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C WRAPPER USING UNICODE

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***ABSTRACT*:**

Problem classification, algorithm design, logic, reasoning, and other language-independent skills make up the Art of Programming (AOP). AOP is strongly reliant on learners' familiarity with the English language because the syntaxes of nearly all commonly used programming languages were built using the English language. This creates a dilemma for non-native English speakers (NELs) and those who speak English as a second language (ESLs) who want to learn how to code. In India, where Hindi is one of the official languages and the majority of students are either NELs or ESLs, teaching or learning to programme is challenging. With this in mind, we created the "Hindi coder" web tool for programmers, which allows them to code using Hindi keywords.

INTRODUCTION:

India is a country with unity in diversity. This means that different sections of the country speak distinct languages. There are 14 official languages, with Hindi being the most widely spoken A few additional languages use the same script

Translation is the art of rendering a piece of 1 language into another and is as old as written literature. AI is defined because the translation of 1 tongue text to a different language using computers without affecting the meaning of the text in keeping with Nirenberg, the pc must be ready to produce the target language text from an input of the linguistic communication text in such a fashion so the meaning of TL text is the same as that of the SL text. AI is an automatic process within which a translation job is completed by Computer Software. artificial intelligence is an application of computational linguistics. linguistics is an interdisciplinary field of technology and requires language and computer experts.

In terms of content, quality, and quantity, Hindi literature is diverse. With the ad advancement of the internet, literary sharing has become more common, leading to an increase in demand for literature availability. Hindi's popularity and acceptance are also increasing as a result of the content being provided in Unicode format. The Hindi wordnet, which was modelled after WordNet, focuses on the lexical and semantic relationships between Hindi words and phrases. A restricted or regulated form of any natural language is referred to as a controlled natural language (CNL) (NL). A Control Natural Language is created by extracting a subset of rules and vocabulary from the source natural language's entire set of rules and vocabulary. We designed this project based on this notion, in which we will extract a limited number of Hind words from the Unicode standard. The Unicode Standard is an information technology standard that ensures that text expressed in different

writing systems is encoded, represented, and handled consistent

Transliteration is the transformation of text from one script into another script. for example, transliteration of the word 'India' in Devanagari (Hindi) script is '**इंडिया**' Transliteration is concerned with accurately representing a character from one script to another. Translation and transcription are not the same as transliteration. While translation focuses on converting one linguistic communication text to a different tongue text without compromising the precise meaning of the text being translated, transcription is the process of mapping the language's sounds (spoken words or sentences) into writing. The only change in the transliteration process is the script, although the letters' pronunciation remains equal or almost identical if the accurate pronunciation isn't achievable inside the target script; one example is the transliteration of Arabic to other scripts such as English.

Keeping these concepts in mind, we developed the "Hindi coder" web app

LITERATURE SURVEY:

1. Kapil Kumar and Birendra Kumar Joshi split Hindi words into constituent atomic symbols or basic letters and modifiers in their paper "An Intelligent Text editor for Hindi assisted Micro-Parsing." A mapping between Hindi Micro-Parsing and Unicode has been constructed because most Hindi content on the web is in Unicode and most software tools support Unicode.

2. The second reference paper, "Conversion between Hindi and Urdu," was published by the Saudi Electronic University's Shahnawaz College of Computing and Informatics, with MT as the most relevant subject of study. To convert text written in Hindi to Urdu, they must apply direct

3.Warangkhana Kimpan, Theerasak Meebunrot, and Busaya Sricharoen wrote the paper "Online Code Editor on Private Cloud Computing." The trio's use of cloud computing allows them to bring all of an IDE's capabilities into a cloud-based solution for individuals who don't have access to powerful PCs.

4. In The paper published by Sashank Sridhar and Sowmya Sanagavarapu titled "A Compiler-based approach for linguistic communication to code conversion", the authors use NLP – Language Processing.

PROPOSED SYSTEM:

Application

- Hindi coder is a Hindi programming language that offers all of the essential features of a modern programming language. From for loops to while loops, functions to conditional expressions, there's a lot to learn. It allows anyone with a smartphone or computer to begin coding.
- The first step within the application process is to type in your code in Hindi/Devanagari text within the designed computer program. The user must use proper Hindi keywords so as for the implementation of the second step.
- The second step happens within the backend, where the Hindi keywords are translated into the quality English keywords with the assistance of Java programming language, artificial intelligence, transfer-based MT, Corpus-based computational linguistics,and knowledge-based computational linguistics.
- In the third and final step, the translated English keywords are compiled employing a compiler and therefore the user gets their output.

