

Advance Programming Techniques (APT)

Lecture # 4

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Methods

- Method
 - Named block of code to perform a specific task
- Method declaration

```
returnType methodName() {  
    // method body  
}
```

Methods

- Method call
- Static Methods (Math functions, Math.PI)
- Method parameters
- Default parameters
- Method returning values
- Named arguments
- Method overloading

Methods

- Pass by Value & Pass by Ref
- New form of method with single line
- The **params** keyword
 - Allows a method to take a variable number of arguments of same type

```
public int Add(params int[] numbers)
{
    int sum = 0;
    foreach (int num in numbers) {
        sum += num;
    }
    return sum;
}
```

```
int total = Add(1, 2, 3, 4, 5); // You can pass any number of integers.
```

Principles of good method design

- Single Responsibility Principle (SRP)
 - A method should do one thing, and do it well. If you can't describe its purpose without using the word "and", it's probably doing too much
- Meaningful Names
 - The method's name should clearly state what it does.
`CalculateMonthlyCompoundInterest` is better than `DoCalc`
- Keep it Short
 - A method should ideally be short enough to view on one screen. This improves readability

Practice Problem 1

- Create following three methods
- Multiply(double a, double b)
- Power(double base, int exponent)
- IsPrime(int number) – returns **true** if number is prime

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