

Namespace backend.Controllers

Classes

[AuthController](#)

API controller responsible for authentication-related operations such as login, registration and logout.

[AuthorsController](#)

API controller responsible for managing authors. Provides endpoints for listing and creating authors.

[BooksController](#)

API controller responsible for managing books and searching external sources (Google Books).

Provides endpoints to list, retrieve and create books.

[GoogleBooksController](#)

Controller for querying Google Books API and returning external book information.

[RecommendationsController](#)

Controller responsible for generating and retrieving book recommendations. Uses an external recommendations microservice and caches per-user results in the database.

[ReviewsController](#)

Controller for managing book reviews. By default this controller requires authentication. Provides endpoints to add or update a review and to retrieve reviews for a book or for the current user.

[ShelvesController](#)

Controller for managing user shelves and shelf contents (books). Requires authentication and exposes endpoints to list, view, create shelves and to add/remove/update books on shelves.

[UsersController](#)

Controller for user-related operations: profile retrieval and updates, community browsing and social actions (follow/unfollow). Most endpoints require authentication.

Class AuthController

Namespace: [backend.Controllers](#)

Assembly: backend.dll

API controller responsible for authentication-related operations such as login, registration and logout.

```
[ApiController]
[Route("api/[controller]")]
public class AuthController : ControllerBase
```

Inheritance

[object](#) ← [ControllerBase](#) ← AuthController

Inherited Members

[ControllerBase.StatusCode\(int\)](#) , [ControllerBase.StatusCode\(int, object\)](#) ,
 [ControllerBase.Content\(string\)](#) , [ControllerBase.Content\(string, string\)](#) ,
 [ControllerBase.Content\(string, string, Encoding\)](#) ,
 [ControllerBase.Content\(string, MediaTypeHeaderValue\)](#) , [ControllerBase.NoContent\(\)](#) ,
 [ControllerBase.Ok\(\)](#) , [ControllerBase.Ok\(object\)](#) , [ControllerBase.Redirect\(string\)](#) ,
 [ControllerBase.RedirectPermanent\(string\)](#) , [ControllerBase.RedirectPreserveMethod\(string\)](#) ,
 [ControllerBase.RedirectPermanentPreserveMethod\(string\)](#) , [ControllerBase.LocalRedirect\(string\)](#) ,
 [ControllerBase.LocalRedirectPermanent\(string\)](#) ,
 [ControllerBase.LocalRedirectPreserveMethod\(string\)](#) ,
 [ControllerBase.LocalRedirectPermanentPreserveMethod\(string\)](#) ,
 [ControllerBase.RedirectToAction\(\)](#) , [ControllerBase.RedirectToAction\(string\)](#) ,
 [ControllerBase.RedirectToAction\(string, object\)](#) , [ControllerBase.RedirectToAction\(string, string\)](#) ,
 [ControllerBase.RedirectToAction\(string, string, object\)](#) ,
 [ControllerBase.RedirectToAction\(string, string, string\)](#) ,
 [ControllerBase.RedirectToAction\(string, string, object, string\)](#) ,
 [ControllerBase.RedirectToActionPreserveMethod\(string, string, object, string\)](#) ,
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 [ControllerBase.UnprocessableEntity\(\)](#) , ControllerBase.UnprocessableEntity(object) ,
 [ControllerBase.UnprocessableEntity\(ModelStateDictionary\)](#) , ControllerBase.Conflict() ,
 [ControllerBase.Conflict\(object\)](#) , ControllerBase.Conflict(ModelStateDictionary) ,
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 [ControllerBase.AcceptedAtAction\(string, object, object\)](#) ,
 [ControllerBase.AcceptedAtAction\(string, string, object, object\)](#) ,
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 [ControllerBase.AcceptedAtRoute\(string, object\)](#) , ControllerBase.AcceptedAtRoute(object, object) ,
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 [ControllerBase.Challenge\(AuthenticationProperties, params string\[\]\)](#) , ControllerBase.Forbid() ,
 [ControllerBase.Forbid\(params string\[\]\)](#) , ControllerBase.Forbid(AuthenticationProperties) ,
 [ControllerBase.Forbid\(AuthenticationProperties, params string\[\]\)](#) ,
 [ControllerBase.SignIn\(ClaimsPrincipal\)](#) , ControllerBase.SignIn(ClaimsPrincipal, string) ,
 [ControllerBase.SignIn\(ClaimsPrincipal, AuthenticationProperties\)](#) ,
 [ControllerBase.SignIn\(ClaimsPrincipal, AuthenticationProperties, string\)](#) , ControllerBase.SignOut() ,
 [ControllerBase.SignOut\(AuthenticationProperties\)](#) , ControllerBase.SignOut(params string[]) ,
 [ControllerBase.SignOut\(AuthenticationProperties, params string\[\]\)](#) ,

[ControllerBase.TryUpdateModelAsync<TModel>\(TModel\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string, IValueProvider\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string, params Expression<Func<TModel, object>>\[\]\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string, Func<ModelMetadata, bool>\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string, IValueProvider, params Expression<Func<TModel, object>>\[\]\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string, IValueProvider, Func<ModelMetadata, bool>\)](#) ,
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 [ControllerBase.TryUpdateModelAsync\(object, Type, string, IValueProvider, Func<ModelMetadata, bool>\)](#) ,
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 [ControllerBase.RouteData](#) , [ControllerBase.ModelState](#) , [ControllerBase.ControllerContext](#) ,
 [ControllerBase.MetadataProvider](#) , [ControllerBase.ModelBinderFactory](#) , [ControllerBase.Url](#) ,
 [ControllerBase.ObjectValidator](#) , [ControllerBase.ProblemDetailsFactory](#) , [ControllerBase.User](#) ,
 [ControllerBase.Empty](#) , [object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) ,
 [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) , [object.MemberwiseClone\(\)](#) ,
 [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Constructors

AuthController(UserManager<ApplicationUser>, SignInManager<ApplicationUser>, JwtService)

Initializes a new instance of the [AuthController](#) class.

```
public AuthController(UserManager<ApplicationUser> userManager,  
SignInManager<ApplicationUser> signInManager, JwtService jwtService)
```

Parameters

userManager [UserManager< ApplicationUser >](#)

The user manager for managing users.

signInManager [SignInManager< ApplicationUser >](#)

The sign-in manager for handling authentication checks.

jwtService [JwtService](#)

The JWT service used to create tokens for authenticated users.

Methods

Login(LoginDto)

Attempts to sign in a user using email and password.

```
[HttpPost("login")]
public Task<IActionResult> Login(LoginDto loginDto)
```

Parameters

loginDto [LoginDto](#)

DTO containing the user's email and password.

Returns

[Task](#)<[IActionResult](#)>

Returns 200 OK with a JWT and basic user info on success; 400 Bad Request when validation fails; 401 Unauthorized when credentials are invalid or the account is locked out.

Remarks

This action performs additional email format validation and enforces account lockout on repeated failed attempts.

Logout()

Signs out the currently authenticated user.

```
[HttpPost("logout")]
public Task<IActionResult> Logout()
```

Returns

[Task](#)<IActionResult>

Returns 200 OK on successful sign out.

Register(RegisterDto)

Registers a new user with the provided email, display name and password.

```
[HttpPost("register")]
public Task<IActionResult> Register(RegisterDto registerDto)
```

Parameters

registerDto [RegisterDto](#)

DTO containing registration data.

Returns

[Task](#)<IActionResult>

Returns 200 OK with a JWT and basic user info on success; 400 Bad Request when validation fails or the user already exists.

Remarks

This action validates display name uniqueness, enforces email format checks and prevents duplicate emails.

Class AuthorsController

Namespace: [backend.Controllers](#)

Assembly: backend.dll

API controller responsible for managing authors. Provides endpoints for listing and creating authors.

```
[ApiController]
[Route("api/[controller]")]
public class AuthorsController : ControllerBase
```

Inheritance

[object](#) ← [ControllerBase](#) ← AuthorsController

Inherited Members

[ControllerBase.StatusCode\(int\)](#) , [ControllerBase.StatusCode\(int, object\)](#) ,
 [ControllerBase.Content\(string\)](#) , [ControllerBase.Content\(string, string\)](#) ,
 [ControllerBase.Content\(string, string, Encoding\)](#) ,
 [ControllerBase.Content\(string, MediaTypeHeaderValue\)](#) , [ControllerBase.NoContent\(\)](#) ,
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 [ControllerBase.LocalRedirectPreserveMethod\(string\)](#) ,
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 [ControllerBase.RedirectToActionPermanent\(string, string, object\)](#) ,
 [ControllerBase.RedirectToActionPermanent\(string, string, object, string\)](#) ,
 [ControllerBase.RedirectToActionPermanentPreserveMethod\(string, string, object, string\)](#) ,
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[ControllerBase.RedirectToRoute\(string, object\)](#) , [ControllerBase.RedirectToRoute\(string, string\)](#) ,
 [ControllerBase.RedirectToRoute\(string, object, string\)](#) ,
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 [ControllerBase.RedirectToRoutePermanent\(object\)](#) ,
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 [ControllerBase.RedirectToRoutePermanentPreserveMethod\(string, object, string\)](#) ,
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 [ControllerBase.RedirectToPagePermanent\(string, string, string\)](#) ,
 [ControllerBase.RedirectToPagePermanent\(string, string, object, string\)](#) ,
 [ControllerBase.RedirectToPagePreserveMethod\(string, string, object, string\)](#) ,
 [ControllerBase.RedirectToPagePermanentPreserveMethod\(string, string, object, string\)](#) ,
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 [ControllerBase.File\(byte\[\], string, DateTimeOffset?, EntityTagHeaderValue\)](#) ,
 [ControllerBase.File\(byte\[\], string, DateTimeOffset?, EntityTagHeaderValue, bool\)](#) ,
 [ControllerBase.File\(byte\[\], string, string, DateTimeOffset?, EntityTagHeaderValue\)](#) ,
 [ControllerBase.File\(byte\[\], string, string, DateTimeOffset?, EntityTagHeaderValue, bool\)](#) ,
 [ControllerBase.File\(Stream, string\)](#) , [ControllerBase.File\(Stream, string, bool\)](#) ,
 [ControllerBase.File\(Stream, string, string\)](#) , [ControllerBase.File\(Stream, string, string, bool\)](#) ,
 [ControllerBase.File\(Stream, string, DateTimeOffset?\)](#) , [ControllerBase.EntityTagHeaderValue](#) ,
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 [ControllerBase.PhysicalFile\(string, string, string, DateTimeOffset?, EntityTagHeaderValue, bool\)](#) ,
 [ControllerBase.Unauthorized\(\)](#) , ControllerBase.Unauthorized(object) , ControllerBase.NotFound()
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 [ControllerBase.BadRequest\(object\)](#) , ControllerBase.BadRequest(ModelStateDictionary)
 [ControllerBase.UnprocessableEntity\(\)](#) , ControllerBase.UnprocessableEntity(object)
 [ControllerBase.UnprocessableEntity\(ModelStateDictionary\)](#) , ControllerBase.Conflict()
 [ControllerBase.Conflict\(object\)](#) , ControllerBase.Conflict(ModelStateDictionary)
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 [ControllerBase.ValidationProblem\(ValidationProblemDetails\)](#) ,
 [ControllerBase.ValidationProblem\(ModelStateDictionary\)](#) , ControllerBase.ValidationProblem()
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 [ControllerBase.AcceptedAtAction\(string, string, object, object\)](#) ,
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 [ControllerBase.AcceptedAtRoute\(string, object, object\)](#) , ControllerBase.Challenge()
 [ControllerBase.Challenge\(params string\[\]\)](#) , ControllerBase.Challenge(AuthenticationProperties)
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 [ControllerBase.SignIn\(ClaimsPrincipal, AuthenticationProperties, string\)](#) , ControllerBase.SignOut()
 [ControllerBase.SignOut\(AuthenticationProperties\)](#) , ControllerBase.SignOut(params string[])
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[ControllerBase.TryUpdateModelAsync<TModel>\(TModel\)](#) ,
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 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string, params Expression<Func<TModel, object>>\[\]\)](#) ,
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 [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) , [object.MemberwiseClone\(\)](#) ,
 [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Constructors

AuthorsController(ApplicationDbContext)

Initializes a new instance of the [AuthorsController](#) class.

```
public AuthorsController(ApplicationDbContext context)
```

Parameters

context [ApplicationDbContext](#)

The application database context.

Methods

Create(Author)

Creates a new author record.

```
[Authorize]  
[HttpPost]  
public Task<IActionResult> Create(Author author)
```

Parameters

author [Author](#)

Author model to be created.

