Hospital Patient Management System (HPMS)

Course: Programming Fundamentals (AI-133)
Semester: Spring 2025
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Group Number: 9

Submission Date: June 13, 2025

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1. Introduction

The Hospital Patient Management System (HPMS) is a C++ console application that simplifies the management of patient records. It offers features such as patient registration, search, update, categorization by symptoms, and listing of all records. The project is designed as a hands-on introduction to structured programming concepts.

2. Inputs and Outputs

Inputs:
- Full Name
- Age (1–120)
- Gender (M/F)
- Phone Number
- Email Address
- Symptoms (selected from a menu of 10 options)

Outputs:
- Automatically generated Patient ID
- Displayed patient records
- Symptom-based categorization
- Table view of all patient entries

3. Key Functionalities

- Register Patient: Add new patient details with validation and unique ID.
- Search by ID: Look up patient information using the assigned ID.
- Update Record: Modify patient age, contact info, and symptoms.
- Categorize by Symptoms: Classify patients into medical categories based on symptoms.
- List All Patients: Display all stored records in a table format.
- Colored Console Output: Enhanced readability using color codes.

4. Member Contributions

- Amna: Developed the patient registration module.
- Haider: Implemented the patient search functionality.
- Rehman: Handled the record update feature.
- Umer: Designed the symptom-based categorization feature.

5. Future Enhancements

- Store data persistently using files or a database.
- Add secure user login for restricted access.
- Improve input validation with regex for contact info.
- Create a GUI or move to a web interface.
- Support advanced search and filtering options.
- Allow exporting data to CSV or PDF formats.

6. Conclusion

This project serves as a foundation for understanding how real-world systems handle data entry, validation, and presentation. It highlights team collaboration and provides a springboard for advanced software features.