RUST

PSAT PROGRAMMING SURVEY

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Outline

HISTORY OF RUST

- Employee of Mozilla Research Graydon Hoare started a personal project in 2006 that eventually turned into Rust.
- As part of the ongoing development of the Servo experimental browser engine, Mozilla started financing the project in 2009.
- Mozilla formally launched the initiative in 2010.
- In the same year, the initial OCaml-based compiler was replaced by a self-hosting Rust compiler based on LLVM.
- 2011 saw the first successful self-compilation of the new Rust compiler.

WHAT CAN I USE RUST FOR

- Rust is effective at handling big volumes of data as well as other CPU-intensive tasks like running algorithms.
- The majority of the time, Rust is better suited for projects that require great performance. Companies including
  1. **Amazon**
  2. **Discord**
  3. **Dropbox**
  4. **Facebook (Meta)**
  5. **Google (Alphabet)**
  6. **Microsoft**

  have all adopted Rust.

PARADIGAM

- Rust is an object-oriented language; impl blocks offer methods on structs and enums while structs and enums hold data.
- According to the Gang of Four's definition of objects, structs and enums with methods provide the same functionality even though they aren't classified as objects.

MASCOT

This is this official logo of rust.

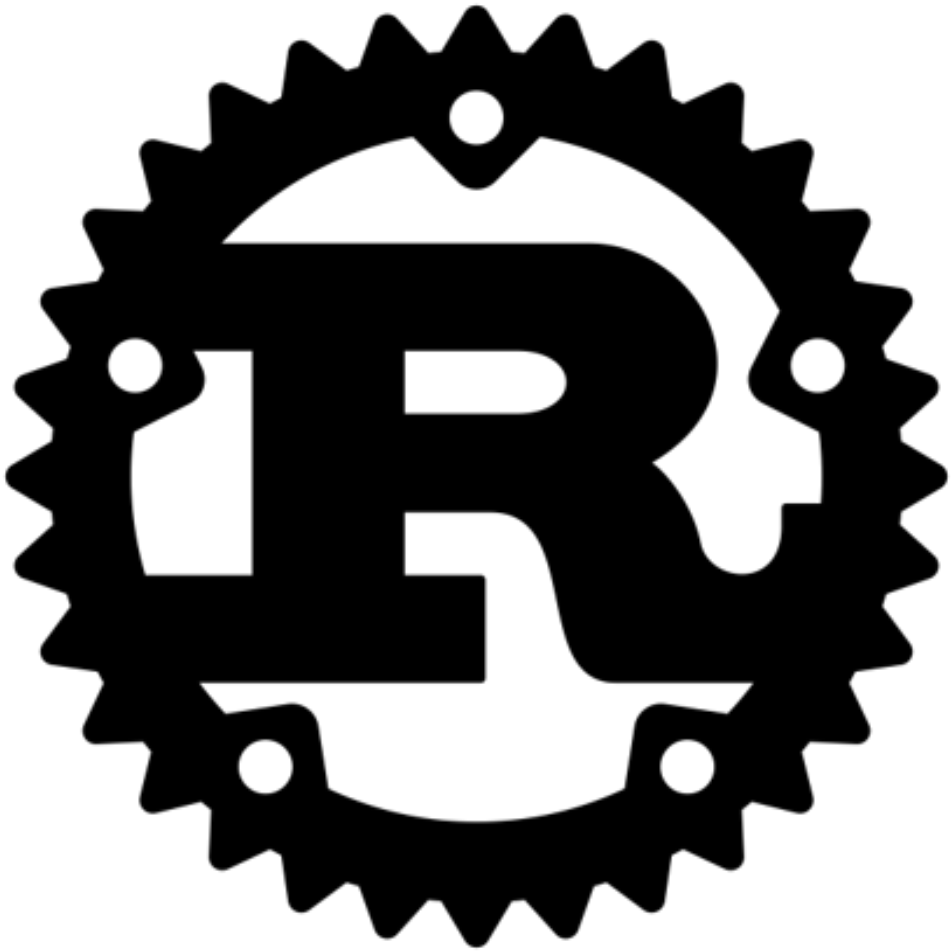

Figure: Rust logo

SYNTAX

```
fn main() {
 println!("Hello, World!");


}
```

Figure: Syntax in VS Code

WHY SHOULD YOU USE RUST

1.Rust increased memory security:

- Performance and safety have become more crucial as the preceding ten years have gone on.
- Memory safety can become an essential component of a programmer's workflow thanks to the tools and methods provided by Rust.
- Your memory will be viewed as immutable by the compiler.
- Additionally, it will assist you in avoiding issues like buffer overflows and other issues that might abound in high-performance software for financial systems and other vulnerable applications.
- Rust will make sure you don't take any needless chances with the stability of your project.

2.Rust is fast and flexible:

- You can create zero-overhead, high-performance code using Rust.
- It has a compiler that is aware of any safety check you might include in your code and will make sure it is compiled into the programme.
- Additionally, it can assist in catching a lot of mistakes during compilation, which is more effective than checking for them at runtime.
- . In addition, Rust programmes may be made to run as quickly as C++ or even faster thanks to its close interaction with the standard library and memory safety measures.

REFERENCES

- https://www.geeksforgeeks.org
- https://google.com
- https://wikipedia.org