

Debugging & Traceability

TEAM ID	NM2023TMID04391
PROJECT TITTLE	BLOCKCHAIN POWERED LIBRARY MANAGEMENT

INTRODUCTION:

- In computer programming and software development, engineers will deploy debugging tools and processes to find and mitigate "bugs" or problems within programs, applications, and systems.
- The word "debugging" was derived in the 1940s when a Mark II computer (Aiken Relay Calculator) malfunctioned, and engineers subsequently found a moth stuck in a relay.

Tracing

- One technique that monitors software in real-time debugging is known as "tracing," which involves a specialized use of logging to record information about a program's execution.
- Programmers typically use this information to diagnose common problems with software and applications.
- Tracing is a cross-cutting concern, meaning it involves aspects of a program that can affect other parts of the same system and, in turn, provides detailed information of the program as it's executed.

- With debug and trace, programmers are able to monitor the application for errors and exceptions without the need for an integrated development environment (IDE).
- In debug mode, a compiler inserts debugging code inside the executable.
- Because the debugging code is part of the executable, it runs on the same thread as the code.
- As a result, it doesn't provide the same efficiency of the code.

Applications

A wide variety of trace apps can provide in-depth insight into every software platform imaginable, with some being platform-specific for systems that utilize Android, Windows, and Linux, among a host of others. Below are several widely used trace applications that incorporate a variety of metrics and analytics for pinpointing bugs along the development chain.

