

Nitro IDE: India's 1st Software Development Platform

Mr. Aditya Purushottam More¹, Mr. Rushabh Ratanlal Kumat², Mrs. N. S. Gite³

Diploma- Information Technology, K.K. Wagh Polytechnic, Nashik, Maharashtra, India¹

Diploma- Information Technology, K.K. Wagh Polytechnic, Nashik, Maharashtra, India²

Project Guide- Information Technology, K.K. Wagh Polytechnic, Nashik, Maharashtra, India³

Abstract: IDEs (Integrated Development Environments) support software developers in their implementation work. However, embedded software has specific requirements, so an off-the-shelf IDE for this purpose does not exist. In such a case, this paper recommends developing a customized IDE based on freeware software. We present a Nitro IDE project of developing such an IDE for the languages C/C++, Java, Python and HTML, JavaScript & many more. We used several open source projects with varying project status as a basis for our development. Today's IDE are mostly not UI friendly to user & having limitation, some are paid still not having new features in that. So, we are developing IDE with all of this improvement & unique features like AI chat & voice bot for helping in development, we analyzed developer communication within these open source projects and identified the benefits and the potential pitfalls for the case study. Moreover, we present the effort made in terms of person months and that reuse of open source software improves cost-efficiency for the development of such IDEs.

Keywords: Integrated Development Environment, IDE, Code Editor, Software Development, Artificial Intelligence, Programming, coding

I. INTRODUCTION

This Project will develop for developers, now days developers are using various IDE like Vs code, Sublime text, others but problems is that to set workspace for creating project is very complex. Configure for project any programming language & link compiler is also complex process & one more problem in colleges/schools Turbo C uses for C/C++ development. Turbo C is very old IDE which discontinued 27 year ago. If user want write same Turbo C code on modern IDE that not possible. Because of C/C++ is updated but for learning language, anyhow condition users use Turbo C. Configure for project any language & link compiler is also complex process & no built-in help available, only little bit automation is available. solve this all issues we are developing Nitro IDE. Nitro IDE will be future of development. This having Modern UI, Light Weight, Plug & Play. IDE design for professionals, for big scale projects. This having features of Nitro Teams for build with your team & C/C++ converter. This IDE will be most light weight IDE. This will be one of the Best IDE of World.

II. WHAT IS IDE?

An integrated development environment (IDE) is software program for constructing packages that combines common developer tools into a single graphical consumer interface (GUI). An IDE usually includes.

1. **Source Code Editor:** A text editor that can assist in writing software code with features such as syntax highlighting with visual cues, providing language specific auto-completion, and checking for bugs as code is being written.
2. **Local build automation:** Utilities that automate simple, repeatable tasks as part of creating a local build of the software for use by the developer, like compiling computer source code into binary code, packaging binary code, and running automated tests.
3. **Debugger:** A program for testing other programs that can graphically display the location of a bug in the original code.



An IDE allows developers to start programming new applications quickly because multiple utilities don't need to be manually configured and integrated as part of the setup process. When every utility is represented on the same workbench, developers don't have to spend hours learning how to utilise different tools independently. This is particularly valuable for onboarding new engineers, who may use an IDE to learn about a team's standard tools and workflows. In reality, most IDE capabilities, such as intelligent code completion and automatic code creation, are designed to save time by eliminating the need to write out whole character sequences. Other popular IDE features are designed to help developers in organising their work and resolving issues. IDEs parse code as it is written, allowing for real-time detection of problems caused by human mistake. Developers can perform activities without switching between programmes because utilities are represented by a single GUI. Most IDEs have syntax highlighting, which uses visual clues to discern grammar in the text editor. Class and object browsers, as well as class hierarchy diagrams for some languages, are included in several IDEs.

III. EXISTING IDES & THEIR PROBLEMS

In this IDEs market, many big companies are in top like Microsoft's Visual Studio, JetBrains's IntelliJ Idea, Sublime Text, etc. But still they not providing some innovative features to developers which helps developers. But problem is while downloading IDE we have to go through various process like compiler setup, Environment variable path and so on.