Returns

[Task](#)<[IActionResult](#)>

200 OK with the created author on success. Requires authorization.

GetAll()

Retrieves all authors from the database.

```
[HttpGet]  
public Task<IActionResult> GetAll()
```

Returns

[Task](#)<[IActionResult](#)>

200 OK with a list of authors.

Class BooksController

Namespace: [backend.Controllers](#)

Assembly: backend.dll

API controller responsible for managing books and searching external sources (Google Books). Provides endpoints to list, retrieve and create books.

```
[ApiController]  
[Route("api/[controller]")]  
public class BooksController : ControllerBase
```

Inheritance

[Object](#) ← [ControllerBase](#) ← BooksController

Inherited Members

[ControllerBase.StatusCode\(int\)](#) , [ControllerBase.StatusCode\(int, object\)](#) ,
[ControllerBase.Content\(string\)](#) , [ControllerBase.Content\(string, string\)](#) ,
[ControllerBase.Content\(string, string, Encoding\)](#) ,
[ControllerBase.Content\(string, MediaTypeHeaderValue\)](#) , [ControllerBase.NoContent\(\)](#) ,
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 [ControllerBase.RedirectToRoutePermanent\(string, object\)](#) ,
 [ControllerBase.RedirectToRoutePermanent\(string, string\)](#) ,
 [ControllerBase.RedirectToRoutePermanent\(string, object, string\)](#) ,
 [ControllerBase.RedirectToRoutePermanentPreserveMethod\(string, object, string\)](#) ,
 [ControllerBase.RedirectToPage\(string\)](#) , [ControllerBase.RedirectToPage\(string, object\)](#) ,
 [ControllerBase.RedirectToPage\(string, string\)](#) , [ControllerBase.RedirectToPage\(string, string, object\)](#) ,
 [ControllerBase.RedirectToPage\(string, string, string\)](#) ,
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 [ControllerBase.RedirectToPagePermanent\(string\)](#) ,
 [ControllerBase.RedirectToPagePermanent\(string, object\)](#) ,
 [ControllerBase.RedirectToPagePermanent\(string, string\)](#) ,
 [ControllerBase.RedirectToPagePermanent\(string, string, string\)](#) ,
 [ControllerBase.RedirectToPagePermanent\(string, string, object, string\)](#) ,
 [ControllerBase.RedirectToPagePreserveMethod\(string, string, object, string\)](#) ,
 [ControllerBase.RedirectToPagePermanentPreserveMethod\(string, string, object, string\)](#) ,
 [ControllerBase.File\(byte\[\], string\)](#) , [ControllerBase.File\(byte\[\], string, bool\)](#) ,
 [ControllerBase.File\(byte\[\], string, string\)](#) , [ControllerBase.File\(byte\[\], string, string, bool\)](#) ,
 [ControllerBase.File\(byte\[\], string, DateTimeOffset?, EntityTagHeaderValue\)](#) ,
 [ControllerBase.File\(byte\[\], string, DateTimeOffset?, EntityTagHeaderValue, bool\)](#) ,
 [ControllerBase.File\(byte\[\], string, string, DateTimeOffset?, EntityTagHeaderValue\)](#) ,
 [ControllerBase.File\(byte\[\], string, string, DateTimeOffset?, EntityTagHeaderValue, bool\)](#) ,
 [ControllerBase.File\(Stream, string\)](#) , [ControllerBase.File\(Stream, string, bool\)](#) ,
 [ControllerBase.File\(Stream, string, string\)](#) , [ControllerBase.File\(Stream, string, string, bool\)](#) ,
 [ControllerBase.File\(Stream, string, DateTimeOffset?\)](#) , [ControllerBase.File\(Stream, string, EntityTagHeaderValue\)](#) ,
 [ControllerBase.File\(Stream, string, DateTimeOffset?, EntityTagHeaderValue, bool\)](#) ,
 [ControllerBase.File\(Stream, string, string, DateTimeOffset?, EntityTagHeaderValue\)](#) ,
 [ControllerBase.File\(Stream, string, string, DateTimeOffset?, EntityTagHeaderValue, bool\)](#) ,
 [ControllerBase.File\(string, string\)](#) , [ControllerBase.File\(string, string, bool\)](#) ,
 [ControllerBase.File\(string, string, string\)](#) , [ControllerBase.File\(string, string, string, bool\)](#) ,
 [ControllerBase.File\(string, string, DateTimeOffset?\)](#) , [ControllerBase.File\(string, string, EntityTagHeaderValue\)](#) ,
 [ControllerBase.File\(string, string, DateTimeOffset?, EntityTagHeaderValue, bool\)](#) ,
 [ControllerBase.File\(string, string, string, DateTimeOffset?\)](#) , [ControllerBase.File\(string, string, string, EntityTagHeaderValue\)](#) ,
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 [ControllerBase.PhysicalFile\(string, string\)](#) , [ControllerBase.PhysicalFile\(string, string, bool\)](#) ,

[ControllerBase.PhysicalFile\(string, string, string\)](#) ,
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 [ControllerBase.PhysicalFile\(string, string, DateTimeOffset?, EntityTagHeaderValue\)](#) ,
 [ControllerBase.PhysicalFile\(string, string, DateTimeOffset?, EntityTagHeaderValue, bool\)](#) ,
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 [ControllerBase.PhysicalFile\(string, string, string, DateTimeOffset?, EntityTagHeaderValue, bool\)](#) ,
 [ControllerBase.Unauthorized\(\)](#) , [ControllerBase.Unauthorized\(object\)](#) , [ControllerBase.NotFound\(\)](#) ,
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 [ControllerBase.BadRequest\(object\)](#) , [ControllerBase.BadRequest\(ModelStateDictionary\)](#) ,
 [ControllerBase.UnprocessableEntity\(\)](#) , [ControllerBase.UnprocessableEntity\(object\)](#) ,
 [ControllerBase.UnprocessableEntity\(ModelStateDictionary\)](#) , [ControllerBase.Conflict\(\)](#) ,
 [ControllerBase.Conflict\(object\)](#) , [ControllerBase.Conflict\(ModelStateDictionary\)](#) ,
 [ControllerBase.Problem\(string, string, int?, string, string\)](#) ,
 [ControllerBase.ValidationProblem\(ValidationProblemDetails\)](#) ,
 [ControllerBase.ValidationProblem\(ModelStateDictionary\)](#) , [ControllerBase.ValidationProblem\(\)](#) ,
 [ControllerBase.ValidationProblem\(string, string, int?, string, string, ModelStateDictionary\)](#) ,
 [ControllerBase.Created\(\)](#) , [ControllerBase.Created\(string, object\)](#) ,
 [ControllerBase.Created\(Uri, object\)](#) , [ControllerBase.CreatedAtAction\(string, object\)](#) ,
 [ControllerBase.CreatedAtAction\(string, object, object\)](#) ,
 [ControllerBase.CreatedAtAction\(string, string, object, object\)](#) ,
 [ControllerBase.CreatedAtRoute\(string, object\)](#) , [ControllerBase.CreatedAtRoute\(object, object\)](#) ,
 [ControllerBase.CreatedAtRoute\(string, object, object\)](#) , [ControllerBase.Accepted\(\)](#) ,
 [ControllerBase.Accepted\(object\)](#) , [ControllerBase.Accepted\(Uri\)](#) , [ControllerBase.Accepted\(string\)](#) ,
 [ControllerBase.Accepted\(string, object\)](#) , [ControllerBase.Accepted\(Uri, object\)](#) ,
 [ControllerBase.AcceptedAtAction\(string\)](#) , [ControllerBase.AcceptedAtAction\(string, string\)](#) ,
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 [ControllerBase.AcceptedAtAction\(string, string, object, object\)](#) ,
 [ControllerBase.AcceptedAtRoute\(object\)](#) , [ControllerBase.AcceptedAtRoute\(string\)](#) ,
 [ControllerBase.AcceptedAtRoute\(string, object\)](#) , [ControllerBase.AcceptedAtRoute\(object, object\)](#) ,
 [ControllerBase.AcceptedAtRoute\(string, object, object\)](#) , [ControllerBase.Challenge\(\)](#) ,
 [ControllerBase.Challenge\(params string\[\]\)](#) , [ControllerBase.Challenge\(AuthenticationProperties\)](#) ,
 [ControllerBase.Challenge\(AuthenticationProperties, params string\[\]\)](#) , [ControllerBase.Forbid\(\)](#) ,
 [ControllerBase.Forbid\(params string\[\]\)](#) , [ControllerBase.Forbid\(AuthenticationProperties\)](#) ,
 [ControllerBase.Forbid\(AuthenticationProperties, params string\[\]\)](#) ,
 [ControllerBase.SignIn\(ClaimsPrincipal\)](#) , [ControllerBase.SignIn\(ClaimsPrincipal, string\)](#) ,
 [ControllerBase.SignIn\(ClaimsPrincipal, AuthenticationProperties\)](#) ,
 [ControllerBase.SignIn\(ClaimsPrincipal, AuthenticationProperties, string\)](#) , [ControllerBase.SignOut\(\)](#) ,
 [ControllerBase.SignOut\(AuthenticationProperties\)](#) , [ControllerBase.SignOut\(params string\[\]\)](#) ,

[ControllerBase.SignOut\(AuthenticationProperties, params string\[\]\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string, IValueProvider\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string, params Expression<Func<TModel, object>>\[\]\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string, Func<ModelMetadata, bool>\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string, IValueProvider, params Expression<Func<TModel, object>>\[\]\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string, IValueProvider, Func<ModelMetadata, bool>\)](#) ,
 [ControllerBase.TryUpdateModelAsync\(object, Type, string\)](#) ,
 [ControllerBase.TryUpdateModelAsync\(object, Type, string, IValueProvider, Func<ModelMetadata, bool>\)](#) ,
 [ControllerBase.TryValidateModel\(object\)](#) , [ControllerBase.TryValidateModel\(object, string\)](#) ,
 [ControllerBase.HttpContext](#) , [ControllerBase.Request](#) , [ControllerBase.Response](#) ,
 [ControllerBase.RouteData](#) , [ControllerBase.ModelState](#) , [ControllerBase.ControllerContext](#) ,
 [ControllerBase.MetadataProvider](#) , [ControllerBase.ModelBinderFactory](#) , [ControllerBase.Url](#) ,
 [ControllerBase.ObjectValidator](#) , [ControllerBase.ProblemDetailsFactory](#) , [ControllerBase.User](#) ,
 [ControllerBase.Empty](#) , [object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) ,
 [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) , [object.MemberwiseClone\(\)](#) ,
 [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Constructors

BooksController(ApplicationDbContext, IGoogleBooksService)

Initializes a new instance of the [BooksController](#) class.

```
public BooksController(ApplicationDbContext context, IGoogleBooksService  
googleBooksService)
```

Parameters

`context` [ApplicationDbContext](#)

Application database context.

`googleBooksService` [IGoogleBooksService](#)

Service used to query Google Books.

Methods

CreateBook(CreateBookDto)

Creates a new book record. Requires an authenticated user.

```
[Authorize]  
[HttpPost]  
public Task<ActionResult> CreateBook(CreateBookDto dto)
```

Parameters

dto [CreateBookDto](#)

Data transfer object containing book creation details, including author and genre IDs.

Returns

[Task](#)<[ActionResult](#)>

Returns 201 Created with location header pointing to the new book on success; 400 Bad Request when a book with the same ISBN exists.

GetBook(Guid)

Retrieves detailed information about a single book by its identifier.

```
[HttpGet("{id}")]  
public Task<ActionResult<BookDto>> GetBook(Guid id)
```

Parameters

id [Guid](#)

Identifier of the book to retrieve.

Returns

[Task](#)<ActionResult<BookDto>>

200 OK with [BookDto](#) when found; 404 NotFound when the book does not exist.

GetBooks(string?)

Retrieves a list of books. Optionally performs a search against local data and Google Books.

```
[HttpGet]  
public Task<ActionResult<IEnumerable<BookDto>>> GetBooks(string? search)
```

Parameters

search [string](#)

Optional search term to filter by title or ISBN; if provided, also queries Google Books for additional results.