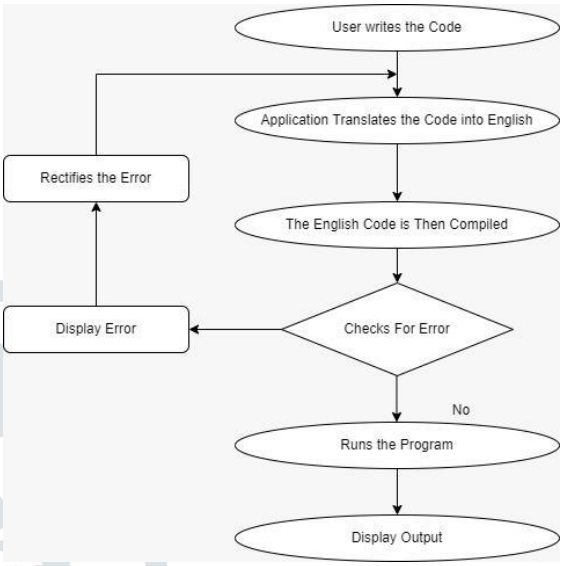

Fig 1: System Architecture

ALGORITHM USED :

NLP (Natural language Processing) :-

Natural language processing (NLP) is the ability of computer software to interpret both spoken written natural speech, often known as natural language. It's a part of AI (artificial intelligence) (AI).

Natural language processing algorithms help computers by simulating the ability of humans to understand language.

Tokenization:

The Initial Process in NLP is tokenizations and what it does is helps in breaking down a text

string into semantically meaningful units.

The name for these units is tokens. Eg:

Raw text: “““ **ममम ममम ममम ममम** ””” Tokenized Text: [‘**ममम**’ ‘**ममम**’ ‘**ममम**’

‘**ममम**’] Translation and Transliteration:

The process to convert an original or "source" text into a text in another language is termed translation.

Transliteration is the way of transforming a word written in one language into a word

written in another language's alphabet

This will be helpful as some words don’t have exact translations into other words.

PROCESS FLOW:

STEP 1: On Home Screen: Click on Start Coding

Fig 2: Home Screen for Hindi coder

STEP 2: Coding Screen

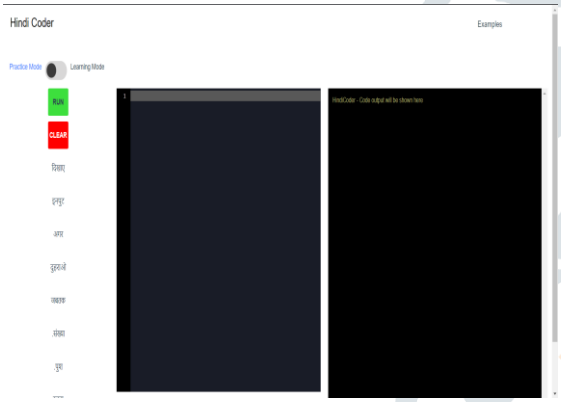

Fig 3: Coding screen

STEP 3:Type your code using prompts given on the left-hand side of the coding screen.

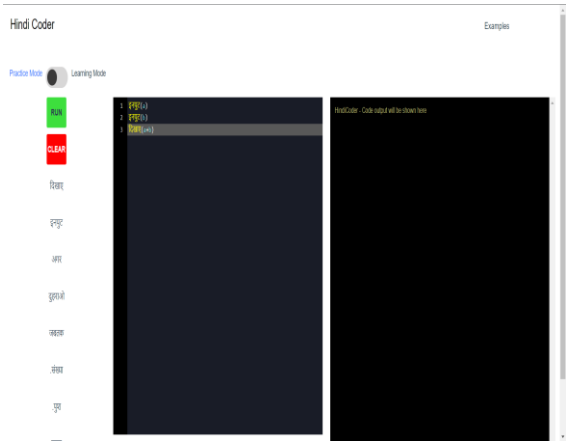

Fig 4: Typing the code with the help of prompts

STEP 4: Run the code by clicking on the Run button and the browser will prompt you to enter the value for '**a**'

