PROJECT CHARTER

GENERAL PROJECT INFORMATION

PROJECT NAME	COURSE PROFESSOR	PROJECT PI/SPONSOR
AllayAI Billing Support	Tehmina Amjad	Alan Eng

STUDENT	EMAIL	Expertise
Jianyu Qiu	qiu.jiany@northeastern.edu	*Software Development(Java, Spring), Data Analysis and Visualization(Python), Machine Learning Engineering*
Zijian Qi	qi.zij@northeastern.edu	*Web Development (Django, Node.js, React), Machine Learning Integration*

PROJECT OVERVIEW

PROBLEM OR ISSUE	Medical billing is complex, error-prone, and time-consuming, leading to inefficiencies and administrative burdens in healthcare processes.
PURPOSE OF PROJECT	The purpose of the project is to create automated and accurate coding solutions using machine learning to improve the efficiency and accuracy of the health care billing process.
BUSINESS CASE	The business for this project is to reduce errors and time associated with manual billing submission, which leads to fast and more accurate processes. This improves revenue cycle management for healthcare service providers, decreases administrative costs, minimizes claim denials, and ensures compliance with regulations. By automating coding with machine learning, this project aims to increase operating efficiency and financial performance in healthcare organizations

GOALS / METHODS / METRICS	Goals: 1. Automate and improve the accuracy of medical coding in healthcare billing 2. Reduce the time and administrative burden involved in billing processes. 3. Enhance compliance with billing regulations and reduce claim denials 4. Integrate the coding outwork smoothly with the existing healthcare system. Methods: 1. Apply machine learning techniques to analyze medical records and generate accurate billing codes. 2. Develop software tools that automate coding workflows. 3. Collaborate with healthcare professionals to understand coding requirements and challenges. 4. Test and refine models using real-world billing data Metrics: 1. Coding accuracy 2. Time saved per billing cycle compared to manual billing. 3. Reduction in claim denial rate 4. User satisfaction from healthcare billing staff 5. Integration success and its performance within the system
EXPECTED DELIVERABLES	1. Automated coding system which can can accurately translates medical services into billing code 2. Machine learning model to improve coding accuracy and efficiency 3. Integration plans for incorporating the coding system into the existing healthcare platform. 4. Evaluation shows that improvement in accuracy and time saving

PROJECT SCOPE

WITHIN SCOPE	This project will focus on the development and deployment of an automated medical billing support system that leverages machine learning to improve the accuracy and efficiency of medical coding. It will involve designing and

	training models capable of generating ICD-10/11 codes, developing a software platform that integrates with existing Electronic Medical Record (EMR) and Revenue Cycle Management (RCM) systems, and testing the system with real and simulated billing data. The project also includes iterative refinement of the models and workflows based on performance evaluation and user feedback, with final deliverables including an evaluation report on accuracy improvements, denial reduction, and time savings.
OUTSIDE OF SCOPE	The project does not include modifications to healthcare regulations or payer policies, nor the full development or replacement of EMR/EHR systems beyond integration. It also does not encompass large-scale staff training, customization for third-party payer systems, or automation of non-medical financial processes.

TENTATIVE SCHEDULE

KEY MILESTONE	START	FINISH
Form Project Team / Preliminary Review / Scope	9/12/2025	09/14/2025
Finalize Project Plan / Charter / Kick Off	9/15/2025	09/21/2025
Define Phase	9/22/2025	10/05/2025
Measurement Phase	10/06/2025	10/26/2025
Analysis Phase	10/27/2025	11/09/2025
Improvement Phase	11/10/2025	11/23/2025
Control Phase	11/24/20XX	11/30/2025
Project Summary Report and Close Out	12/01/2025	12/07/2025

Reference:

1. Centers for Medicare & Medicaid Services. *Medicare Claims Processing Manual*.

2. World Health Organization. *ICD-11: International Classification of Diseases*.

3. Rios, A., Kavuluru, R., & Lu, Y. (2020). Neural transfer learning for assigning ICD codes. *Artificial Intelligence in Medicine, 103,* 101812.

4. Deloitte Insights. (2023). *The future of revenue cycle management: Automating for efficiency and accuracy.*