Returns

[Task](#)<ActionResult<IEnumerable<BookDto>>>

200 OK with a list of [BookDto](#) items.

Class GoogleBooksController

Namespace: [backend.Controllers](#)

Assembly: backend.dll

Controller for querying Google Books API and returning external book information.

```
[ApiController]
[Route("api/books/google")]
public class GoogleBooksController : ControllerBase
```

Inheritance

[object](#) ← [ControllerBase](#) ← GoogleBooksController

Inherited Members

[ControllerBase.StatusCode\(int\)](#) , [ControllerBase.StatusCode\(int, object\)](#) ,
 [ControllerBase.Content\(string\)](#) , [ControllerBase.Content\(string, string\)](#) ,
 [ControllerBase.Content\(string, string, Encoding\)](#) ,
 [ControllerBase.Content\(string, MediaTypeHeaderValue\)](#) , [ControllerBase.NoContent\(\)](#) ,
 [ControllerBase.Ok\(\)](#) , [ControllerBase.Ok\(object\)](#) , [ControllerBase.Redirect\(string\)](#) ,
 [ControllerBase.RedirectPermanent\(string\)](#) , [ControllerBase.RedirectPreserveMethod\(string\)](#) ,
 [ControllerBase.RedirectPermanentPreserveMethod\(string\)](#) , [ControllerBase.LocalRedirect\(string\)](#) ,
 [ControllerBase.LocalRedirectPermanent\(string\)](#) ,
 [ControllerBase.LocalRedirectPreserveMethod\(string\)](#) ,
 [ControllerBase.LocalRedirectPermanentPreserveMethod\(string\)](#) ,
 [ControllerBase.RedirectToAction\(\)](#) , [ControllerBase.RedirectToAction\(string\)](#) ,
 [ControllerBase.RedirectToAction\(string, object\)](#) , [ControllerBase.RedirectToAction\(string, string\)](#) ,
 [ControllerBase.RedirectToAction\(string, string, object\)](#) ,
 [ControllerBase.RedirectToAction\(string, string, string\)](#) ,
 [ControllerBase.RedirectToAction\(string, string, object, string\)](#) ,
 [ControllerBase.RedirectToActionPreserveMethod\(string, string, object, string\)](#) ,
 [ControllerBase.RedirectToActionPermanent\(string\)](#) ,
 [ControllerBase.RedirectToActionPermanent\(string, object\)](#) ,
 [ControllerBase.RedirectToActionPermanent\(string, string\)](#) ,
 [ControllerBase.RedirectToActionPermanent\(string, string, string\)](#) ,
 [ControllerBase.RedirectToActionPermanent\(string, string, object\)](#) ,
 [ControllerBase.RedirectToActionPermanent\(string, string, object, string\)](#) ,
 [ControllerBase.RedirectToActionPermanentPreserveMethod\(string, string, object, string\)](#) ,
 [ControllerBase.RedirectToRoute\(string\)](#) , [ControllerBase.RedirectToRoute\(object\)](#) ,

[ControllerBase.RedirectToRoute\(string, object\)](#) , [ControllerBase.RedirectToRoute\(string, string\)](#) ,
 [ControllerBase.RedirectToRoute\(string, object, string\)](#) ,
 [ControllerBase.RedirectToRoutePreserveMethod\(string, object, string\)](#) ,
 [ControllerBase.RedirectToRoutePermanent\(string\)](#) ,
 [ControllerBase.RedirectToRoutePermanent\(object\)](#) ,
 [ControllerBase.RedirectToRoutePermanent\(string, object\)](#) ,
 [ControllerBase.RedirectToRoutePermanent\(string, string\)](#) ,
 [ControllerBase.RedirectToRoutePermanent\(string, object, string\)](#) ,
 [ControllerBase.RedirectToRoutePermanentPreserveMethod\(string, object, string\)](#) ,
 [ControllerBase.RedirectToPage\(string\)](#) , [ControllerBase.RedirectToPage\(string, object\)](#) ,
 [ControllerBase.RedirectToPage\(string, string\)](#) , [ControllerBase.RedirectToPage\(string, string, object\)](#) ,
 [ControllerBase.RedirectToPage\(string, string, string\)](#) ,
 [ControllerBase.RedirectToPage\(string, string, object, string\)](#) ,
 [ControllerBase.RedirectToPagePermanent\(string\)](#) ,
 [ControllerBase.RedirectToPagePermanent\(string, object\)](#) ,
 [ControllerBase.RedirectToPagePermanent\(string, string\)](#) ,
 [ControllerBase.RedirectToPagePermanent\(string, string, string\)](#) ,
 [ControllerBase.RedirectToPagePermanent\(string, string, object, string\)](#) ,
 [ControllerBase.RedirectToPagePreserveMethod\(string, string, object, string\)](#) ,
 [ControllerBase.RedirectToPagePermanentPreserveMethod\(string, string, object, string\)](#) ,
 [ControllerBase.File\(byte\[\], string\)](#) , [ControllerBase.File\(byte\[\], string, bool\)](#) ,
 [ControllerBase.File\(byte\[\], string, string\)](#) , [ControllerBase.File\(byte\[\], string, string, bool\)](#) ,
 [ControllerBase.File\(byte\[\], string, DateTimeOffset?, EntityTagHeaderValue\)](#) ,
 [ControllerBase.File\(byte\[\], string, DateTimeOffset?, EntityTagHeaderValue, bool\)](#) ,
 [ControllerBase.File\(byte\[\], string, string, DateTimeOffset?, EntityTagHeaderValue\)](#) ,
 [ControllerBase.File\(byte\[\], string, string, DateTimeOffset?, EntityTagHeaderValue, bool\)](#) ,
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 [ControllerBase.File\(Stream, string, string\)](#) , [ControllerBase.File\(Stream, string, string, bool\)](#) ,
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 [ControllerBase.File\(Stream, string, DateTimeOffset?, EntityTagHeaderValue\)](#) ,
 [ControllerBase.File\(Stream, string, string, DateTimeOffset?\)](#) , [ControllerBase.EntityTagHeaderValue](#) ,
 [ControllerBase.File\(Stream, string, string, DateTimeOffset?, EntityTagHeaderValue, bool\)](#) ,
 [ControllerBase.File\(string, string\)](#) , [ControllerBase.File\(string, string, bool\)](#) ,
 [ControllerBase.File\(string, string, string\)](#) , [ControllerBase.File\(string, string, string, bool\)](#) ,
 [ControllerBase.File\(string, string, DateTimeOffset?\)](#) , [ControllerBase.EntityTagHeaderValue](#) ,
 [ControllerBase.File\(string, string, DateTimeOffset?, EntityTagHeaderValue\)](#) ,
 [ControllerBase.File\(string, string, string, DateTimeOffset?\)](#) , [ControllerBase.EntityTagHeaderValue](#) ,
 [ControllerBase.File\(string, string, string, string, DateTimeOffset?\)](#) , [ControllerBase.EntityTagHeaderValue](#) ,
 [ControllerBase.PhysicalFile\(string, string\)](#) , [ControllerBase.PhysicalFile\(string, string, bool\)](#) ,
 [ControllerBase.PhysicalFile\(string, string, string\)](#) ,

[ControllerBase.PhysicalFile\(string, string, string, bool\)](#) ,
 [ControllerBase.PhysicalFile\(string, string, DateTimeOffset?, EntityTagHeaderValue\)](#) ,
 [ControllerBase.PhysicalFile\(string, string, DateTimeOffset?, EntityTagHeaderValue, bool\)](#) ,
 [ControllerBase.PhysicalFile\(string, string, string, DateTimeOffset?, EntityTagHeaderValue\)](#) ,
 [ControllerBase.PhysicalFile\(string, string, string, DateTimeOffset?, EntityTagHeaderValue, bool\)](#) ,
 [ControllerBase.Unauthorized\(\)](#) , ControllerBase.Unauthorized(object) , ControllerBase.NotFound() ,
 [ControllerBase.NotFound\(object\)](#) , ControllerBase.BadRequest() ,
 [ControllerBase.BadRequest\(object\)](#) , ControllerBase.BadRequest(ModelStateDictionary) ,
 [ControllerBase.UnprocessableEntity\(\)](#) , ControllerBase.UnprocessableEntity(object) ,
 [ControllerBase.UnprocessableEntity\(ModelStateDictionary\)](#) , ControllerBase.Conflict() ,
 [ControllerBase.Conflict\(object\)](#) , ControllerBase.Conflict(ModelStateDictionary) ,
 [ControllerBase.Problem\(string, string, int?, string, string\)](#) ,
 [ControllerBase.ValidationProblem\(ValidationProblemDetails\)](#) ,
 [ControllerBase.ValidationProblem\(ModelStateDictionary\)](#) , ControllerBase.ValidationProblem() ,
 [ControllerBase.ValidationProblem\(string, string, int?, string, string, ModelStateDictionary\)](#) ,
 [ControllerBase.Created\(\)](#) , ControllerBase.Created(string, object) ,
 [ControllerBase.Created\(Uri, object\)](#) , ControllerBase.CreatedAtAction(string, object) ,
 [ControllerBase.CreatedAtAction\(string, object, object\)](#) ,
 [ControllerBase.CreatedAtAction\(string, string, object, object\)](#) ,
 [ControllerBase.CreatedAtRoute\(string, object\)](#) , ControllerBase.CreatedAtRoute(object, object) ,
 [ControllerBase.CreatedAtRoute\(string, object, object\)](#) , ControllerBase.Accepted() ,
 [ControllerBase.Accepted\(object\)](#) , ControllerBase.Accepted(Uri) , ControllerBase.Accepted(string) ,
 [ControllerBase.Accepted\(string, object\)](#) , ControllerBase.Accepted(Uri, object) ,
 [ControllerBase.AcceptedAtAction\(string\)](#) , ControllerBase.AcceptedAtAction(string, string) ,
 [ControllerBase.AcceptedAtAction\(string, object\)](#) ,
 [ControllerBase.AcceptedAtAction\(string, string, object\)](#) ,
 [ControllerBase.AcceptedAtAction\(string, object, object\)](#) ,
 [ControllerBase.AcceptedAtAction\(string, string, object, object\)](#) ,
 [ControllerBase.AcceptedAtRoute\(object\)](#) , ControllerBase.AcceptedAtRoute(string) ,
 [ControllerBase.AcceptedAtRoute\(string, object\)](#) , ControllerBase.AcceptedAtRoute(object, object) ,
 [ControllerBase.AcceptedAtRoute\(string, object, object\)](#) , ControllerBase.Challenge() ,
 [ControllerBase.Challenge\(params string\[\]\)](#) , ControllerBase.Challenge(AuthenticationProperties) ,
 [ControllerBase.Challenge\(AuthenticationProperties, params string\[\]\)](#) , ControllerBase.Forbid() ,
 [ControllerBase.Forbid\(params string\[\]\)](#) , ControllerBase.Forbid(AuthenticationProperties) ,
 [ControllerBase.Forbid\(AuthenticationProperties, params string\[\]\)](#) ,
 [ControllerBase.SignIn\(ClaimsPrincipal\)](#) , ControllerBase.SignIn(ClaimsPrincipal, string) ,
 [ControllerBase.SignIn\(ClaimsPrincipal, AuthenticationProperties\)](#) ,
 [ControllerBase.SignIn\(ClaimsPrincipal, AuthenticationProperties, string\)](#) , ControllerBase.SignOut() ,
 [ControllerBase.SignOut\(AuthenticationProperties\)](#) , ControllerBase.SignOut(params string[]) ,
 [ControllerBase.SignOut\(AuthenticationProperties, params string\[\]\)](#) ,

[ControllerBase.TryUpdateModelAsync<TModel>\(TModel\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string, IValueProvider\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string, params Expression<Func<TModel, object>>\[\]\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string, Func<ModelMetadata, bool>\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string, IValueProvider, params Expression<Func<TModel, object>>\[\]\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string, IValueProvider, Func<ModelMetadata, bool>\)](#) ,
 [ControllerBase.TryUpdateModelAsync\(object, Type, string\)](#) ,
 [ControllerBase.TryUpdateModelAsync\(object, Type, string, IValueProvider, Func<ModelMetadata, bool>\)](#) ,
 [ControllerBase.TryValidateModel\(object\)](#) , [ControllerBase.TryValidateModel\(object, string\)](#) ,
 [ControllerBase.HttpContext](#) , [ControllerBase.Request](#) , [ControllerBase.Response](#) ,
 [ControllerBase.RouteData](#) , [ControllerBase.ModelState](#) , [ControllerBase.ControllerContext](#) ,
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 [ControllerBase.ObjectValidator](#) , [ControllerBase.ProblemDetailsFactory](#) , [ControllerBase.User](#) ,
 [ControllerBase.Empty](#) , [object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) ,
 [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) , [object.MemberwiseClone\(\)](#) ,
 [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Constructors

GoogleBooksController(IGoogleBooksService)

Initializes a new instance of the [GoogleBooksController](#) class.

```
public GoogleBooksController(IGoogleBooksService svc)
```

Parameters

svc [IGoogleBooksService](#)

Service used to query Google Books.

Methods

GetByIsbn(string, CancellationToken)

Retrieves book metadata from Google Books by ISBN.

```
[HttpGet]  
public Task<IActionResult> GetByIsbn(string isbn, CancellationToken ct)
```

Parameters

[isbn](#) [string](#)

ISBN of the book to look up. This parameter is required.

[ct](#) [CancellationToken](#)

Cancellation token for the request.

