Project Introduction

Group name – PSB
Team members – Khushi Patel, Sophie Samuels, Clarissa Barajas
Project Name – DementiaInsight
Description – This program will provide prompts to users regarding the patient's level of performance with various tasks as outlined in the Cognitive Assessment Tool Guide to obtain information on the patient's cognitive and physical function level. Each prompt will have a boolean value and answering each prompt will lead to additional prompts, eventually leading to an outcome of determined Allen cognitive level. Based on the determined Allen cognitive level, the program will provide the user with recommendations for care provision including self-care, leisure, and sensory needs. The goal of this program is to provide support to care facilities and caregivers that lack dementia care training so that they can provide evidence-based support to their clients.
Feasibility report
Relevant documentation –
An indexed tool guide created by University of Texas, “Projects for Scientific Programming in C++ and Other Languages” by Victor Eijkhout provides extensive documentation regarding the implementation of C++ and other languages for a wide variety of program needs. It includes reviews for implementation of conditionals, arithmetic, looping, functions, exceptions, arrays, and recursion. These concepts may each play a role in the DementiaInsight program[3].
Experiences of others with similar problems –
Geeks for Geeks published an article in 2021 to discuss management of hospital systems with C++ programming methods. While this is not directly applicable to the group’s program, it does provide many insights for saving, sorting, and printing patient data which will be necessary to provide caregivers with appropriate feedback once they have completed the assessment portion[4].
Cplusplus.com has a thread in which multiple programmers discuss the problem of creating an effective questionnaire using C++ language. The thread is exceedingly relevant to one of the problems the group’s program will need to address, as the thread looks into how to validate the amount of “no’s” that the person enters so that the survey will be prompted to end at a certain count[5].
Tutorials/Example code –
DxSter is presented as a simple Alzheimer’s disease algorithmic diagnostic tool used to differentiate between normal cognitive function, mild cognitive impairment, and dementia to improve accuracy through use of physician and clinical diagnoses. The creators have shared the source code, which will be helpful in implementing code in the group program to produce estimated dementia levels based on clinical evidence[2].

The above mentioned Geeks for Geeks article provides source code for implementing functions for printing and sorting patient data through establishment of classes, objects, and arrays. This will be useful in providing meaningful information output to the user within the group's program[4].
Git-Hub hosts the source code for a student record management system which allows a program to manage records directly to an excel file to maximize efficiency of data entry. This may be useful if the user needs to store information for multiple patients[1].

References

1. Code-Recursion. (n.d.). *Code-recursion/student-record-management-system: A Minimalist desktop app to manage records directly on to an Excel file to decrease data entry / typist cost and improves efficiency.* GitHub. https://github.com/Code-Recursion/Student-Record-Management-System
2. Duara, R., Loewenstein, D. A., Greig, M., Acevedo, A., Potter, E., Appel, J., … Potter, H. (2010). Reliability and Validity of an Algorithm for the Diagnosis of Normal Cognition, MCI and Dementia: Implications for Multi-Center Research Studies. *The American Journal of Geriatric Psychiatry : Official Journal of the American Association for Geriatric Psychiatry*, 18(4), 363–370.http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2844658/
3. Eijkhout, V. (n.d.). *Projects for Scientific Programming in C++ and Other Languages*. The University of Texas at Austin. https://web.corral.tacc.utexas.edu/CompEdu/pdf/isp/EijkhoutProgrammingProjects-book.pdf
4. GeeksforGeeks. (2021, January 18). *Hospital Management System in C++*. GeeksforGeeks. https://www.geeksforgeeks.org/hospital-management-system-in-c/
5. *Questionnaire/Survey program with the use of if /else if/else statements*. Questionnaire/survey program with the US - C++ forum. (n.d.). https://cplusplus.com/forum/beginner/280435/