SDM COLLEGE OF ENGINEERING AND TECHNOLOGY

Dhavalagiri, Dharwad-580002, Karnataka State, India.

Email: cse.sdmcet@gmail.com

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

A Report on

ASSERTIONS in C Language

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Submitted By

Mr. Sujay R Bhakri USN: 2SD22CS110

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What is ASSERTION?

Assertions in C are a programming construct used to verify assumptions made by the program. They are primarily used during the development phase to catch programming errors and validate assumptions about the program's behavior.

Syntax:

```
#include <assert.h>

assert(condition);
```

An assertion is typically expressed as a logical condition that the programmer believes to be true at a particular point in the program. If the condition evaluates to false, the program will terminate, and an error message is displayed.

Importance of ASSERTIONS:

- **Early Error Detection**: Assertions help in identifying bugs early in the development cycle by validating assumptions. This makes it easier to fix issues before the software is deployed.
- **Debugging Aid**: During debugging, assertions can provide helpful context when things go wrong. They can clarify where the program's logic fails by showing the exact point of failure.
- **Improved Code Quality**: By enforcing conditions that must be met, assertions encourage better programming practices, leading to more reliable and maintainable code.
- **Control Flow**: Assertions can be used to enforce invariants and control flow, ensuring that certain conditions hold true at critical points in the program.