Returns

[Task](#)<[IActionResult](#)>

200 OK with book data when found; 400 Bad Request when isbn is missing; 404 Not Found if the book is not found.

Class RecommendationsController

Namespace: [backend.Controllers](#)

Assembly: backend.dll

Controller responsible for generating and retrieving book recommendations. Uses an external recommendations microservice and caches per-user results in the database.

```
[ApiController]  
[Route("api/[controller]")]  
public class RecommendationsController : ControllerBase
```

Inheritance

[Object](#) ← [ControllerBase](#) ← RecommendationsController

Inherited Members

[ControllerBase.StatusCode\(int\)](#) , [ControllerBase.StatusCode\(int, object\)](#) ,
[ControllerBase.Content\(string\)](#) , [ControllerBase.Content\(string, string\)](#) ,
[ControllerBase.Content\(string, string, Encoding\)](#) ,
[ControllerBase.Content\(string, MediaTypeHeaderValue\)](#) , [ControllerBase.NoContent\(\)](#) ,
[ControllerBase.Ok\(\)](#) , [ControllerBase.Ok\(object\)](#) , [ControllerBase.Redirect\(string\)](#) ,
[ControllerBase.RedirectPermanent\(string\)](#) , [ControllerBase.RedirectPreserveMethod\(string\)](#) ,
[ControllerBase.RedirectPermanentPreserveMethod\(string\)](#) , [ControllerBase.LocalRedirect\(string\)](#) ,
[ControllerBase.LocalRedirectPermanent\(string\)](#) ,
[ControllerBase.LocalRedirectPreserveMethod\(string\)](#) ,
[ControllerBase.LocalRedirectPermanentPreserveMethod\(string\)](#) ,
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[ControllerBase.RedirectToAction\(string, object\)](#) , [ControllerBase.RedirectToAction\(string, string\)](#) ,
[ControllerBase.RedirectToAction\(string, string, object\)](#) ,
[ControllerBase.RedirectToAction\(string, string, string\)](#) ,
[ControllerBase.RedirectToAction\(string, string, object, string\)](#) ,
[ControllerBase.RedirectToActionPreserveMethod\(string, string, object, string\)](#) ,
[ControllerBase.RedirectToActionPermanent\(string\)](#) ,
[ControllerBase.RedirectToActionPermanent\(string, object\)](#) ,
[ControllerBase.RedirectToActionPermanent\(string, string\)](#) ,
[ControllerBase.RedirectToActionPermanent\(string, string, string\)](#) ,
[ControllerBase.RedirectToActionPermanent\(string, string, object\)](#) ,
[ControllerBase.RedirectToActionPermanent\(string, string, object, string\)](#) ,
[ControllerBase.RedirectToActionPermanentPreserveMethod\(string, string, object, string\)](#) ,

[ControllerBase.RedirectToRoute\(string\)](#) , [ControllerBase.RedirectToRoute\(object\)](#) ,
 [ControllerBase.RedirectToRoute\(string, object\)](#) , [ControllerBase.RedirectToRoute\(string, string\)](#) ,
 [ControllerBase.RedirectToRoute\(string, object, string\)](#) ,
 [ControllerBase.RedirectToRoutePreserveMethod\(string, object, string\)](#) ,
 [ControllerBase.RedirectToRoutePermanent\(string\)](#) ,
 [ControllerBase.RedirectToRoutePermanent\(object\)](#) ,
 [ControllerBase.RedirectToRoutePermanent\(string, object\)](#) ,
 [ControllerBase.RedirectToRoutePermanent\(string, string\)](#) ,
 [ControllerBase.RedirectToRoutePermanent\(string, object, string\)](#) ,
 [ControllerBase.RedirectToRoutePermanentPreserveMethod\(string, object, string\)](#) ,
 [ControllerBase.RedirectToPage\(string\)](#) , [ControllerBase.RedirectToPage\(string, object\)](#) ,
 [ControllerBase.RedirectToPage\(string, string\)](#) , [ControllerBase.RedirectToPage\(string, string, object\)](#) ,
 [ControllerBase.RedirectToPage\(string, string, string\)](#) ,
 [ControllerBase.RedirectToPage\(string, string, object, string\)](#) ,
 [ControllerBase.RedirectToPagePermanent\(string\)](#) ,
 [ControllerBase.RedirectToPagePermanent\(string, object\)](#) ,
 [ControllerBase.RedirectToPagePermanent\(string, string\)](#) ,
 [ControllerBase.RedirectToPagePermanent\(string, string, string\)](#) ,
 [ControllerBase.RedirectToPagePermanent\(string, string, object, string\)](#) ,
 [ControllerBase.RedirectToPagePreserveMethod\(string, string, object, string\)](#) ,
 [ControllerBase.RedirectToPagePermanentPreserveMethod\(string, string, object, string\)](#) ,
 [ControllerBase.File\(byte\[\], string\)](#) , [ControllerBase.File\(byte\[\], string, bool\)](#) ,
 [ControllerBase.File\(byte\[\], string, string\)](#) , [ControllerBase.File\(byte\[\], string, string, bool\)](#) ,
 [ControllerBase.File\(byte\[\], string, DateTimeOffset?, EntityTagHeaderValue\)](#) ,
 [ControllerBase.File\(byte\[\], string, DateTimeOffset?, EntityTagHeaderValue, bool\)](#) ,
 [ControllerBase.File\(byte\[\], string, string, DateTimeOffset?, EntityTagHeaderValue\)](#) ,
 [ControllerBase.File\(byte\[\], string, string, DateTimeOffset?, EntityTagHeaderValue, bool\)](#) ,
 [ControllerBase.File\(Stream, string\)](#) , [ControllerBase.File\(Stream, string, bool\)](#) ,
 [ControllerBase.File\(Stream, string, string\)](#) , [ControllerBase.File\(Stream, string, string, bool\)](#) ,
 [ControllerBase.File\(Stream, string, DateTimeOffset?\)](#) , [ControllerBase.EntityTagHeaderValue](#) ,
 [ControllerBase.File\(Stream, string, DateTimeOffset?, EntityTagHeaderValue\)](#) ,
 [ControllerBase.File\(Stream, string, string, DateTimeOffset?, EntityTagHeaderValue, bool\)](#) ,
 [ControllerBase.File\(string, string\)](#) , [ControllerBase.File\(string, string, bool\)](#) ,
 [ControllerBase.File\(string, string, string\)](#) , [ControllerBase.File\(string, string, string, bool\)](#) ,
 [ControllerBase.File\(string, string, DateTimeOffset?\)](#) , [ControllerBase.EntityTagHeaderValue](#) ,
 [ControllerBase.File\(string, string, DateTimeOffset?, EntityTagHeaderValue\)](#) ,
 [ControllerBase.File\(string, string, DateTimeOffset?, EntityTagHeaderValue, bool\)](#) ,
 [ControllerBase.File\(string, string, string, DateTimeOffset?, EntityTagHeaderValue, bool\)](#) ,
 [ControllerBase.PhysicalFile\(string, string\)](#) , [ControllerBase.PhysicalFile\(string, string, bool\)](#) ,

[ControllerBase.PhysicalFile\(string, string, string\)](#) ,
 [ControllerBase.PhysicalFile\(string, string, string, bool\)](#) ,
 [ControllerBase.PhysicalFile\(string, string, DateTimeOffset?, EntityTagHeaderValue\)](#) ,
 [ControllerBase.PhysicalFile\(string, string, DateTimeOffset?, EntityTagHeaderValue, bool\)](#) ,
 [ControllerBase.PhysicalFile\(string, string, string, DateTimeOffset?, EntityTagHeaderValue\)](#) ,
 [ControllerBase.PhysicalFile\(string, string, string, DateTimeOffset?, EntityTagHeaderValue, bool\)](#) ,
 [ControllerBase.Unauthorized\(\)](#) , [ControllerBase.Unauthorized\(object\)](#) , [ControllerBase.NotFound\(\)](#) ,
 [ControllerBase.NotFound\(object\)](#) , [ControllerBase.BadRequest\(\)](#) ,
 [ControllerBase.BadRequest\(object\)](#) , [ControllerBase.BadRequest\(ModelStateDictionary\)](#) ,
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 [ControllerBase.Conflict\(object\)](#) , [ControllerBase.Conflict\(ModelStateDictionary\)](#) ,
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 [ControllerBase.ValidationProblem\(ValidationProblemDetails\)](#) ,
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 [ControllerBase.Challenge\(AuthenticationProperties, params string\[\]\)](#) , [ControllerBase.Forbid\(\)](#) ,
 [ControllerBase.Forbid\(params string\[\]\)](#) , [ControllerBase.Forbid\(AuthenticationProperties\)](#) ,
 [ControllerBase.Forbid\(AuthenticationProperties, params string\[\]\)](#) ,
 [ControllerBase.SignIn\(ClaimsPrincipal\)](#) , [ControllerBase.SignIn\(ClaimsPrincipal, string\)](#) ,
 [ControllerBase.SignIn\(ClaimsPrincipal, AuthenticationProperties\)](#) ,
 [ControllerBase.SignIn\(ClaimsPrincipal, AuthenticationProperties, string\)](#) , [ControllerBase.SignOut\(\)](#) ,
 [ControllerBase.SignOut\(AuthenticationProperties\)](#) , [ControllerBase.SignOut\(params string\[\]\)](#) ,

[ControllerBase.SignOut\(AuthenticationProperties, params string\[\]\)](#) ,
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 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string, IValueProvider\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string, params Expression<Func<TModel, object>>\[\]\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string, Func<ModelMetadata, bool>\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string, IValueProvider, params Expression<Func<TModel, object>>\[\]\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string, IValueProvider, Func<ModelMetadata, bool>\)](#) ,
 [ControllerBase.TryUpdateModelAsync\(object, Type, string\)](#) ,
 [ControllerBase.TryUpdateModelAsync\(object, Type, string, IValueProvider, Func<ModelMetadata, bool>\)](#) ,
 [ControllerBase.TryValidateModel\(object\)](#) , [ControllerBase.TryValidateModel\(object, string\)](#) ,
 [ControllerBase.HttpContext](#) , [ControllerBase.Request](#) , [ControllerBase.Response](#) ,
 [ControllerBase.RouteData](#) , [ControllerBase.ModelState](#) , [ControllerBase.ControllerContext](#) ,
 [ControllerBase.MetadataProvider](#) , [ControllerBase.ModelBinderFactory](#) , [ControllerBase.Url](#) ,
 [ControllerBase.ObjectValidator](#) , [ControllerBase.ProblemDetailsFactory](#) , [ControllerBase.User](#) ,
 [ControllerBase.Empty](#) , [object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) ,
 [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) , [object.MemberwiseClone\(\)](#) ,
 [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Constructors

RecommendationsController(BooksRecService, ApplicationDbContext, ILogger<RecommendationsController>)

Initializes a new instance of the [RecommendationsController](#) class.

```
public RecommendationsController(BooksRecService booksRecService,  
ApplicationDbContext context, ILogger<RecommendationsController> logger)
```

Parameters

booksRecService [BooksRecService](#)

Service for fetching recommendations.

`context ApplicationDbContext`

Application database context.

`logger ILogger<RecommendationsController>`

Logger for the controller.

Methods

CheckHealth()

Check health of the books-rec microservice.

```
[HttpGet("health")]
public Task<ActionResult<BooksRecHealthDto>> CheckHealth()
```

Returns

`Task<ActionResult<BooksRecHealthDto>>`

200 OK with health information from the books-rec service.

GetRecommendations(RecommendationRequestDto)

Get book recommendations based on user's reading history. Recommendations are saved to the database for later retrieval.

```
[HttpPost]
public Task<ActionResult<RecommendationResponseDto>>
GetRecommendations(RecommendationRequestDto request)
```

Parameters

`request RecommendationRequestDto`

Reading history and preferences

Returns

[Task](#)<[ActionResult](#)<[RecommendationResponseDto](#)>>

Netflix-style categorized recommendations

GetSavedRecommendations()

Get saved recommendations from the database.

```
[HttpGet("saved")]
public Task<ActionResult<RecommendationResponseDto>> GetSavedRecommendations()
```

Returns

[Task](#)<[ActionResult](#)<[RecommendationResponseDto](#)>>

200 OK with saved recommendations; 404 NotFound when none exist.

Class ReviewsController

Namespace: [backend.Controllers](#)

Assembly: backend.dll

Controller for managing book reviews. By default this controller requires authentication. Provides endpoints to add or update a review and to retrieve reviews for a book or for the current user.

```
[Authorize]
[ApiController]
[Route("api/[controller]")]
public class ReviewsController : ControllerBase
```

Inheritance

[object](#) ← [ControllerBase](#) ← ReviewsController

Inherited Members

[ControllerBase.StatusCode\(int\)](#) , [ControllerBase.StatusCode\(int, object\)](#) ,
[ControllerBase.Content\(string\)](#) , [ControllerBase.Content\(string, string\)](#) ,
[ControllerBase.Content\(string, string, Encoding\)](#) ,
[ControllerBase.Content\(string, MediaTypeHeaderValue\)](#) , [ControllerBase.NoContent\(\)](#) ,
[ControllerBase.Ok\(\)](#) , [ControllerBase.Ok\(object\)](#) , [ControllerBase.Redirect\(string\)](#) ,
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[ControllerBase.LocalRedirectPreserveMethod\(string\)](#) ,
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 [ControllerBase.AcceptedAtAction\(string, object, object\)](#) ,
 [ControllerBase.AcceptedAtAction\(string, string, object, object\)](#) ,
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 [ControllerBase.Challenge\(AuthenticationProperties, params string\[\]\)](#) , [ControllerBase.Forbid\(\)](#) ,
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 [ControllerBase.SignIn\(ClaimsPrincipal, AuthenticationProperties\)](#) ,
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[ControllerBase.SignOut\(AuthenticationProperties\)](#) , [ControllerBase.SignOut\(params string\[\]\)](#) ,
 [ControllerBase.SignOut\(AuthenticationProperties, params string\[\]\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string, IValueProvider\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string, params Expression<Func<TModel, object>>\[\]\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string, Func<ModelMetadata, bool>\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string, IValueProvider, params Expression<Func<TModel, object>>\[\]\)](#) ,
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 [ControllerBase.TryUpdateModelAsync\(object, Type, string, IValueProvider, Func<ModelMetadata, bool>\)](#) ,
 [ControllerBase.TryValidateModel\(object\)](#) , [ControllerBase.TryValidateModel\(object, string\)](#) ,
 [ControllerBase.HttpContext](#) , [ControllerBase.Request](#) , [ControllerBase.Response](#) ,
 [ControllerBase.RouteData](#) , [ControllerBase.ModelState](#) , [ControllerBase.ControllerContext](#) ,
 [ControllerBase.MetadataProvider](#) , [ControllerBase.ModelBinderFactory](#) , [ControllerBase.Url](#) ,
 [ControllerBase.ObjectValidator](#) , [ControllerBase.ProblemDetailsFactory](#) , [ControllerBase.User](#) ,
 [ControllerBase.Empty](#) , [object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) ,
 [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) , [object.MemberwiseClone\(\)](#) ,
 [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Constructors

ReviewsController(ApplicationDbContext, UserManager< ApplicationUser >)

Initializes a new instance of the [ReviewsController](#) class.

```
public ReviewsController(ApplicationDbContext context, UserManager< ApplicationUser >  
userManager)
```

Parameters

context [ApplicationDbContext](#)

The application database context.

userManager [UserManager](#)< ApplicationUser >

The user manager for user lookups.

