

Go Movies CRUD Project Summary

Project Structure

```
go-movies-crud/
├── main.go      --> Main application logic
├── go.mod       --> Go module file (manages dependencies)
├── go.sum       --> Dependency checksums
└── go-movies-crud.exe --> Compiled binary (for Windows)
```

Technologies Used

- **Go (Golang):** The programming language used for the backend.
 - **Gorilla Mux:** A powerful URL router and dispatcher for Golang.
 - **Encoding/JSON:** For parsing and generating JSON data.
 - **net/http:** Core HTTP functionality.
 - **Postman / curl:** For testing REST endpoints (optional).
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Data Models

```
type Movie struct {
    ID      string `json:"id"`
    Isbn    string `json:"isbn"`
    Title   string `json:"title"`
    Director *Director `json:"director"`
}
```

```
type Director struct {
    Firstname string `json:"firstname"`
    Lastname  string `json:"lastname"`
}
```

API Endpoints

Method	Endpoint	Description
GET	<code>/movies</code>	Fetch all movies
GET	<code>/movies/{id}</code>	Fetch a single movie
POST	<code>/movies</code>	Create a new movie
PUT	<code>/movies/{id}</code>	Update an existing movie
DELETE	<code>/movies/{id}</code>	Delete a movie

Router Setup

```
r := mux.NewRouter()
r.HandleFunc("/movies", getMovies).Methods("GET")
r.HandleFunc("/movies/{id}", getMovie).Methods("GET")
r.HandleFunc("/movies", createMovie).Methods("POST")
r.HandleFunc("/movies/{id}", updateMovie).Methods("PUT")
r.HandleFunc("/movies/{id}", deleteMovie).Methods("DELETE")
```

Server Initialization

```
http.ListenAndServe(":8000", r)
```

This starts the server on port `8000`.

Key Concepts Demonstrated

- Basic CRUD operations in Go
- RESTful API design
- JSON request parsing and response encoding
- URL parameters handling using Gorilla Mux

- Random UUID/string generation for movie IDs
- In-memory slice storage (no database)

Usage Instructions

Run the server:

```
go run main.go
```

- 1.
2. Use Postman or [curl](#) to interact with the API.
3. Sample **POST** body for creating a movie:

```
{
  "isbn": "12345",
  "title": "Inception",
  "director": {
    "firstname": "Christopher",
    "lastname": "Nolan"
  }
}
```

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