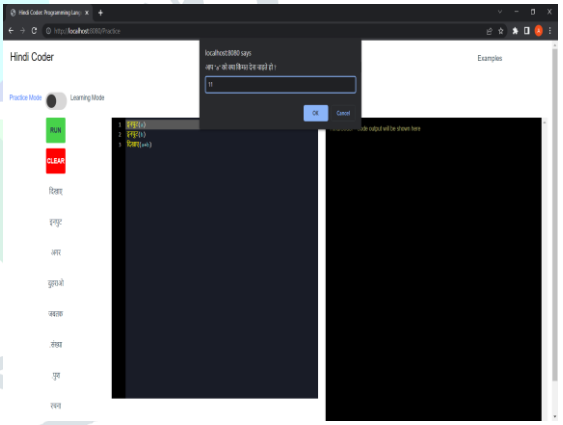

Fig 5: Running the program

Step 5: Enter the value for '**b**' as The browser prompts to enter the value for '**b**'

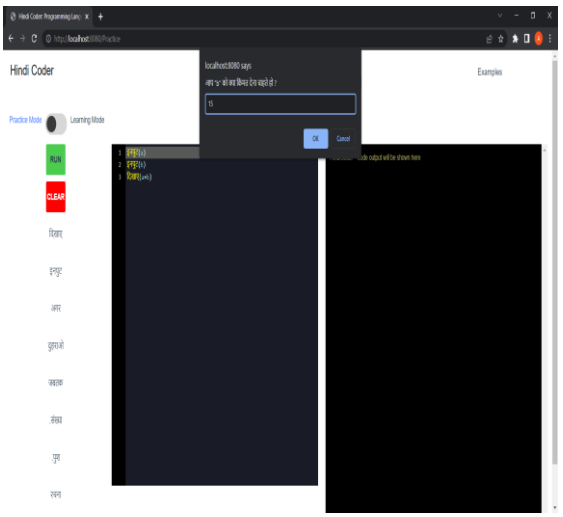

Fig 6: Entering the Value for **b**

Step 6: The Output is displayed on the Output Screen

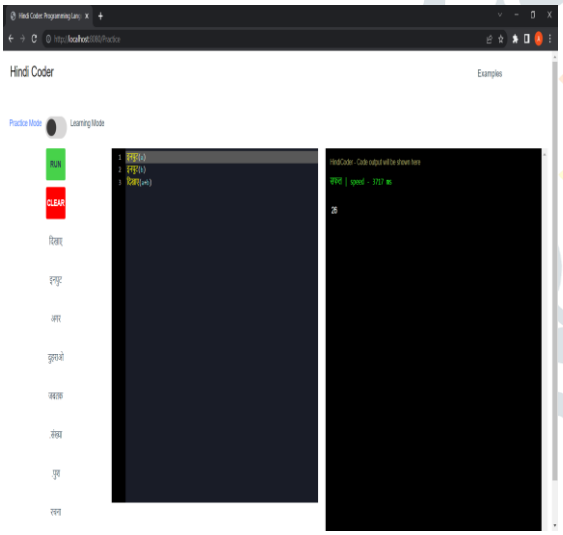

Fig7:Output is displayed

Example Screen:

To help new users there is an example which provides you with sample codes to learn and run codes.

For running Example Codes

Step 1: Open the Examples section by clicking on the Examples button

Step 2: Click on **Run Code** on any of the examples to copy and paste the code on coding screen. We will run the code to repeat a given data.

Fig 8: Examples screen

Step 3: Once the example code is pasted on the coding screen press RUN button to run the code

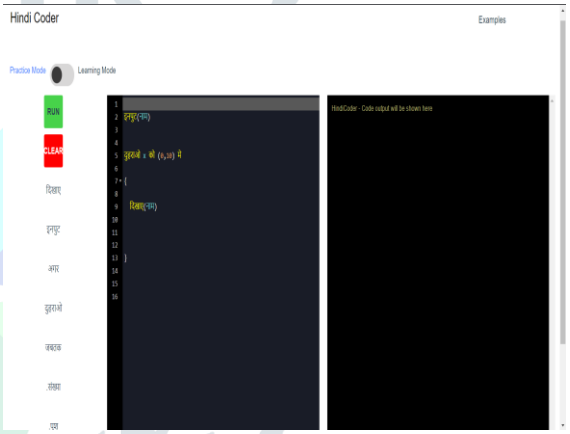

Fig 9: Example code pasted on the coding screen

Step 4: Enter the data that you want to be repeated by the code

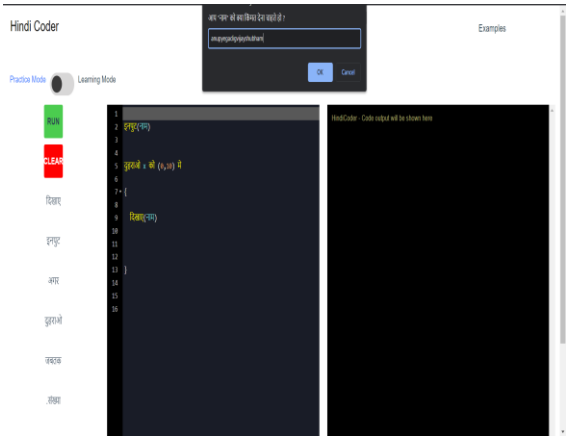

Fig 10: Entering the data into the prompt

Step 5: The output of the code will be displayed on the output screen in this case the data will be repeated 10 times