Existing IDEs having many problems listed below:

1. Setting IDE for first use download & configure compilers, set path variables takes too time & complex for beginner
2. No built-in help available for development
3. Little bit automation available
4. Need multiple IDEs for multiple programming language
5. Turbo C code not supported in modern IDEs
6. Heavy hence Takes too time to load
7. Takes more memory space
8. Size of IDE is high

IV. INTRODUCTION TO NITRO IDE

To solve problems of existing IDEs, we are introducing a new IDE which is India's 1st IDE called **Nitro IDE**. Nitro IDE is similar to another modern IDE. Which have all this feature which already available in modern IDEs like Text Editor, Terminal, Debugger, Build options, Auto code suggestions, user friendly dark mode GUI. All basic functionality of any IDE is included. Plug & Play functionality is given user don't need to settings, download anything separately, all tools & compilers are built -in. In Nitro IDE user can code in multiple tabs & multiple files. Project directory menu is also given for see different files of project. Bottom side menu of IDE can be minimize & maximize. Which contains Terminal, Build, Even Logs Terminal is for advance command-based execution of program. Build tab show programs output/errors. Event logs contains all logs like project create date, last build time, etc. Text editor is having beautiful syntax highlighting option with auto code suggestion while typing code, it saves user time. Help to build programs easy & fast.

Features of Nitro IDE:

1. Nitro Teams:

It is team collaboration tool, in this multiple user can connect each other & code simultaneously without any Online servers. Chat with others team members while development.

2. C/C++ Converter:

In this tool user can convert their code in C to C++ or vice-versa. No need to code again saves user time.

3. Nitro C/C++ Compiler (NCC):

1st time in history of modern IDEs, we are introducing built in modded version of Turbo c compiler called NCC (Nitro C/C++ Compiler) for education in school/colleges. It supports full code of Turbo C. it based on old C/C++ Version only. It compiles code like Turbo C 16-bit exe file can be run using DOSBOX. It is substitute of Turbo C for education in school/ colleges. NCC is only for education, learning, small projects.



4. Other Language Compilers:

Other language compilers are standard compilers there is no change in that. For C/C++ NCC & GCC are two compilers available. GCC is modern compiler for C/C++, it recommended for development projects. NCC is only for education, learning, small projects.

