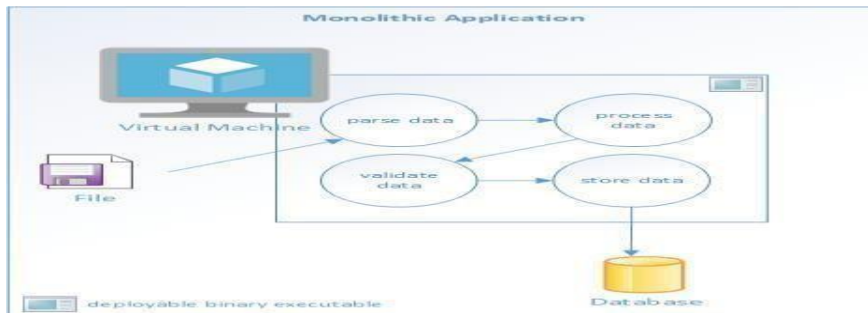# Debugging & traceability

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Team ID	PNT2022TMID17224
Project Name	Project - IoT based Industry -Specific Intelligent Fire Management System
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Debugging & traceability:

- Every computer programmer has run into bugs.

- It comes with the territory. Many bugs are found during the coding process. Others pop up only when an end user performs a specific and unusual sequence of steps or the program receives unexpected data.

- It is highly desirable to find bugs early in the development process, and very important to avoid having end users find your bugs for you. Countless studies have shown that the earlier you find a bug, the easier and less expensive it is to fix.

- **Tracing:**

☐ You can easily trace program execution at either the page or application level. ASP.NET provides an extensible trace log with program lifecycle information.

☐ **Symbolic debugging**

☐ You can step through your program, set breakpoints, examine and modify variables and expressions, and step into and out of classes, even those written in other languages.

Error handling

You may handle standard or custom errors at either the application or page level. You can also show different error pages for different errors.

Event logging

- *Event logging provides system administrators with information useful for diagnostics and auditing*

- Many event logging technologies allow or even require each class of event to be assigned a unique "code", which is used by the event logging software or a separate viewer (e.g., Event Viewer) to format and output a humanreadable message.

- This facilitates localization and allows system administrators to more **Branch Trace:**

- Branch tracing is also available for Pentium 4 Xeon and later Intel processors

- There are dedicated processor commands to enable branch tracing and save executed branches into special Intel Branch Trace Store (BTS) area of resident memory.

- The Branch Trace Store can be also configured to be a circular buffer, so that last executed branches are recorded. Branch tracing on Intel

processors using the Branch Trace Store can cause 40x application run-time slow down

- For the <u>Intel Core M</u> and the 5th Generation of Intel Processors, Intel PT (Processor Trace) has been introduced, which aims to provide a full control flow trace.

- Intel PT is said to have only a minimum impact on the program's execution.