Methods

AddOrUpdateReview(CreateReviewDto)

Adds a new review or updates the current user's review for a given book.

```
[HttpPost]  
public Task<ActionResult> AddOrUpdateReview(CreateReviewDto dto)
```

Parameters

dto [CreateReviewDto](#)

Review creation DTO containing BookId, Rating and optional Comment.

Returns

[Task](#)<[ActionResult](#)>

200 OK when the review is saved successfully; 401 Unauthorized when the user can't be identified; 500 on server errors.

GetBookReviews(Guid)

Retrieves all reviews for a specific book. This endpoint is allowed for anonymous access.

```
[HttpGet("{bookId}")]  
[AllowAnonymous]  
public Task<ActionResult<IEnumerable<ReviewDto>>> GetBookReviews(Guid bookId)
```

Parameters

bookId [Guid](#)

Identifier of the book to retrieve reviews for.

Returns

[Task](#)<[ActionResult](#)<[IEnumerable](#)<[ReviewDto](#)>>>

200 OK with a list of [ReviewDto](#). Returns an empty list when there are no reviews.

GetMyReview(Guid)

Retrieves the current authenticated user's review for a specific book.

```
[HttpGet("my/{bookId}")]
public Task<ActionResult<ReviewDto>> GetMyReview(Guid bookId)
```

Parameters

bookId [Guid](#)

Identifier of the book to query.

Returns

[Task](#)<[ActionResult](#)<[ReviewDto](#)>>

200 OK with [ReviewDto](#) when found; 404 NotFound when no review exists for the user/book pair.

Class ShelvesController

Namespace: [backend.Controllers](#)

Assembly: backend.dll

Controller for managing user shelves and shelf contents (books). Requires authentication and exposes endpoints to list, view, create shelves and to add/remove/update books on shelves.

```
[Authorize]
[ApiController]
[Route("api/[controller]")]
public class ShelvesController : ControllerBase
```

Inheritance

[object](#) ← [ControllerBase](#) ← ShelvesController

Inherited Members

[ControllerBase.StatusCode\(int\)](#) , [ControllerBase.StatusCode\(int, object\)](#) ,
[ControllerBase.Content\(string\)](#) , [ControllerBase.Content\(string, string\)](#) ,
[ControllerBase.Content\(string, string, Encoding\)](#) ,
[ControllerBase.Content\(string, MediaTypeHeaderValue\)](#) , [ControllerBase.NoContent\(\)](#) ,
[ControllerBase.Ok\(\)](#) , [ControllerBase.Ok\(object\)](#) , [ControllerBase.Redirect\(string\)](#) ,
[ControllerBase.RedirectPermanent\(string\)](#) , [ControllerBase.RedirectPreserveMethod\(string\)](#) ,
[ControllerBase.RedirectPermanentPreserveMethod\(string\)](#) , [ControllerBase.LocalRedirect\(string\)](#) ,
[ControllerBase.LocalRedirectPermanent\(string\)](#) ,
[ControllerBase.LocalRedirectPreserveMethod\(string\)](#) ,
[ControllerBase.LocalRedirectPermanentPreserveMethod\(string\)](#) ,
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[ControllerBase.RedirectToAction\(string, object\)](#) , [ControllerBase.RedirectToAction\(string, string\)](#) ,
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[ControllerBase.RedirectToAction\(string, string, string\)](#) ,
[ControllerBase.RedirectToAction\(string, string, object, string\)](#) ,
[ControllerBase.RedirectToActionPreserveMethod\(string, string, object, string\)](#) ,
[ControllerBase.RedirectToActionPermanent\(string\)](#) ,
[ControllerBase.RedirectToActionPermanent\(string, object\)](#) ,
[ControllerBase.RedirectToActionPermanent\(string, string\)](#) ,
[ControllerBase.RedirectToActionPermanent\(string, string, string\)](#) ,
[ControllerBase.RedirectToActionPermanent\(string, string, object\)](#) ,
[ControllerBase.RedirectToActionPermanent\(string, string, object, string\)](#) ,

[ControllerBase.RedirectToActionPermanentPreserveMethod\(string, string, object, string\)](#) ,
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 [ControllerBase.RedirectToRoute\(string, object\)](#) , [ControllerBase.RedirectToRoute\(string, string\)](#) ,
 [ControllerBase.RedirectToRoute\(string, object, string\)](#) ,
 [ControllerBase.RedirectToRoutePreserveMethod\(string, object, string\)](#) ,
 [ControllerBase.RedirectToRoutePermanent\(string\)](#) ,
 [ControllerBase.RedirectToRoutePermanent\(object\)](#) ,
 [ControllerBase.RedirectToRoutePermanent\(string, object\)](#) ,
 [ControllerBase.RedirectToRoutePermanent\(string, string\)](#) ,
 [ControllerBase.RedirectToRoutePermanent\(string, object, string\)](#) ,
 [ControllerBase.RedirectToRoutePermanentPreserveMethod\(string, object, string\)](#) ,
 [ControllerBase.RedirectToPage\(string\)](#) , [ControllerBase.RedirectToPage\(string, object\)](#) ,
 [ControllerBase.RedirectToPage\(string, string\)](#) , [ControllerBase.RedirectToPage\(string, string, object\)](#) ,
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 [ControllerBase.RedirectToPagePermanent\(string\)](#) ,
 [ControllerBase.RedirectToPagePermanent\(string, object\)](#) ,
 [ControllerBase.RedirectToPagePermanent\(string, string\)](#) ,
 [ControllerBase.RedirectToPagePermanent\(string, string, string\)](#) ,
 [ControllerBase.RedirectToPagePermanent\(string, string, object, string\)](#) ,
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 [ControllerBase.RedirectToPagePermanentPreserveMethod\(string, string, object, string\)](#) ,
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 [ControllerBase.File\(byte\[\], string, DateTimeOffset?, EntityTagHeaderValue\)](#) ,
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 [ControllerBase.AcceptedAtAction\(string, object\)](#) ,
 [ControllerBase.AcceptedAtAction\(string, string, object\)](#) ,
 [ControllerBase.AcceptedAtAction\(string, string, object, object\)](#) ,
 [ControllerBase.AcceptedAtRoute\(object\)](#) , [ControllerBase.AcceptedAtRoute\(string\)](#) ,
 [ControllerBase.AcceptedAtRoute\(string, object\)](#) , [ControllerBase.AcceptedAtRoute\(object, object\)](#) ,
 [ControllerBase.AcceptedAtRoute\(string, object, object\)](#) , [ControllerBase.Challenge\(\)](#) ,
 [ControllerBase.Challenge\(params string\[\]\)](#) , [ControllerBase.Challenge\(AuthenticationProperties\)](#) ,
 [ControllerBase.Challenge\(AuthenticationProperties, params string\[\]\)](#) , [ControllerBase.Forbid\(\)](#) ,
 [ControllerBase.Forbid\(params string\[\]\)](#) , [ControllerBase.Forbid\(AuthenticationProperties\)](#) ,
 [ControllerBase.Forbid\(AuthenticationProperties, params string\[\]\)](#) ,
 [ControllerBase.SignIn\(ClaimsPrincipal\)](#) , [ControllerBase.SignIn\(ClaimsPrincipal, string\)](#) ,
 [ControllerBase.SignIn\(ClaimsPrincipal, AuthenticationProperties\)](#) ,
 [ControllerBase.SignIn\(ClaimsPrincipal, AuthenticationProperties, string\)](#) , [ControllerBase.SignOut\(\)](#) ,

[ControllerBase.SignOut\(AuthenticationProperties\)](#) , [ControllerBase.SignOut\(params string\[\]\)](#) ,
 [ControllerBase.SignOut\(AuthenticationProperties, params string\[\]\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string, IValueProvider\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string, params Expression<Func<TModel, object>>\[\]\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string, Func<ModelMetadata, bool>\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string, IValueProvider, params Expression<Func<TModel, object>>\[\]\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string, IValueProvider, Func<ModelMetadata, bool>\)](#) ,
 [ControllerBase.TryUpdateModelAsync\(object, Type, string\)](#) ,
 [ControllerBase.TryUpdateModelAsync\(object, Type, string, IValueProvider, Func<ModelMetadata, bool>\)](#) ,
 [ControllerBase.TryValidateModel\(object\)](#) , [ControllerBase.TryValidateModel\(object, string\)](#) ,
 [ControllerBase.HttpContext](#) , [ControllerBase.Request](#) , [ControllerBase.Response](#) ,
 [ControllerBase.RouteData](#) , [ControllerBase.ModelState](#) , [ControllerBase.ControllerContext](#) ,
 [ControllerBase.MetadataProvider](#) , [ControllerBase.ModelBinderFactory](#) , [ControllerBase.Url](#) ,
 [ControllerBase.ObjectValidator](#) , [ControllerBase.ProblemDetailsFactory](#) , [ControllerBase.User](#) ,
 [ControllerBase.Empty](#) , [object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) ,
 [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) , [object.MemberwiseClone\(\)](#) ,
 [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Constructors

ShelvesController(ApplicationDbContext, IGoogleBooksService)

Initializes a new instance of the [ShelvesController](#) class.

```
public ShelvesController(ApplicationDbContext context, IGoogleBooksService  
googleBooksService)
```

Parameters

[context ApplicationDbContext](#)

Application database context.

[googleBooksService IGoogleBooksService](#)

Service to query Google Books for external book data.

Methods

AddBookToShelf(Guid, AddBookToShelfDto)

Adds a book to a user's shelf. The book can be provided by internal BookId, GoogleBookId or ISBN.

```
[HttpPost("{shelfId}/books")]
public Task<ActionResult> AddBookToShelf(Guid shelfId, AddBookToShelfDto dto)
```

Parameters

shelfId [Guid](#)

Identifier of the shelf to add the book to.

dto [AddBookToShelfDto](#)

DTO specifying BookId, GoogleBookId or ISBN.

Returns

[Task](#)<[ActionResult](#)>

200 OK when the book is added; 400 Bad Request for invalid input or duplicates; 404 NotFound when book/shelf cannot be found.

CreateShelf(CreateShelfDto)

Creates a new shelf for the current authenticated user.

```
[HttpPost]
public Task<ActionResult<ShelfDto>> CreateShelf(CreateShelfDto dto)
```

Parameters

dto [CreateShelfDto](#)

DTO containing shelf creation details (e.g., name).

Returns

[Task](#)<[ActionResult](#)<[ShelfDto](#)>>

200 OK with the created [ShelfDto](#) or 400 Bad Request on validation errors.

GetMyShelves()

Retrieves all shelves belonging to the current authenticated user.

```
[HttpGet]  
public Task<ActionResult<IEnumerable<ShelfDto>>> GetMyShelves()
```

Returns

[Task](#)<[ActionResult](#)<[IEnumerable](#)<[ShelfDto](#)>>>

200 OK with a list of [ShelfDto](#) items.

GetShelfBooks(Guid)

Retrieves detailed information and books for a specific shelf.

```
[HttpGet("{id}/books")]  
public Task<ActionResult<ShelfDto>> GetShelfBooks(Guid id)
```

Parameters

[id](#) [Guid](#)

Identifier of the shelf.

Returns

[Task](#)<[ActionResult](#)<[ShelfDto](#)>>

200 OK with [ShelfDto](#) when found and owned by the current user; 403 Forbidden when not owned; 404 NotFound when the shelf does not exist.

RemoveBookFromShelf(Guid, Guid)

Removes a book from a user's shelf.

```
[HttpDelete("{shelfId}/books/{bookId}")]
public Task<ActionResult> RemoveBookFromShelf(Guid shelfId, Guid bookId)
```

Parameters

shelfId [Guid](#)

Shelf identifier.

bookId [Guid](#)

Book identifier to remove.

Returns

[Task](#)<[ActionResult](#)>

200 OK when removed; 404 NotFound when the book is not on the shelf or shelf doesn't belong to the user.

UpdateBookProgress(Guid, Guid, UpdateShelfBookProgressDto)

Updates reading progress for a book on a shelf.

```
[HttpPut("{shelfId}/books/{bookId}/progress")]
public Task<ActionResult> UpdateBookProgress(Guid shelfId, Guid bookId,
UpdateShelfBookProgressDto dto)
```

Parameters

shelfId [Guid](#)

Shelf identifier.

bookId [Guid](#)

Book identifier on the shelf.

dto [UpdateShelfBookProgressDto](#)

DTO containing the current page number.

