

Exercise Questions on delegates in c#

- Q1) Create a delegate `Operation` that takes two integers and returns their sum. Implement a method `Add` and assign it to the delegate. Then, call the delegate to add two numbers.

Example:

```
delegate int Operation(int a, int b);
```

```
Operation add = Add;
```

```
Console.WriteLine(add(5, 3)); // Output: 8
```

- Q2) Define a delegate `Notify` that returns void and takes no parameters. Create two methods `EmailNotification` and `SMSNotification` that print out notification messages. Add both methods to the delegate and invoke them through the multicast delegate.

Example:

```
delegate void Notify();
```

```
Notify notify = EmailNotification;
```

```
notify += SMSNotification;
```

```
notify();
```

- Q3) Create a method `PerformOperation` that accepts a delegate `Operation` and two integers. Call the method by passing delegates for addition and multiplication.

Example:

```
void PerformOperation(Operation op, int a, int b)
```

```
{
```

```
    Console.WriteLine(op(a, b));
```

```
}
```

```
PerformOperation(Add, 3, 5); // Output: 8
```

- Q4) Use an **anonymous method** to create a delegate that multiplies two integers. Assign the anonymous method to a delegate and invoke it.

Example:

```
Operation multiply = delegate(int a, int b)
```

```
{
```

```
    return a * b;
```

```
};
```

```
Console.WriteLine(multiply(4, 5)); // Output: 20
```