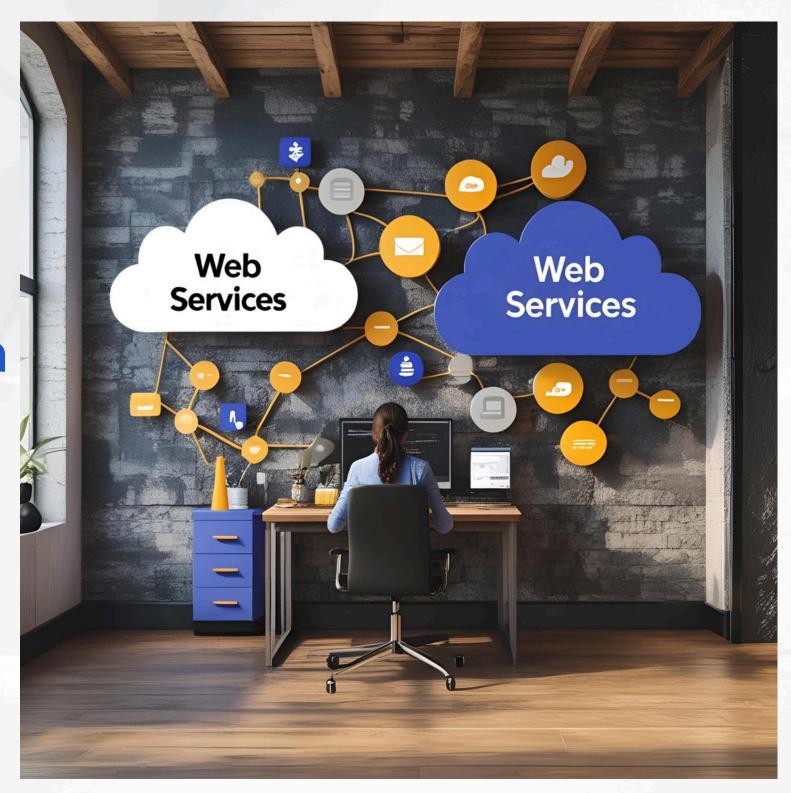# Introduction to Web Services

A Web Service is a method of communication between two devices over the internet. It allows one system to communicate with another.

Two types of Web Services
- **SOAP (Simple Object Access Protocol)**
- **REST (Representational State Transfer)**

SOAP vs RESTful web services

```
POST /UserService HTTP/1.1

<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">

  <soap:Body>

    <GetUserDetailsResponse xmlns="http://example.com/users">

      <User>

        <Id>123</Id>

        <Name>John Doe</Name>

        <Email>john@example.com</Email>

      </User>

    </GetUserDetailsResponse>

  </soap:Body>

</soap:Envelope>
```

```
POST http://api.example.com/users

{

  "id": 124,

  "name": "Jane Doe",

  "email": "jane@example.com"

}
```

@RestController, @RequestBody & @ResponseBody

```java
@RestController
@RequestMapping("/api")
public class UserController {

    @GetMapping("/users/{id}")
    public ResponseEntity<User> getUserById(@PathVariable("id") Long id) {
        User user = userService.getUserById(id);
        return ResponseEntity.ok(user);
    }


    @PostMapping("/users")
    public ResponseEntity<User> createUser(@RequestBody User user) {
        User savedUser = userService.createUser(user);
        return ResponseEntity.status(HttpStatus.CREATED).body(savedUser);
    }
}
```