Returns

[Task](#)<[ActionResult](#)>

200 OK when updated; 400 Bad Request when progress is invalid; 404 NotFound when not found.

Class UsersController

Namespace: [backend.Controllers](#)

Assembly: backend.dll

Controller for user-related operations: profile retrieval and updates, community browsing and social actions (follow/unfollow). Most endpoints require authentication.

```
[Authorize]
[ApiController]
[Route("api/[controller]")]
public class UsersController : ControllerBase
```

Inheritance

[object](#) ← [ControllerBase](#) ← UsersController

Inherited Members

[ControllerBase.StatusCode\(int\)](#) , [ControllerBase.StatusCode\(int, object\)](#) ,
[ControllerBase.Content\(string\)](#) , [ControllerBase.Content\(string, string\)](#) ,
[ControllerBase.Content\(string, string, Encoding\)](#) ,
[ControllerBase.Content\(string, MediaTypeHeaderValue\)](#) , [ControllerBase.NoContent\(\)](#) ,
[ControllerBase.Ok\(\)](#) , [ControllerBase.Ok\(object\)](#) , [ControllerBase.Redirect\(string\)](#) ,
[ControllerBase.RedirectPermanent\(string\)](#) , [ControllerBase.RedirectPreserveMethod\(string\)](#) ,
[ControllerBase.RedirectPermanentPreserveMethod\(string\)](#) , [ControllerBase.LocalRedirect\(string\)](#) ,
[ControllerBase.LocalRedirectPermanent\(string\)](#) ,
[ControllerBase.LocalRedirectPreserveMethod\(string\)](#) ,
[ControllerBase.LocalRedirectPermanentPreserveMethod\(string\)](#) ,
[ControllerBase.RedirectToAction\(\)](#) , [ControllerBase.RedirectToAction\(string\)](#) ,
[ControllerBase.RedirectToAction\(string, object\)](#) , [ControllerBase.RedirectToAction\(string, string\)](#) ,
[ControllerBase.RedirectToAction\(string, string, object\)](#) ,
[ControllerBase.RedirectToAction\(string, string, string\)](#) ,
[ControllerBase.RedirectToAction\(string, string, object, string\)](#) ,
[ControllerBase.RedirectToActionPreserveMethod\(string, string, object, string\)](#) ,
[ControllerBase.RedirectToActionPermanent\(string\)](#) ,
[ControllerBase.RedirectToActionPermanent\(string, object\)](#) ,
[ControllerBase.RedirectToActionPermanent\(string, string\)](#) ,
[ControllerBase.RedirectToActionPermanent\(string, string, string\)](#) ,
[ControllerBase.RedirectToActionPermanent\(string, string, object\)](#) ,
[ControllerBase.RedirectToActionPermanent\(string, string, object, string\)](#) ,

[ControllerBase.RedirectToActionPermanentPreserveMethod\(string, string, object, string\)](#) ,
 [ControllerBase.RedirectToRoute\(string\)](#) , [ControllerBase.RedirectToRoute\(object\)](#) ,
 [ControllerBase.RedirectToRoute\(string, object\)](#) , [ControllerBase.RedirectToRoute\(string, string\)](#) ,
 [ControllerBase.RedirectToRoute\(string, object, string\)](#) ,
 [ControllerBase.RedirectToRoutePreserveMethod\(string, object, string\)](#) ,
 [ControllerBase.RedirectToRoutePermanent\(string\)](#) ,
 [ControllerBase.RedirectToRoutePermanent\(object\)](#) ,
 [ControllerBase.RedirectToRoutePermanent\(string, object\)](#) ,
 [ControllerBase.RedirectToRoutePermanent\(string, string\)](#) ,
 [ControllerBase.RedirectToRoutePermanent\(string, object, string\)](#) ,
 [ControllerBase.RedirectToRoutePermanentPreserveMethod\(string, object, string\)](#) ,
 [ControllerBase.RedirectToPage\(string\)](#) , [ControllerBase.RedirectToPage\(string, object\)](#) ,
 [ControllerBase.RedirectToPage\(string, string\)](#) , [ControllerBase.RedirectToPage\(string, string, object\)](#) ,
 [ControllerBase.RedirectToPage\(string, string, string\)](#) ,
 [ControllerBase.RedirectToPage\(string, string, object, string\)](#) ,
 [ControllerBase.RedirectToPagePermanent\(string\)](#) ,
 [ControllerBase.RedirectToPagePermanent\(string, object\)](#) ,
 [ControllerBase.RedirectToPagePermanent\(string, string\)](#) ,
 [ControllerBase.RedirectToPagePermanent\(string, string, string\)](#) ,
 [ControllerBase.RedirectToPagePermanent\(string, string, object, string\)](#) ,
 [ControllerBase.RedirectToPagePreserveMethod\(string, string, object, string\)](#) ,
 [ControllerBase.RedirectToPagePermanentPreserveMethod\(string, string, object, string\)](#) ,
 [ControllerBase.File\(byte\[\], string\)](#) , [ControllerBase.File\(byte\[\], string, bool\)](#) ,
 [ControllerBase.File\(byte\[\], string, string\)](#) , [ControllerBase.File\(byte\[\], string, string, bool\)](#) ,
 [ControllerBase.File\(byte\[\], string, DateTimeOffset?, EntityTagHeaderValue\)](#) ,
 [ControllerBase.File\(byte\[\], string, DateTimeOffset?, EntityTagHeaderValue, bool\)](#) ,
 [ControllerBase.File\(byte\[\], string, string, DateTimeOffset?, EntityTagHeaderValue\)](#) ,
 [ControllerBase.File\(byte\[\], string, string, DateTimeOffset?, EntityTagHeaderValue, bool\)](#) ,
 [ControllerBase.File\(Stream, string\)](#) , [ControllerBase.File\(Stream, string, bool\)](#) ,
 [ControllerBase.File\(Stream, string, string\)](#) , [ControllerBase.File\(Stream, string, string, bool\)](#) ,
 [ControllerBase.File\(Stream, string, DateTimeOffset?\)](#) , [ControllerBase.EntityTagHeaderValue](#) ,
 [ControllerBase.File\(Stream, string, DateTimeOffset?, EntityTagHeaderValue\)](#) ,
 [ControllerBase.File\(Stream, string, string, DateTimeOffset?\)](#) , [ControllerBase.EntityTagHeaderValue](#) ,
 [ControllerBase.File\(Stream, string, string, DateTimeOffset?, EntityTagHeaderValue, bool\)](#) ,
 [ControllerBase.File\(string, string\)](#) , [ControllerBase.File\(string, string, bool\)](#) ,
 [ControllerBase.File\(string, string, string\)](#) , [ControllerBase.File\(string, string, string, bool\)](#) ,
 [ControllerBase.File\(string, string, DateTimeOffset?\)](#) , [ControllerBase.EntityTagHeaderValue](#) ,
 [ControllerBase.File\(string, string, DateTimeOffset?, EntityTagHeaderValue\)](#) ,
 [ControllerBase.File\(string, string, string, DateTimeOffset?\)](#) , [ControllerBase.EntityTagHeaderValue](#) ,
 [ControllerBase.File\(string, string, string, DateTimeOffset?, EntityTagHeaderValue\)](#) ,
 [ControllerBase.File\(string, string, string, DateTimeOffset?, EntityTagHeaderValue, bool\)](#) ,

[ControllerBase.PhysicalFile\(string, string\)](#) , [ControllerBase.PhysicalFile\(string, string, bool\)](#) ,
 [ControllerBase.PhysicalFile\(string, string, string\)](#) ,
 [ControllerBase.PhysicalFile\(string, string, string, bool\)](#) ,
 [ControllerBase.PhysicalFile\(string, string, DateTimeOffset?, EntityTagHeaderValue\)](#) ,
 [ControllerBase.PhysicalFile\(string, string, DateTimeOffset?, EntityTagHeaderValue, bool\)](#) ,
 [ControllerBase.PhysicalFile\(string, string, string, DateTimeOffset?, EntityTagHeaderValue\)](#) ,
 [ControllerBase.PhysicalFile\(string, string, string, DateTimeOffset?, EntityTagHeaderValue, bool\)](#) ,
 [ControllerBase.Unauthorized\(\)](#) , [ControllerBase.Unauthorized\(object\)](#) , [ControllerBase.NotFound\(\)](#) ,
 [ControllerBase.NotFound\(object\)](#) , [ControllerBase.BadRequest\(\)](#) ,
 [ControllerBase.BadRequest\(object\)](#) , [ControllerBase.BadRequest\(ModelStateDictionary\)](#) ,
 [ControllerBase.UnprocessableEntity\(\)](#) , [ControllerBase.UnprocessableEntity\(object\)](#) ,
 [ControllerBase.UnprocessableEntity\(ModelStateDictionary\)](#) , [ControllerBase.Conflict\(\)](#) ,
 [ControllerBase.Conflict\(object\)](#) , [ControllerBase.Conflict\(ModelStateDictionary\)](#) ,
 [ControllerBase.Problem\(string, string, int?, string, string\)](#) ,
 [ControllerBase.ValidationProblem\(ValidationProblemDetails\)](#) ,
 [ControllerBase.ValidationProblem\(ModelStateDictionary\)](#) , [ControllerBase.ValidationProblem\(\)](#) ,
 [ControllerBase.ValidationProblem\(string, string, int?, string, string, ModelStateDictionary\)](#) ,
 [ControllerBase.Created\(\)](#) , [ControllerBase.Created\(string, object\)](#) ,
 [ControllerBase.Created\(Uri, object\)](#) , [ControllerBase.CreatedAtAction\(string, object\)](#) ,
 [ControllerBase.CreatedAtAction\(string, object, object\)](#) ,
 [ControllerBase.CreatedAtAction\(string, string, object, object\)](#) ,
 [ControllerBase.CreatedAtRoute\(string, object\)](#) , [ControllerBase.CreatedAtRoute\(object, object\)](#) ,
 [ControllerBase.CreatedAtRoute\(string, object, object\)](#) , [ControllerBase.Accepted\(\)](#) ,
 [ControllerBase.Accepted\(object\)](#) , [ControllerBase.Accepted\(Uri\)](#) , [ControllerBase.Accepted\(string\)](#) ,
 [ControllerBase.Accepted\(string, object\)](#) , [ControllerBase.Accepted\(Uri, object\)](#) ,
 [ControllerBase.AcceptedAtAction\(string\)](#) , [ControllerBase.AcceptedAtAction\(string, string\)](#) ,
 [ControllerBase.AcceptedAtAction\(string, object\)](#) ,
 [ControllerBase.AcceptedAtAction\(string, string, object\)](#) ,
 [ControllerBase.AcceptedAtAction\(string, object, object\)](#) ,
 [ControllerBase.AcceptedAtAction\(string, string, object, object\)](#) ,
 [ControllerBase.AcceptedAtRoute\(object\)](#) , [ControllerBase.AcceptedAtRoute\(string\)](#) ,
 [ControllerBase.AcceptedAtRoute\(string, object\)](#) , [ControllerBase.AcceptedAtRoute\(object, object\)](#) ,
 [ControllerBase.AcceptedAtRoute\(string, object, object\)](#) , [ControllerBase.Challenge\(\)](#) ,
 [ControllerBase.Challenge\(params string\[\]\)](#) , [ControllerBase.Challenge\(AuthenticationProperties\)](#) ,
 [ControllerBase.Challenge\(AuthenticationProperties, params string\[\]\)](#) , [ControllerBase.Forbid\(\)](#) ,
 [ControllerBase.Forbid\(params string\[\]\)](#) , [ControllerBase.Forbid\(AuthenticationProperties\)](#) ,
 [ControllerBase.Forbid\(AuthenticationProperties, params string\[\]\)](#) ,
 [ControllerBase.SignIn\(ClaimsPrincipal\)](#) , [ControllerBase.SignIn\(ClaimsPrincipal, string\)](#) ,
 [ControllerBase.SignIn\(ClaimsPrincipal, AuthenticationProperties\)](#) ,
 [ControllerBase.SignIn\(ClaimsPrincipal, AuthenticationProperties, string\)](#) , [ControllerBase.SignOut\(\)](#) ,

[ControllerBase.SignOut\(AuthenticationProperties\)](#) , [ControllerBase.SignOut\(params string\[\]\)](#) ,
 [ControllerBase.SignOut\(AuthenticationProperties, params string\[\]\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string, IValueProvider\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string, params Expression<Func<TModel, object>>\[\]\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string, Func<ModelMetadata, bool>\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string, IValueProvider, params Expression<Func<TModel, object>>\[\]\)](#) ,
 [ControllerBase.TryUpdateModelAsync<TModel>\(TModel, string, IValueProvider, Func<ModelMetadata, bool>\)](#) ,
 [ControllerBase.TryUpdateModelAsync\(object, Type, string\)](#) ,
 [ControllerBase.TryUpdateModelAsync\(object, Type, string, IValueProvider, Func<ModelMetadata, bool>\)](#) ,
 [ControllerBase.TryValidateModel\(object\)](#) , [ControllerBase.TryValidateModel\(object, string\)](#) ,
 [ControllerBase.HttpContext](#) , [ControllerBase.Request](#) , [ControllerBase.Response](#) ,
 [ControllerBase.RouteData](#) , [ControllerBase.ModelState](#) , [ControllerBase.ControllerContext](#) ,
 [ControllerBase.MetadataProvider](#) , [ControllerBase.ModelBinderFactory](#) , [ControllerBase.Url](#) ,
 [ControllerBase.ObjectValidator](#) , [ControllerBase.ProblemDetailsFactory](#) , [ControllerBase.User](#) ,
 [ControllerBase.Empty](#) , [object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) ,
 [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) , [object.MemberwiseClone\(\)](#) ,
 [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Constructors

UsersController(UserManager<ApplicationUser>, ApplicationDbContext, IGoogleBooksService)

Initializes a new instance of the [UsersController](#) class.

```
public UsersController(UserManager<ApplicationUser> userManager,  
ApplicationDbContext context, IGoogleBooksService googleBooksService)
```

Parameters

userManager [UserManager< ApplicationUser >](#)

User manager for identity operations.

