
📘 Bangla Programming Language – User Manual

🪪 Project Title:

Bangla Programming Language Translator

👤 Author:

Abdullah
Student ID: CE23011
Department of CSE, MBSTU

📌 Purpose of This Manual

This user guide is designed to help beginners, students, and enthusiasts understand how to use the **Bangla Programming Language (BPL)** — a custom system that allows users to write programs using Bangla script and translate them into valid C programs.

📎 What You Need

Before getting started, make sure you have:

- ✅ `translator.exe` – The executable translator program
- ✅ `run.bat` – A batch file for easy one-click execution
- ✅ A `.bpl` file – Your Bangla source code file written in any text editor (Notepad, VS Code, etc.)
- ✅ GCC Compiler installed (MinGW recommended)
- ✅ Windows OS with UTF-8 support

🖊️ How to Write a Program

- Write your Bangla program using the predefined **Bangla keywords**.
- Save it with a `.bpl` extension. Example: `hello.bpl`
- You can use **Bangla variable names**, **Bangla comments**, and **Bangla function calls** as long as they follow the structure.

⚙️ How to Run the Program

✅ Option 1: Drag & Drop

1. Drag your `.bpl` file onto the `run.bat` script.
2. It will automatically:
    - Translate your Bangla program into C.
    - Compile it with GCC.
    - Run the resulting `.exe` file and show output.

✅ Option 2: Manual Run

1. Open `cmd` or terminal in the directory.
2. Run:

```
run.bat yourfilename.bpl
```

🧪 Sample Program (Bangla)

```
লাগাও <io>
পূর্ণ সংখ্যা = 10;

যদি (সংখ্যা > 5) {
    লেখ("সংখ্যা বড়\n");
} নাহলে {
    লেখ("সংখ্যা ছোট বা সমান\n");
}
```

⚡ Output (Translated to C)

```
#include <stdio.h>
int main() {
    int সংখ্যা = 10;
    if (সংখ্যা > 5) {
        printf("সংখ্যা বড়\n");
  } else {
        printf("সংখ্যা ছোট বা সমান\n");
  }
  return 0;
}
```

🔑 List of Supported Bangla Keywords

Below is the full list of keywords and their C equivalents.

Bangla Keyword	C Equivalent
যদি	if
নাহলে	else
যতক্ষণ	while
জন্য	for
থামাও	break
চালাও	continue
ফেরত	return
পূর্ণ	int
ভগ্ন	float
বড়_ভগ্ন	double
বর্ণ	char
খালি	void
ঠিক	bool
লেখো	printf
নাও	scanf
নির্দেশ	#define
সমান_সমান	==
সমান	=
সমান_নয়	!=
বড়	>
ছোট	<
বড়_সমান	>=
ছোট_সমান	<=
যোগ	+
বিয়োগ	-
গুণ	*
ভাগ	/
ভাগশেষ	%
বা	||
এবং	&&

Bangla Keyword	C Equivalent
নয়	!
সত্য	true
মিথ্যা	false
নির্বাচন	switch
ক্ষেত্রে	case
চলবে	default
স্ট্রাক্ট	struct
এনাম	enum
ম্যালোক	malloc
ফ্রি	free
ফাইলখোল	fopen
ফাইলবন্ধ	fclose
ফাইললেখ	fprintf
ফাইলপড়	fscanf
প্রধান	main
লাগাও	#include
লাইব	stdlib.h
সটডিও	stdio.h
গণিত	math.h
স্ট্রিং	string.h

💡 Features Supported

- ✔ Full C program structure (`main`, headers, variables, loops, etc.)
- ✔ Transliteration of Bangla variable names into Romanized equivalents
- ✔ Conditionals, loops, structs, functions, file handling
- ✔ Automatic `.c` file and `.exe` file generation
- ✔ UTF-8 character handling

📘 How to Write Code in the Bangla Programming Language

This section is specially designed for **beginners** who may have never written a program before. Even if you don't know C, you can still learn how to write code using **Bangla syntax** naturally and logically.

Think of this as your first programming tutorial — but in your own language.

🧠 What Is a Program?

A program is a set of instructions you give to the computer. It tells the computer what to do — like show a message, calculate something, or make a decision.

In our case, we are writing those instructions using **Bangla keywords**, and the system will translate it into real C code and execute it.

