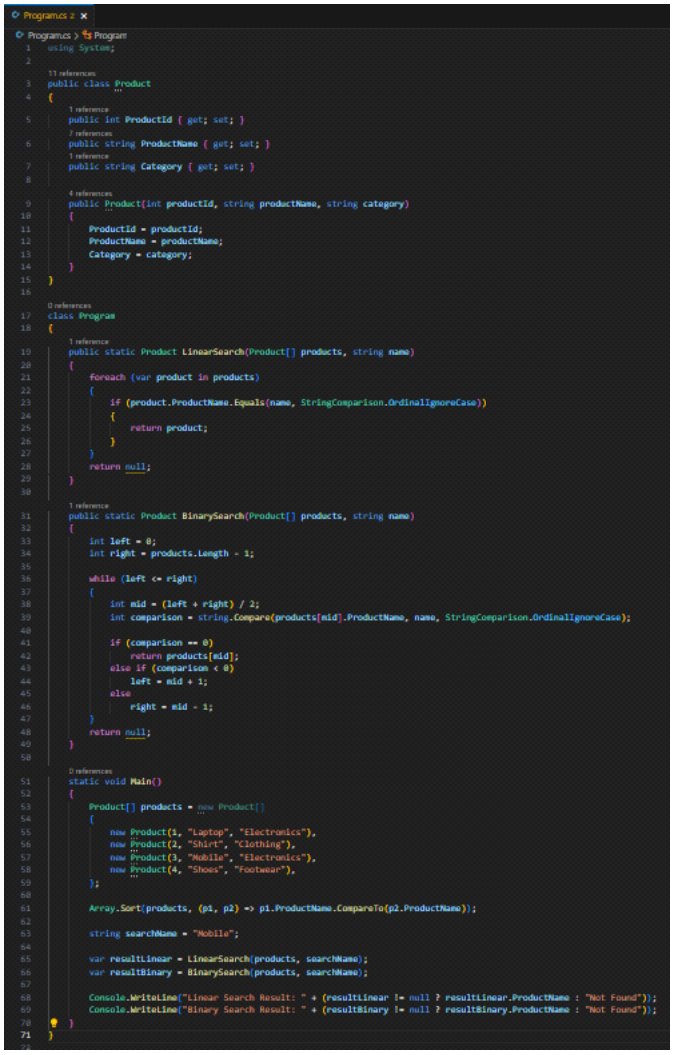
E-commerce Platform Search Function



```
using System;

public class Product
{
    public int ProductId { get; set; }
    public string ProductName { get; set; }
    public string Category { get; set; }

    public Product(int productId, string productName, string category)
    {
        ProductId = productId;
        ProductName = productName;
        Category = category;
    }
}

class Program
{
    public static Product LinearSearch(Product[] products, string name)
    {
        foreach (var product in products)
        {
            if (product.ProductName.Equals(name, StringComparison.OrdinalIgnoreCase))
            {
                return product;
            }
        }
        return null;
    }

    public static Product BinarySearch(Product[] products, string name)
    {
        int left = 0;
        int right = products.Length - 1;

        while (left <= right)
        {
            int mid = (left + right) / 2;
            int comparison = string.Compare(products[mid].ProductName, name, StringComparison.OrdinalIgnoreCase);

            if (comparison == 0)
                return products[mid];
            else if (comparison < 0)
                left = mid + 1;
            else
                right = mid - 1;
        }
        return null;
    }

    static void Main()
    {
        Product[] products = new Product[]
        {
            new Product(1, "Laptop", "Electronics"),
            new Product(2, "Shirt", "Clothing"),
            new Product(3, "Mobile", "Electronics"),
            new Product(4, "Shoes", "Footwear"),
        };

        Array.Sort(products, (p1, p2) => p1.ProductName.CompareTo(p2.ProductName));

        string searchName = "Mobile";

        var resultLinear = LinearSearch(products, searchName);
        var resultBinary = BinarySearch(products, searchName);

        Console.WriteLine("Linear Search Result: " + (resultLinear != null ? resultLinear.ProductName : "Not Found"));
        Console.WriteLine("Binary Search Result: " + (resultBinary != null ? resultBinary.ProductName : "Not Found"));
    }
}
```

OUTPUT:

```
Build succeeded with 2 warning(s) in 4.1s
Linear Search Result: Mobile
Binary Search Result: Mobile
```