[context ApplicationDbContext](#)

Application database context.

[googleBooksService IGoogleBooksService](#)

Service to fetch Google Books data.

Methods

FollowUser(string)

Follows the user with the specified id. The caller cannot follow themselves.

```
[HttpPost("{id}/follow")]
public Task<IActionResult> FollowUser(string id)
```

Parameters

[id string](#)

Identifier of the user to follow.

Returns

[Task<IActionResult>](#)

200 OK on success; 400 Bad Request when following self or already following; 404 NotFound when target user does not exist.

GetMyProfile()

Retrieves profile information for the current authenticated user, including shelves and favorite book details when available.

```
[HttpGet("me")]
public Task<ActionResult<UserProfileDto>> GetMyProfile()
```

Returns

[Task](#)<ActionResult<UserProfileDto>>

200 OK with [UserProfileDto](#) when user exists; 404 NotFound if user not found.

GetUser(string)

Retrieves public details for the specified user including their statistics and favorite book.

```
[HttpGet("{id}")]
public Task<ActionResult<UserDetailDto>> GetUser(string id)
```

Parameters

[id](#) string

Identifier of the user to retrieve.

Returns

[Task](#)<ActionResult<UserDetailDto>>

200 OK with [UserDetailDto](#) when found; 404 NotFound when user does not exist.

GetUsers()

Retrieves a list of community users for browsing. The current user is excluded from results.

```
[HttpGet]
public Task<ActionResult<List<UserCommunityDto>>> GetUsers()
```

Returns

[Task](#)<ActionResult<ListUserCommunityDto

200 OK with a list of [UserCommunityDto](#) items.

SearchUsers(string)

Searches users by username, display name, or email (case-insensitive). Limited to 20 results.

```
[HttpGet("search")]
public Task<ActionResult<List<UserCommunityDto>>> SearchUsers(string q)
```

Parameters

q [string](#)

Search query string.

Returns

[Task](#)<[ActionResult](#)<[List](#)<[UserCommunityDto](#)>>>

200 OK with matching [UserCommunityDto](#) items.

UnfollowUser(string)

Unfollows the specified user for the current authenticated user.

```
[HttpDelete("{id}/follow")]
public Task<IActionResult> UnfollowUser(string id)
```

Parameters

id [string](#)

Identifier of the user to unfollow.

Returns

[Task](#)<[IActionResult](#)>

200 OK on success; 400 Bad Request when not currently following the user.

UpdateAvatar(UpdateAvatarDto)

Updates the current user's avatar (profile picture URL).

```
[HttpPut("me/avatar")]
public Task<IActionResult> UpdateAvatar(UpdateAvatarDto dto)
```

Parameters

dto [UpdateAvatarDto](#)

DTO containing the new profile picture URL.

Returns

[Task](#)<[IActionResult](#)>

200 OK with the updated URL on success; 404 NotFound when user not found.

UpdateProfile(UpdateUserProfileDto)

Updates the current user's profile information such as bio and favorite book (by GoogleBookId or FavoriteBookId).

```
[HttpPut("me/profile")]
public Task<IActionResult> UpdateProfile(UpdateUserProfileDto dto)
```

Parameters

dto [UpdateUserProfileDto](#)

Profile update DTO with optional favorite book identifiers.

Returns

[Task](#)<[IActionResult](#)>

200 OK on success; 400 Bad Request for invalid input; 404 NotFound when user can't be found.

Namespace backend.DTOs

Classes

[AddBookToShelfDto](#)

[BookDto](#)

Data transfer object used to return book information to clients.

[BookInputDto](#)

A book from user's reading history for recommendation request.

[BooksRecHealthDto](#)

Health check response from books-rec service.

[CreateBookDto](#)

DTO used to create a new local book entry.

[CreateReviewDto](#)

DTO used to create or update a review.

[CreateShelfDto](#)

[LoginDto](#)

[RecommendationCategoryDto](#)

A Netflix-style recommendation category (shelf).

[RecommendationRequestDto](#)

Request for book recommendations.

[RecommendationResponseDto](#)

Full recommendation response with multiple categories.

[RecommendedBookDto](#)

A recommended book from the books-rec service.

[RegisterDto](#)

[ReviewDto](#)

DTO representing a persisted review returned to clients.

[ShelfBookDto](#)

[ShelfDto](#)

[UpdateAvatarDto](#)

DTO for updating a user's avatar (profile picture URL).

[UpdateShelfBookProgressDto](#)

[UpdateUserProfileDto](#)

DTO used to update profile fields such as bio and favorite book.

[UserCommunityDto](#)

DTO used to present users in community lists and search results.

[UserDetailDto](#)

Detailed public information about a user, used on profile pages.

[UserProfileDto](#)

Public profile information for the current authenticated user.

Class AddBookToShelfDto

Namespace: [backend.DTOs](#)

Assembly: backend.dll

```
public class AddBookToShelfDto
```

Inheritance

[object](#) ← AddBookToShelfDto

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Properties

BookId

```
public Guid? BookId { get; set; }
```

Property Value

[Guid](#)?

GoogleBookId

```
public string? GoogleBookId { get; set; }
```

Property Value

[string](#)

Isbn

```
public string? Isbn { get; set; }
```

Property Value

[string](#) ↗

Class BookDto

Namespace: [backend.DTOs](#)

Assembly: backend.dll

Data transfer object used to return book information to clients.

```
public class BookDto
```

Inheritance

[object](#) ← BookDto

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Properties

Authors

List of author names (first and last name strings).

```
public List<string> Authors { get; set; }
```

Property Value

[List](#)<[string](#)>

AverageRating

Average rating calculated from reviews; 0 when no reviews exist.

```
public double AverageRating { get; set; }
```

Property Value

[double](#)

CoverUrl

URL to the cover image if available.

```
public string? CoverUrl { get; set; }
```

Property Value

[string](#)

Description

Optional description or summary of the book.

```
public string? Description { get; set; }
```

Property Value

[string](#)

Genres

List of genre names.

```
public List<string> Genres { get; set; }
```

Property Value

[List](#)<[string](#)>

GoogleBookId

External Google Books ID when the item comes from Google Books.

```
public string? GoogleBookId { get; set; }
```

Property Value

[string ↗](#)

ISBN

ISBN identifier (typically 10 or 13 characters).

```
public string ISBN { get; set; }
```

Property Value

[string ↗](#)

Id

Unique identifier of the book (local DB GUID). For externally-sourced books this may be Guid.Empty.

```
public Guid Id { get; set; }
```

Property Value

[Guid ↗](#)

PageCount

Number of pages in the book.

```
public int PageCount { get; set; }
```

Property Value

[int ↗](#)

Title

Book title.

```
public string Title { get; set; }
```

Property Value

[string](#) ↗

Class BookInputDto

Namespace: [backend.DTOs](#)

Assembly: backend.dll

A book from user's reading history for recommendation request.

```
public class BookInputDto
```

Inheritance

[object](#) ← BookInputDto

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Properties

Author

```
[Required]  
[JsonPropertyName("author")]  
public string Author { get; set; }
```

Property Value

[string](#)

CoverUrl

```
[JsonPropertyName("cover_url")]  
public string? CoverUrl { get; set; }
```

Property Value

[string](#)

Genre

```
[JsonPropertyName("genre")]
public string? Genre { get; set; }
```

Property Value

[string](#)?

Rating

```
[JsonPropertyName("rating")]
[Range(1, 5)]
public int? Rating { get; set; }
```

Property Value

[int](#)?

Title

```
[Required]
[JsonPropertyName("title")]
public string Title { get; set; }
```

Property Value

[string](#)?

Class BooksRecHealthDto

Namespace: [backend.DTOs](#)

Assembly: backend.dll

Health check response from books-rec service.

```
public class BooksRecHealthDto
```

Inheritance

[object](#) ← BooksRecHealthDto

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Properties

BooksIndexed

```
[JsonPropertyName("books_indexed")]
public int? BooksIndexed { get; set; }
```

Property Value

[int](#)?

Error

```
[JsonPropertyName("error")]
public string? Error { get; set; }
```

Property Value

[string](#)

Hint

```
[JsonPropertyName("hint")]
public string? Hint { get; set; }
```

Property Value

[string ↗](#)

Status

```
[JsonPropertyName("status")]
public string Status { get; set; }
```

Property Value

[string ↗](#)

Class CreateBookDto

Namespace: [backend.DTOs](#)

Assembly: backend.dll

DTO used to create a new local book entry.

```
public class CreateBookDto
```

Inheritance

[object](#) ← CreateBookDto

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Properties

AuthorIds

IDs of existing authors to associate with this book.

```
public List<Guid> AuthorIds { get; set; }
```

Property Value

[List](#)<[Guid](#)>

CoverUrl

Optional cover image URL.

```
public string? CoverUrl { get; set; }
```

Property Value

[string](#)

Description

Optional description.

```
public string? Description { get; set; }
```

PropertyValue

[string](#)

GenreIds

IDs of existing genres to associate with this book.

```
public List<int> GenreIds { get; set; }
```

PropertyValue

[List](#)<[int](#)>

ISBN

ISBN for the book (required, max length 13).

```
[Required]  
[MaxLength(13)]  
public string ISBN { get; set; }
```

PropertyValue

[string](#)

PageCount

Number of pages (optional).

```
public int PageCount { get; set; }
```

Property Value

[int ↗](#)

PublishedDate

Optional published date.

```
public DateTime? PublishedDate { get; set; }
```

Property Value

[DateTime ↗?](#)

Title

Title of the book (required, max length 200).

[Required]
[MaxLength(200)]
`public string Title { get; set; }`

Property Value

[string ↗](#)

Class CreateReviewDto

Namespace: [backend.DTOs](#)

Assembly: backend.dll

DTO used to create or update a review.

```
public class CreateReviewDto
```

Inheritance

[object](#) ← CreateReviewDto

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Properties

BookId

Book identifier the review is associated with.

```
[Required]  
public Guid BookId { get; set; }
```

Property Value

[Guid](#)

Comment

Optional review text.

```
public string? Comment { get; set; }
```

Property Value

[string](#) ↗

Rating

Rating value (required, between 1 and 5).

```
[Required]  
[Range(1, 5)]  
public int Rating { get; set; }
```

Property Value

[int](#) ↗

Class CreateShelfDto

Namespace: [backend.DTOs](#)

Assembly: backend.dll

```
public class CreateShelfDto
```

Inheritance

[object](#) ← CreateShelfDto

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Properties

Name

[Required]
[MaxLength(50)]
public string Name { get; set; }

Property Value

[string](#)

Class LoginDto

Namespace: [backend.DTOs](#)

Assembly: backend.dll

```
public class LoginDto
```

Inheritance

[object](#) ← LoginDto

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Properties

Email

User's email address

```
[Required(ErrorMessage = "Email is required")]
[EmailAddress(ErrorMessage = "Invalid email format")]
[RegularExpression("^[a-zA-Z0-9]([a-zA-Z0-9._-]*[a-zA-Z0-9])@[a-zA-Z0-9]([a-zA-Z0-
9-]*[a-zA-Z0-9])?(\\.[a-zA-Z0-9]([a-zA-Z0-9-]*[a-zA-Z0-9])?)^\\.[a-zA-Z]{2,}$",
ErrorMessage = "Invalid email format")]
public string Email { get; set; }
```

Property Value

[string](#)

Password

User's password

```
[Required(ErrorMessage = "Password is required")]
public string Password { get; set; }
```

Property Value

[string](#) ↗

Class RecommendationCategoryDto

Namespace: [backend.DTOs](#)

Assembly: backend.dll

A Netflix-style recommendation category (shelf).

```
public class RecommendationCategoryDto
```

Inheritance

[object](#) ← RecommendationCategoryDto

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Properties

CategoryTitle

```
[JsonPropertyName("category_title")]
public string CategoryTitle { get; set; }
```

Property Value

[string](#)

Items

```
[JsonPropertyName("items")]
public List<RecommendedBookDto> Items { get; set; }
```

Property Value

[List](#)<[RecommendedBookDto](#)>

Type

```
[JsonPropertyName("type")]
public string Type { get; set; }
```

Property Value

[string](#) ↗

Class RecommendationRequestDto

Namespace: [backend.DTOs](#)

Assembly: backend.dll

Request for book recommendations.

```
public class RecommendationRequestDto
```

Inheritance

[object](#) ← RecommendationRequestDto

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Properties

History

```
[Required]  
[MinLength(1)]  
[JsonPropertyName("history")]  
public List<BookInputDto> History { get; set; }
```

