

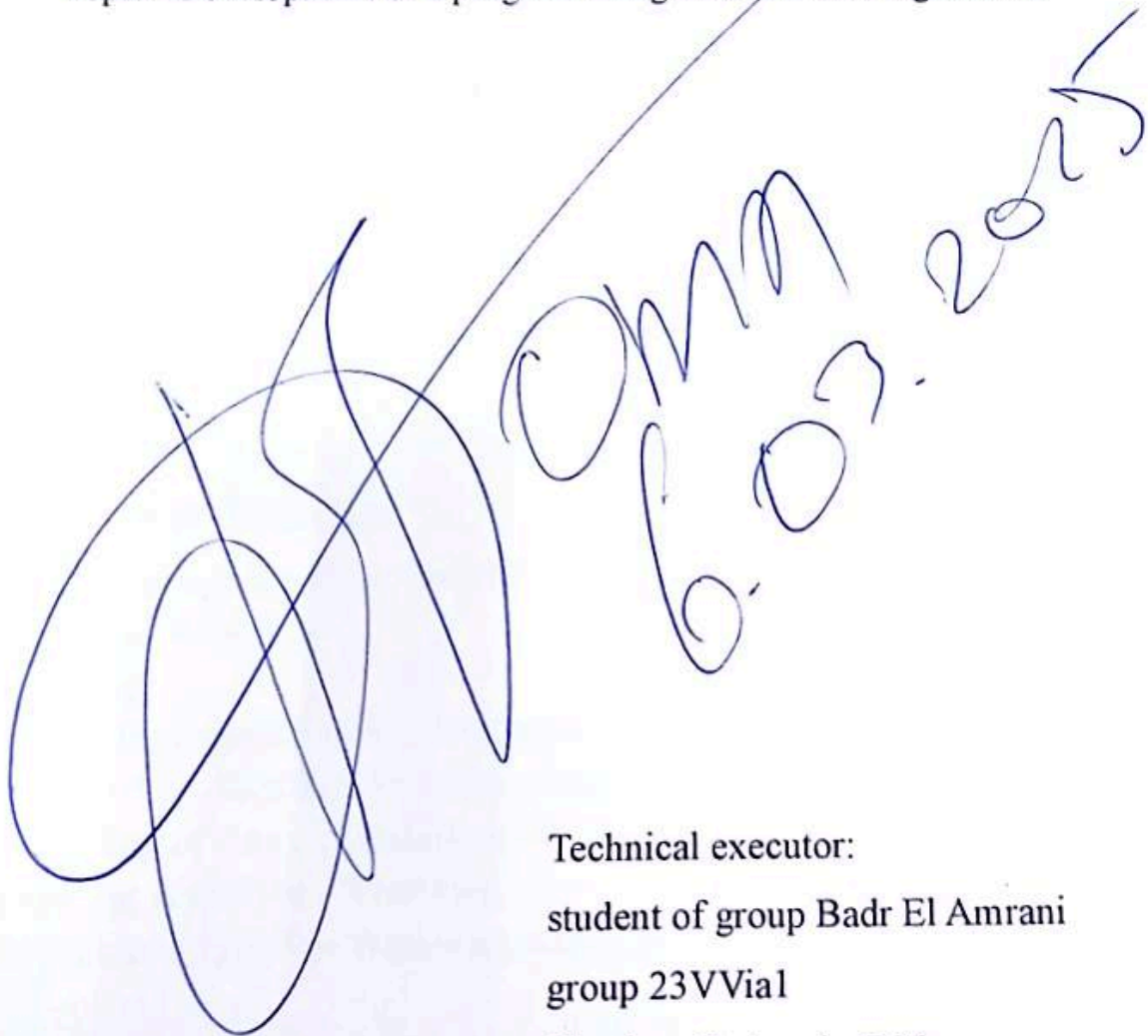
Ministry of Science and Higher Education of the Russian Federation

Penza State University

Department of Computer Engineering

Report on the course work

Topic «Development of a program using data structure algorithm»

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Technical executor:

student of group Badr El Amrani

group 23VVial

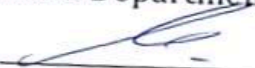
Checker: Fedyunin R.N.

Penza

2025

APPROVED

Head Department of VT

 M.A. Mitrokhin

« ____ » ____ 2024 year

THE TASK LIST

for the course task

Logic and basic of algorithmization in engineering problems

Student Badr El Amrani, Group 23VVia1

Project topic: Development of a program using data structure algorithm.
Simple Data Base.

Initial data (technical requirements) for design Develop is data base with console or GUI interface.

Mandatory program requirements:

1. IDE Visual Studio
2. C language
4. Information input device – keyboard, mouse.
5. The user interface should be based on menus(CLI).
6. Availability of enter, calculate, save, update, delete data.
7. Operating system MS Windows.
8. DSA – Linked List, File Handling, Recursive.

Scope of work for the course

Algorithm part

Program development.

The grafical part

Data diagram, system resource diagram, system operation diagram, hierarchical structure of the program, program interaction diagram.

Experimental part

Debugging the program.

Project completion time by section

According to schedule.

The date of issue of the task is "December 5", 2024.

Project defense date "____"

Teacher Fediunin R.N. _____

Received the task on Dec 5, 2024.

Student Badr El Amrani. _____

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Conclusion

The Restaurant Management System successfully demonstrates a practical implementation of a basic restaurant management solution using the C programming language. It provides an intuitive, menu-driven interface for managing table bookings, menu items, and customer orders. The system's use of structured programming and modular design ensures readability, maintainability, and scalability. However, the program could benefit from enhancements such as improved error handling, data persistence, and additional features like searching and editing customer details. Despite these areas for potential improvement, the

Reference

Books:

- Kernighan, B. W., & Ritchie, D. M. (1988). *The C Programming Language* (2nd ed.). Prentice Hall. (A foundational book for learning C programming, covering concepts and syntax in-depth.)
- Kelly, A., & Pohl, I. (1990). *A Book on C: Programming in C* (4th ed.). Addison-Wesley. (A comprehensive guide to C programming with examples and applications.)

Online Tutorials:

- GeeksforGeeks. (n.d.). *C Programming Basics*. Retrieved from <https://www.geeksforgeeks.org/c-programming-language/> (A resource for C programming concepts, including file handling and structures.)
- TutorialsPoint. (n.d.). *Learn C Programming*. Retrieved from <https://www.tutorialspoint.com/cprogramming/index.htm> (Step-by-step tutorials on C programming basics and advanced topics.)

Documentation:

- Microsoft. (n.d.). *File I/O in C*. Retrieved from <https://learn.microsoft.com> (A guide to file handling operations in C, suitable for Windows development environments.)
- Cplusplus.com. (n.d.). *C Library Functions*. Retrieved from <https://cplusplus.com> (Documentation of standard library functions used in C programming.)

Software Development Tools:

- JetBrains. (n.d.). *CLion IDE*. Retrieved from <https://www.jetbrains.com/clion/> (An integrated development environment for C and C++ programming.)