

# RESEARCH ASSIGNMENT

What is a Variable in C#?

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| Topic        | Variables in C#   |

## Question 1: What is a Variable?

A variable is a named storage location used by a computer program to hold a value. The value stored in a variable can be changed while the program is running. In C#, a variable has a data type, a name, and a value. For example, `int age = 20;` creates a variable named `age` that stores the integer value 20.

### What is a variable in programming?

In programming, a variable is a name given to a particular place in memory where data can be stored and accessed. The programmer uses the variable name instead of having to work directly with the memory location. Variables can store different kinds of data, such as numbers, text, characters, or true/false values.

### Why are variables necessary in a program?

Variables are necessary because programs need to store information and use that information while performing different tasks. For example, a program may need to store a student's name, age, marks, or total score. Variables make it possible to keep these values organized and use them later in calculations, decisions, and other operations.

### How do variables allow a program to store and manipulate data?

Variables allow a program to store data by assigning a value to a variable name. The program can then read the stored value, change it, or use it in an operation. For example, if `int marks = 70;`, the program can calculate a new value by using the variable, such as `marks = marks + 5;`. The value of `marks` then becomes 75. This makes variables useful for calculations, updating information, and controlling how a program works.

Example in C#:

```
int age = 20;
string name = "Sareedo";
double average = 85.5;
```

These examples show that different variables can store different types of information. The data type tells C# what kind of value the variable is expected to contain.