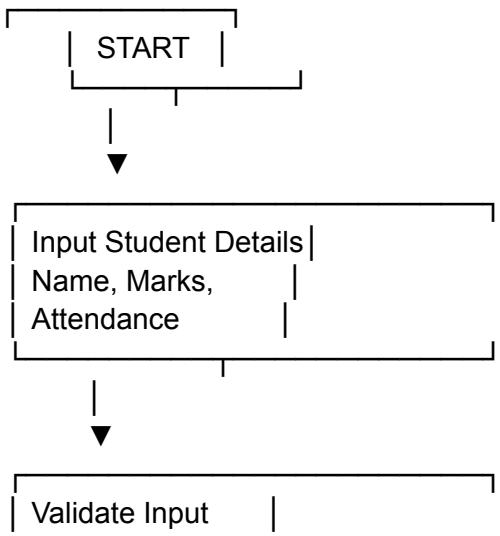
- Response Generation

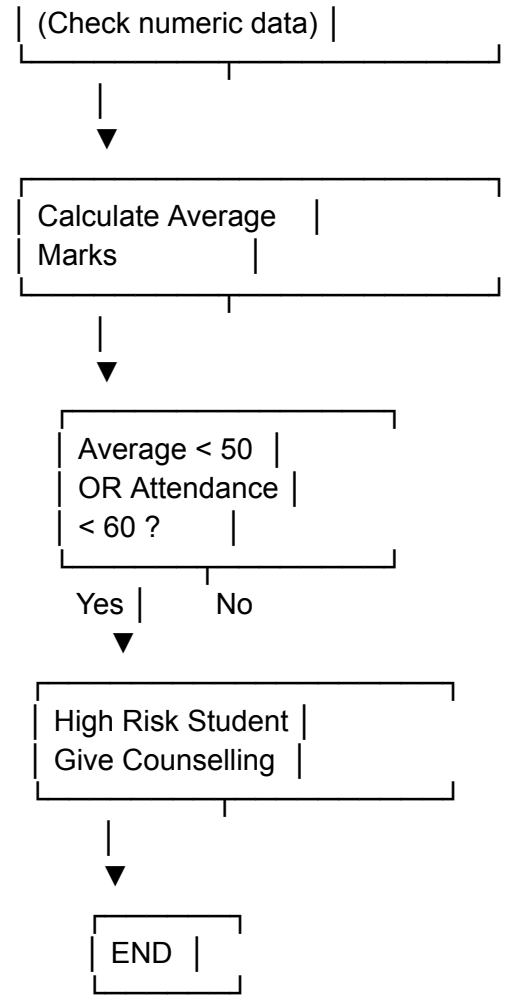
Predefined counseling responses are selected based on the classified category.

- Output Display

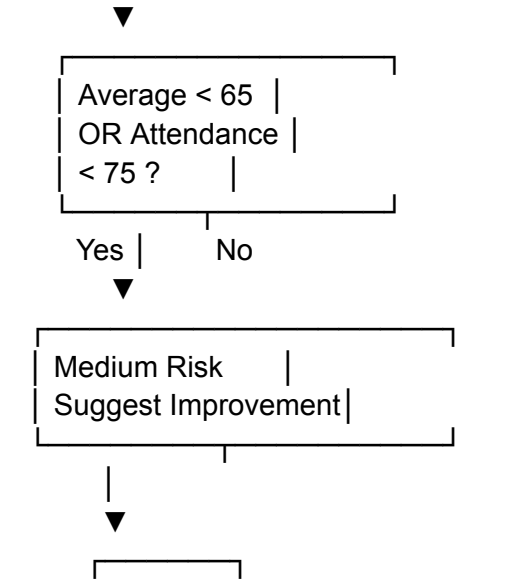
The AI agent displays suitable advice and motivational messages to the student.

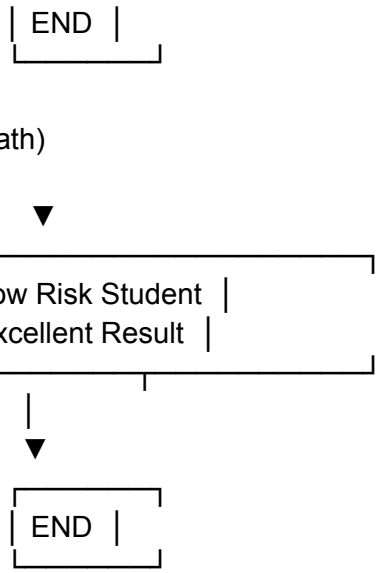
FLOW CHART




(Check numeric data)
Calculate Average Marks
Average < 50 OR Attendance < 60 ?
Yes
No
High Risk Student Give Counselling
END

(No path)


Average < 65 OR Attendance < 75 ?
Yes
No
Medium Risk Suggest Improvement



ADVANTAGES

- Instant counseling support
- Easy to use
- Maintains student privacy
- Reduces workload of counselors
- Available anytime

APPLICATION

- Colleges and Universities
- Schools
- Online Education Platforms
- Student Support Systems

FUTURE ENHANCEMENTS

- Voice-based counseling system
- Emotion detection using AI
- Multilingual support
- Integration with professional counselors
- Personalized student reports

CONCLUSION

The Smart Student Counselling AI Agent provides an effective solution to support students academically and emotionally. By using Artificial Intelligence and Natural Language Processing,

the system offers instant, confidential, and reliable counseling services. This project demonstrates how AI agents can play an important role in enhancing student well-being and improving educational outcomes.