Title: AI-Powered Customer Support Chatbot — Project Report Author: [Student Name] Guide: [Guide Name] Institution: [Institution Name] Date: December 24, 2025

Running head: AI-POWERED CUSTOMER SUPPORT CHATBOT

Executive Summary

This report documents the design, implementation, evaluation, and recommendations for an AI-powered customer support chatbot developed as a minimum viable product (MVP). The project implements a Flask-based web application integrated with Azure Cosmos DB for persistence and an Azure OpenAI-backed response engine (with robust fallback rules). The chatbot supports quick action buttons (Track Order, Refund Status, Show Orders, Talk to Agent, Product Info) and personalized responses powered by contextual user data. This report covers literature review, research methodology, data collection and preparation, system architecture, implementation details, evaluation and testing, results, discussion, conclusions, and recommendations.

Abstract (650 words)

The proliferation of e-commerce platforms has increased demand for scalable, efficient, and personalized customer support. Traditional call centers and manual support methods cannot easily scale to meet this demand without rising costs. AI-assisted chatbots offer a promising approach to reduce human workload, improve first-contact resolution rates, and deliver personalized support experiences. This project presents the development and evaluation of an AI-Powered Customer Support Chatbot MVP that integrates a Flask-based web frontend with Azure Cosmos DB for persistence and Azure OpenAI or a rule-based fallback for response generation.

The chatbot supports quick action flows including order tracking, refund status checking, and showing users' order history. Personalization is enabled through user profiles and order history stored in Cosmos DB; the system extracts user context (name, preferences, recent orders, prior issues) and appends it to prompts sent to the AI model. The design emphasizes privacy, data minimization, and user control: personal data are used only with explicit user IDs and the system falls back to safe rule-based messages if the AI endpoint is unavailable.