🧱 Program Structure

Every program in this system must follow this basic structure:

```
লাগাও <সটডিও>          // This includes input/output functions (like writing on screen)

শুরু()
{
   // Your code will go here
}
```

✍️ Example 1: Displaying a Message (Output)

লাগাও <সটডিও>

```
শুরু()
{
    লেখ("এইটা আমার প্রথম প্রোগ্রাম!\n");
}
```

🧾 **What it does:** Prints:
এইটা আমার প্রথম প্রোগ্রাম!

🧠 **Keyword Used:**

- লেখ() = `printf()` in C — used to show something on the screen

📥 Example 2: Taking User Input

লাগাও <সটডিও>

```
শুরু()
{
    পূর্ণ সংখ্যা;

    লেখ("একটি সংখ্যা দাও: ");
    নাও("%d", &সংখ্যা);

    লেখ("তুমি লিখেছো: %d\n", সংখ্যা);
}
```

🧠 **What's happening:**

- পূর্ণ = `int` (an integer number)
- নাও() = `scanf()` — takes user input
- &সংখ্যা means the address of the variable where the input will be stored

---

➕ Example 3: Simple Math Operation

লাগাও <সটডিও>

```
শুরু()
{
    পূর্ণ a = 5;
    পূর্ণ b = 3;
    পূর্ণ যোগফল = a + b;

    লেখ("ফলাফল: %d\n", যোগফল);
}
```

💡 You can use these math symbols:

- `+` → যোগ
- `-` → বিয়োগ
- `*` → গুণ
- `/` → ভাগ

🔄 Example 4: Conditional Logic (If-Else)

লাগাও <সটডিও>

```
শুরু()
{
    পূর্ণ সংখ্যা = 10;

    যদি (সংখ্যা > 0) {
        লেখ("সংখ্যা ধনাত্মক\n");
    } নাহলে {
        লেখ("সংখ্যা ঋণাত্মক বা শূন্য\n");
  }
}
```

🧠 **Explanation:**

- `যদি` = `if`
- `নাহলে` = `else`
- You can compare values using:
    - `>` (বড়)
    - `<` (ছোট)
    - `==` (সমান)
    - `!=` (সমান নয়)

🔁 Example 5: Looping with `for` (jonno)

লাগাও <সটডিও>

```
শুরু()
{
    পূর্ণ i;

    জন্য (i = 1; i <= 5; i++) {
        লেখ("%d\n", i);
  }
}
```

🧠 This runs the loop 5 times and prints numbers from 1 to 5.
Here:

- জন্য = `for`
- `i++` means increase i by 1 every time

📦 Example 6: Writing Your Own Function

লাগাও <সটডিও>

```
পূর্ণ যোগ_করো(পূর্ণ x, পূর্ণ y) {
    ফেরত_দাও x + y;
}

শুরু()
{
    পূর্ণ ফল = যোগ_করো(4, 6);
    লেখ("ফলাফল: %d\n", ফল);
}
```

🧠 You just created your **function** that adds two numbers!

- `ফেরত_দাও` = `return`
- `যোগ_করো` is the name of your function

🧱 Supported Concepts So Far:

Concept	Bangla Syntax	Meaning
Print output	লেখ()	Show message
Take input	নাও()	Take user input
Integer type	পূর্ণ	Whole number
If condition	যদি (...) {}	Do this if true
Else condition	নাহলে {}	Otherwise do this
Loops	জন্য (...)	Repeat code
Functions	পূর্ণ যোগ() etc.	Custom blocks

✅ Tips for Beginners

- Use a **Bangla keyboard** or Google Input Tools to type Bangla.
- Don't forget to **save the file as `.bpl`** — not `.txt`.
- Always start your code with লাগাও <io> and শুরু() block.
- You can write **comments** in Bangla using `//` like:
  `// এটা একটি মন্তব্য`

🧱 Limitations

- ❌ No runtime input in Bangla
- ❌ No GUI support (command-line only)
- ❌ Currently supports only C as the target language

🚀 Future Improvements

- Python and JavaScript translation
- GUI code editor for Bangla
- Error messages in Bangla
- IDE plugin or web version

🙋‍♂️ Support & Contact

For help, suggestions, or contributions, contact:

📧 **abdullahiar2811@gmail.com**
📞 **+8801789530491**