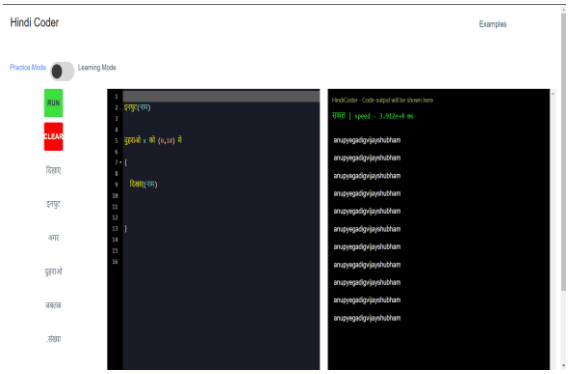

Fig 11: Output being displayed

Learning Mode:

Learning mode is added to make the user aware of what is being done in the program step by step.

Step 1: Learning mode can be started by toggling the learning mode switch

Step 2: Run the program

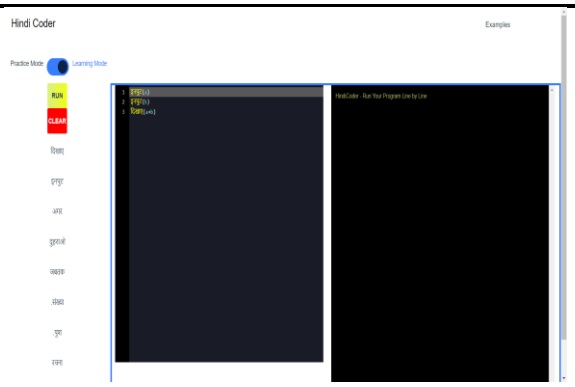

Fig 12: Learning mode screen

Step 3: Instead of showing the output learning mode will show you what the line of code does on the output screen

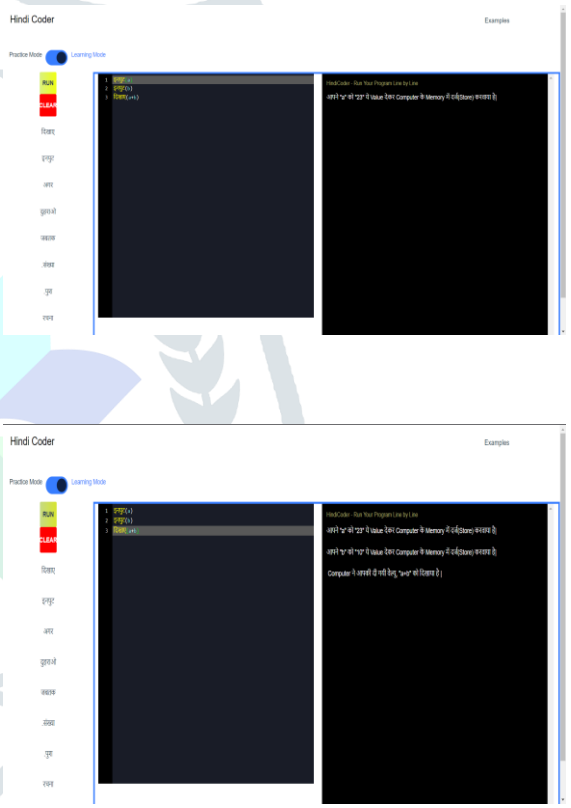

Fig 13: Code details are shown on the output screen line by line

CONCLUSION

Due to a rapid increase in interest for young and old alike for coding and programming, it is essential to make sure that each and everyone gets an opportunity to do so – making a web app that turns user-preferred NL (Natural Language) into machine code (English) makes coding and programming more accessible and interesting for users with ESL (English as a Second Language) and NES (Non-English Speaking)

The solution provided in this paper has tried to overcome this challenge by allowing the user to interact with the Coding environment according to his/her preferred language (Hindi in this case) while the machine interprets and converts it into respective pseudo-code for compilation and execution.

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