V. IDE OUTPUT



Fig. 1 Loading Screen

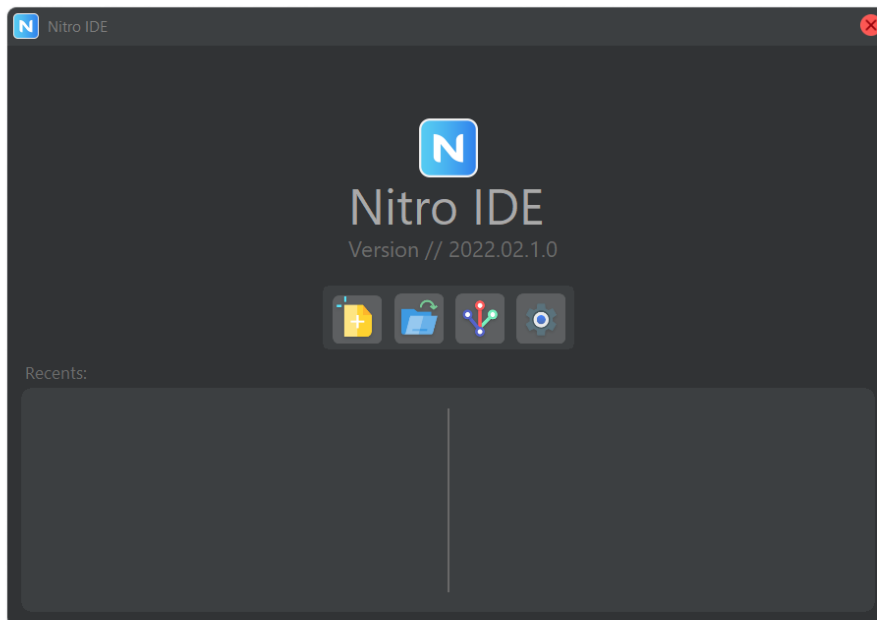


Fig. 2 Main Menu Screen

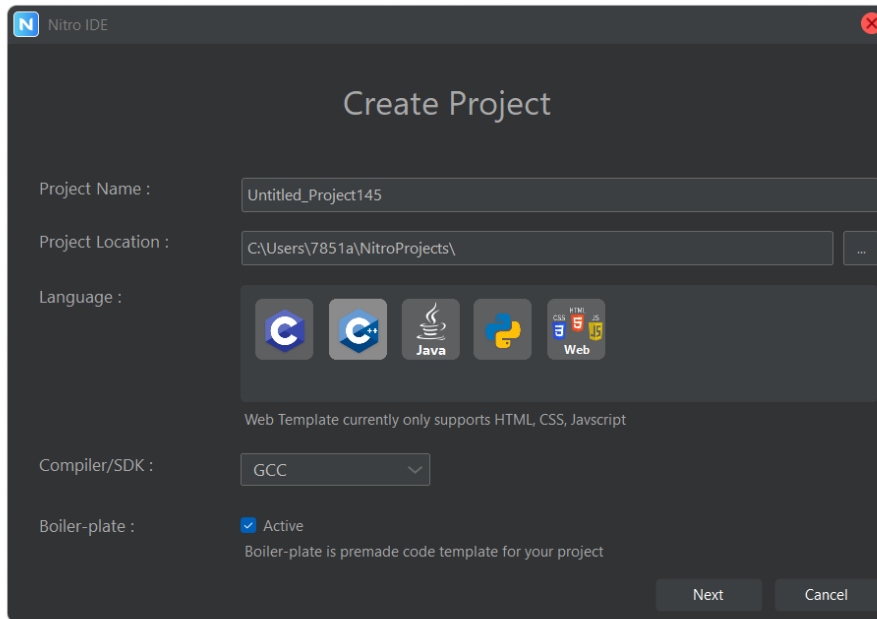


Fig. 3 Create Projects Screen

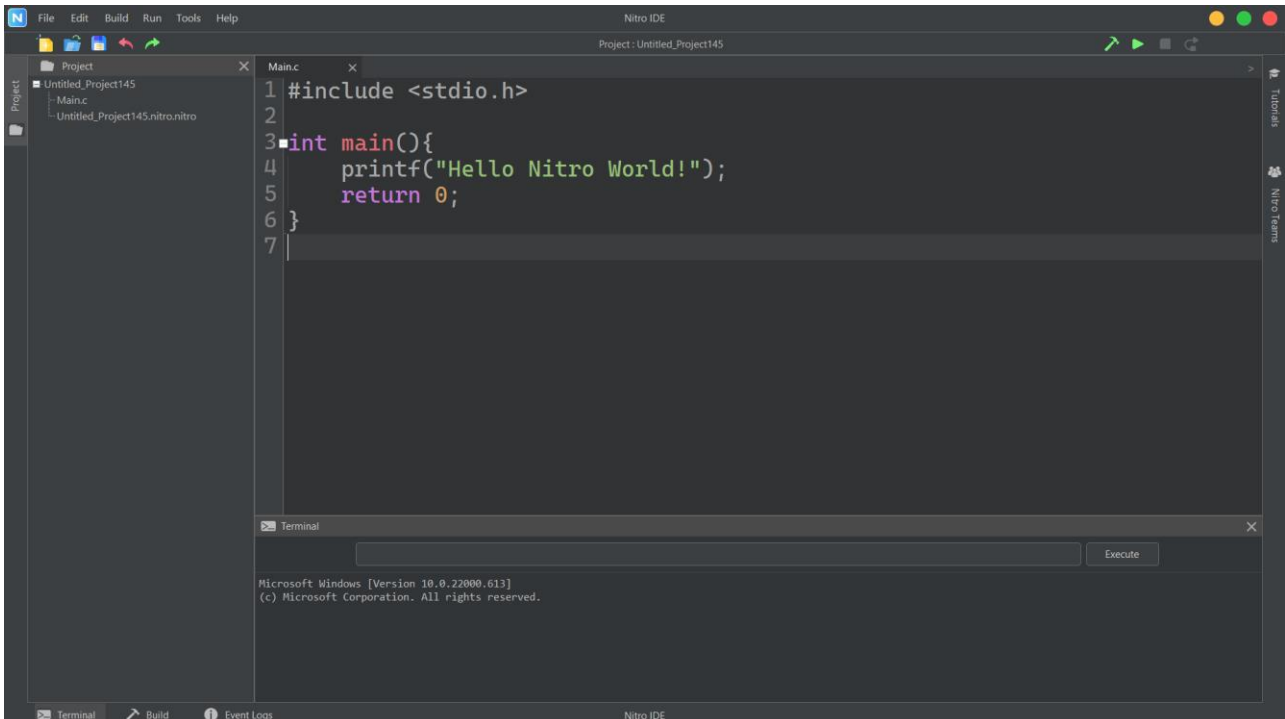


Fig.4 Main IDE Screen

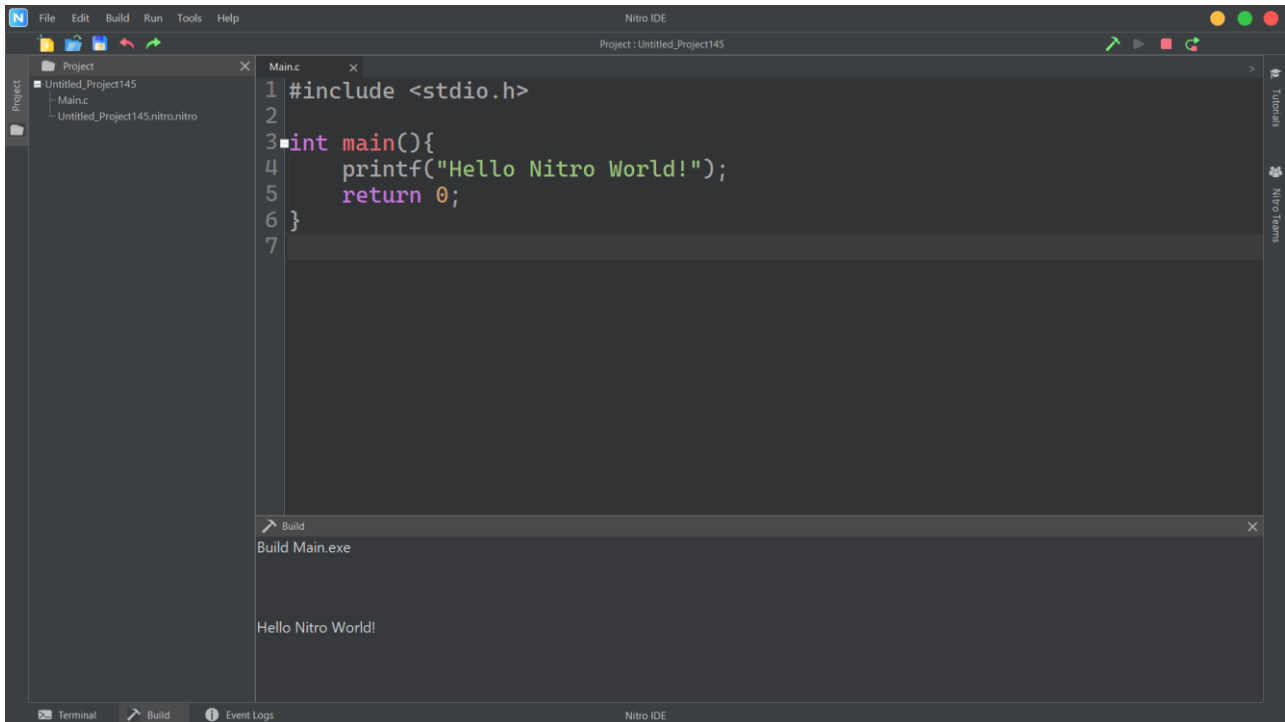


Fig. 5 Build Successful Screen

VI. CONCLUSION

This is our Nitro IDE, which solves issue that developers need or facing from years. before no any major innovations are coming in IDEs. Now developers can use Nitro IDE for future development projects with use of new features introduced. Now, in education sector school/colleges have new substitute for Turbo C, which can compile same code. This is India's 1st IDE & World's 1st IDEs which have this kind of functionality.

ACKNOWLEDGMENT

Nitro IDE today is in reality because of our supporters specially Mr. S.S. Dhoot, Mrs. N. S. Gite, Mrs D.D. Pawar. Then thanks to Bill gates, Steve Jobs, Mark Zuckerberg your biography motivates us really to do innovative, Creative, new. Thank you Sandip Maheshwari to motivates, encourage us. Also thank you to our haters. Without all of this we can't make this project. At the last Thanks to our company, Adisoft Team to contribute in this specially Mr.Aditya More, Mr. Rushabh Kumat, Mrs N.S. Gite.

REFERENCES

- [1]. J. desRivieres and J. Wiegand, "Eclipse: A platform for integrating development tools," in IBM Systems Journal, vol. 43, no. 2, pp. 371-383, 2004, doi: 10.1147/sj.432.0371.
- [2]. D. Ertl and H. Krapfenbauer, "A Case Study of Developing an IDE for Embedded Software Using Open Source," *2009 Fourth International Conference on Software Engineering Advances*, 2009, pp. 191-196, doi: 10.1109/ICSEA.2009.38.
- [3]. Dagdeviren, Huseyin & Juric, Radmila & Ogunleye, Olabisi & Tesanovic, Igor. (2007). ANALYSIS OF INTEGRATED DEVELOPMENT ENVIRONMENTS FOR J2EE APPLICATIONS.



BIOGRAPHY



Name: Mr. Aditya Purushottam More

Founder: Adisoft (Start-up)

Qualification: Diploma in Information Technology

Interests: Technology, IT Company, Programming, Android App & Game Development



Name: Mr. Rushabh Ratanlal Kumat

Qualification: Diploma in Information Technology

Interests: Technology, Programming, Web-Development



Name: Mrs. N. S. Gite

Qualification: M.E. Computer

Interests: Data Science, Image Processing, Video Watermarking