Property Value

[List](#)<[BookInputDto](#)>

PreferredLanguage

```
[JsonPropertyName("preferred_language")]  
public string PreferredLanguage { get; set; }
```

Property Value

[string](#) ↗

UserId

```
[JsonPropertyName("user_id")]
public string? UserId { get; set; }
```

Property Value

[string](#) ↗

Class RecommendationResponseDto

Namespace: [backend.DTOs](#)

Assembly: backend.dll

Full recommendation response with multiple categories.

```
public class RecommendationResponseDto
```

Inheritance

[object](#) ← RecommendationResponseDto

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Properties

Recommendations

```
[JsonPropertyName("recommendations")]
public List<RecommendationCategoryDto> Recommendations { get; set; }
```

Property Value

[List](#)<[RecommendationCategoryDto](#)>

Class RecommendedBookDto

Namespace: [backend.DTOs](#)

Assembly: backend.dll

A recommended book from the books-rec service.

```
public class RecommendedBookDto
```

Inheritance

[object](#) ← RecommendedBookDto

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Properties

Author

```
[JsonPropertyName("author")]
public string Author { get; set; }
```

Property Value

[string](#)

CoverUrl

```
[JsonPropertyName("cover_url")]
public string? CoverUrl { get; set; }
```

Property Value

[string](#)

Description

```
[JsonPropertyName("description")]
public string? Description { get; set; }
```

Property Value

[string](#) ↗

Genre

```
[JsonPropertyName("genre")]
public string? Genre { get; set; }
```

Property Value

[string](#) ↗

Language

```
[JsonPropertyName("language")]
public string Language { get; set; }
```

Property Value

[string](#) ↗

MatchScore

```
[JsonPropertyName("match_score")]
public double MatchScore { get; set; }
```

Property Value

[double](#) ↗

Title

```
[JsonPropertyName("title")]
public string Title { get; set; }
```

Property Value

[string](#) ↗

Class RegisterDto

Namespace: [backend.DTOs](#)

Assembly: backend.dll

```
public class RegisterDto
```

Inheritance

[object](#) ← RegisterDto

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Properties

ConfirmPassword

User's password confirmation

```
[Required(ErrorMessage = "Confirm password is required")]
[Compare("Password", ErrorMessage = "Passwords do not match")]
public string ConfirmPassword { get; set; }
```

Property Value

[string](#)

DisplayName

User's display name

```
[Required(ErrorMessage = "Display name is required")]
[MinLength(3, ErrorMessage = "Display name must be at least 3 characters long")]
[MaxLength(30, ErrorMessage = "Display name cannot exceed 30 characters")]
[RegularExpression("^[\\p{L}\\p{N}](?:[\\p{L}\\p{N} ._-]*[\\p{L}\\p{N}])?$', ErrorMessage = "Display name can contain letters, numbers, spaces, dots, underscores")]
```

```
or hyphens, and cannot start or end with a space.")]  
public string DisplayName { get; set; }
```

Property Value

[string](#)

Email

User's email address

```
[Required(ErrorMessage = "Email is required")]  
[EmailAddress(ErrorMessage = "Invalid email format")]  
[RegularExpression("^[a-zA-Z0-9]+([a-zA-Z0-9.-]*[a-zA-Z0-9])?@[a-zA-Z0-9-]*[a-zA-Z0-9]+(\.[a-zA-Z0-9-]*[a-zA-Z0-9])?(\.\.[a-zA-Z0-9]+([a-zA-Z0-9-]*[a-zA-Z0-9]))?*\.\.[a-zA-Z]{2,}+$",  
ErrorMessage = "Email must be in valid format (e.g., user@example.com)")]  
public string Email { get; set; }
```

Property Value

[string](#)

Password

User's password

```
[Required(ErrorMessage = "Password is required")]  
[MinLength(8, ErrorMessage = "Password must be at least 8 characters long")]  
public string Password { get; set; }
```

Property Value

[string](#)

Class ReviewDto

Namespace: [backend.DTOs](#)

Assembly: backend.dll

DTO representing a persisted review returned to clients.

```
public class ReviewDto
```

Inheritance

[object](#) ← ReviewDto

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Properties

BookId

Identifier of the reviewed book.

```
public Guid BookId { get; set; }
```

Property Value

[Guid](#)

Comment

Optional text comment for the review.

```
public string? Comment { get; set; }
```

Property Value

[string](#)

CreatedAt

UTC timestamp when the review was created.

```
public DateTime CreatedAt { get; set; }
```

Property Value

[DateTime](#)

Id

Unique identifier of the review.

```
public Guid Id { get; set; }
```

Property Value

[Guid](#)

Rating

Rating given by the user (1-5).

```
public int Rating { get; set; }
```

Property Value

[int](#)

UserAvatarUrl

URL to the reviewer's avatar image, if available.

```
public string? UserAvatarUrl { get; set; }
```

Property Value

[string](#) ↗

UserName

Username of the reviewer.

```
public string UserName { get; set; }
```

Property Value

[string](#) ↗

Class ShelfBookDto

Namespace: [backend.DTOs](#)

Assembly: backend.dll

```
public class ShelfBookDto
```

Inheritance

[object](#) ← ShelfBookDto

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Properties

AddedAt

```
public DateTime AddedAt { get; set; }
```

Property Value

[DateTime](#)

Authors

```
public List<string> Authors { get; set; }
```

Property Value

[List](#)<[string](#)>

AverageRating

```
public double AverageRating { get; set; }
```

Property Value

[double](#) ↗

CoverUrl

```
public string? CoverUrl { get; set; }
```

Property Value

[string](#) ↗

CurrentPage

```
public int CurrentPage { get; set; }
```

Property Value

[int](#) ↗

Description

```
public string? Description { get; set; }
```

Property Value

[string](#) ↗

Genres

```
public List<string> Genres { get; set; }
```

Property Value

[List](#)<[string](#)>

ISBN

```
public string ISBN { get; set; }
```

Property Value

[string](#)

Id

```
public Guid Id { get; set; }
```

Property Value

[Guid](#)

PageCount

```
public int PageCount { get; set; }
```

Property Value

[int](#)

Title

```
public string Title { get; set; }
```

Property Value

[string](#) ↗

Class ShelfDto

Namespace: [backend.DTOs](#)

Assembly: backend.dll

```
public class ShelfDto
```

Inheritance

[object](#) ← ShelfDto

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Properties

BookCount

```
public int BookCount { get; set; }
```

Property Value

[int](#)

Books

```
public List<ShelfBookDto> Books { get; set; }
```

Property Value

[List](#)<[ShelfBookDto](#)>

Id

```
public Guid Id { get; set; }
```

Property Value

[Guid](#) ↗

Name

```
public string Name { get; set; }
```

Property Value

[string](#) ↗

Class UpdateAvatarDto

Namespace: [backend.DTOs](#)

Assembly: backend.dll

DTO for updating a user's avatar (profile picture URL).

```
public class UpdateAvatarDto
```

Inheritance

[object](#) ← UpdateAvatarDto

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Properties

ProfilePictureUrl

New profile picture URL (required).

```
[Required]  
[Url]  
public string ProfilePictureUrl { get; set; }
```

Property Value

[string](#)

Class UpdateShelfBookProgressDto

Namespace: [backend.DTOs](#)

Assembly: backend.dll

```
public class UpdateShelfBookProgressDto
```

Inheritance

[object](#) ← UpdateShelfBookProgressDto

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Properties

CurrentPage

```
[Required]  
[Range(0, 2147483647)]  
public int CurrentPage { get; set; }
```

Property Value

[int](#)

Class UpdateUserProfileDto

Namespace: [backend.DTOs](#)

Assembly: backend.dll

DTO used to update profile fields such as bio and favorite book.

```
public class UpdateUserProfileDto
```

Inheritance

[object](#) ← UpdateUserProfileDto

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Properties

Bio

Optional biography text (max 500 characters).

```
[MaxLength(500)]  
public string? Bio { get; set; }
```

Property Value

[string](#)

FavoriteBookId

Optional identifier of an existing local book to mark as favorite.

```
public Guid? FavoriteBookId { get; set; }
```

Property Value

[Guid](#)?

GoogleBookId

Optional Google Books ID used to import a favorite book from Google Books.

```
public string? GoogleBookId { get; set; }
```

Property Value

[string](#)

Class UserCommunityDto

Namespace: [backend.DTOs](#)

Assembly: backend.dll

DTO used to present users in community lists and search results.

```
public class UserCommunityDto
```

Inheritance

[object](#) ← UserCommunityDto

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Properties

Bio

Optional short biography.

```
public string? Bio { get; set; }
```

Property Value

[string](#)

DisplayName

Display name shown in lists.

```
public string DisplayName { get; set; }
```

Property Value

[string](#)

FollowersCount

Number of followers the user has.

```
public int FollowersCount { get; set; }
```

Property Value

[int](#)

FollowingCount

Number of users this user follows.

```
public int FollowingCount { get; set; }
```

Property Value

[int](#)

Id

User identifier.

```
public string Id { get; set; }
```

Property Value

[string](#)

IsFollowing

Whether the current caller is following this user.

```
public bool IsFollowing { get; set; }
```

Property Value

[bool](#)

ProfilePictureUrl

URL to small profile image, if any.

```
public string? ProfilePictureUrl { get; set; }
```

Property Value

[string](#)

Class UserDetailDto

Namespace: [backend.DTOs](#)

Assembly: backend.dll

Detailed public information about a user, used on profile pages.

```
public class UserDetailDto
```

Inheritance

[object](#) ← UserDetailDto

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Properties

Bio

Optional biography text.

```
public string? Bio { get; set; }
```

Property Value

[string](#)

CreatedAt

UTC account creation timestamp.

```
public DateTime CreatedAt { get; set; }
```

Property Value

[DateTime](#)

DisplayName

Display name.

```
public string DisplayName { get; set; }
```

PropertyValue

[string](#)

FavoriteBook

The user's favorite book, if set.

```
public BookDto? FavoriteBook { get; set; }
```

PropertyValue

[BookDto](#)

FollowersCount

Number of followers.

```
public int FollowersCount { get; set; }
```

PropertyValue

[int](#)

FollowingCount

Number of followings.

```
public int FollowingCount { get; set; }
```

Property Value

[int](#)

Id

User identifier.

```
public string Id { get; set; }
```

Property Value

[string](#)

IsFollowing

Indicates whether the current caller is following the user.

```
public bool IsFollowing { get; set; }
```

Property Value

[bool](#)

ProfilePictureUrl

URL to the user's profile image.

```
public string? ProfilePictureUrl { get; set; }
```

Property Value

[string](#)

ShelvesCount

Number of shelves the user has created.

```
public int ShelvesCount { get; set; }
```

Property Value

[int↗](#)

UniqueBooksCount

Number of unique books across the user's shelves.

```
public int UniqueBooksCount { get; set; }
```

Property Value

[int↗](#)

Class UserProfileDto

Namespace: [backend.DTOs](#)

Assembly: backend.dll

Public profile information for the current authenticated user.

```
public class UserProfileDto
```

Inheritance

[object](#) ← UserProfileDto

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Properties

Bio

Optional user biography.

```
public string? Bio { get; set; }
```

Property Value

[string](#)

CreatedAt

UTC timestamp when the user account was created.

```
public DateTime CreatedAt { get; set; }
```

Property Value

[DateTime](#)

DisplayName

Display name shown in the UI.

```
public string DisplayName { get; set; }
```

PropertyValue

[string](#)

Email

Primary email address.

```
public string Email { get; set; }
```

PropertyValue

[string](#)

FavoriteBook

The user's favorite book, when set.

```
public BookDto? FavoriteBook { get; set; }
```

PropertyValue

[BookDto](#)

FollowerCount

Number of followers the user has.

```
public int FollowersCount { get; set; }
```

Property Value

[int](#)

FollowingCount

Number of users this user is following.

```
public int FollowingCount { get; set; }
```

Property Value

[int](#)

Id

User identifier.

```
public string Id { get; set; }
```

Property Value

[string](#)

ProfilePictureUrl

URL of the user's profile picture.

```
public string? ProfilePictureUrl { get; set; }
```

Property Value

[string](#)

ShelvesCount

Number of shelves owned by the user.

```
public int ShelvesCount { get; set; }
```

Property Value

[int↗](#)

UniqueBooksCount

Number of unique books across all user shelves.

```
public int UniqueBooksCount { get; set; }
```

Property Value

[int↗](#)

Namespace backend.Data

Classes

[ApplicationDbContext](#)

Entity Framework Core database context for the application. Extends [IdentityDbContext<TUser>](#) with application-specific DbSets.

Class ApplicationDbContext

Namespace: [backend.Data](#)

Assembly: backend.dll

Entity Framework Core database context for the application. Extends [IdentityDbContext<TUser>](#) with application-specific DbSets.

```
public class ApplicationDbContext : IdentityDbContext<ApplicationUser>,
    IInfrastructure<IServiceProvider>, IDbContextDependencies, IDbSetCache,
    IDbContextPoolable, IResettableService, IDisposable, IAsyncDisposable
```

Inheritance

```
object ↵ ← DbContext ↵ ←
IdentityUserContext<ApplicationUser, string> , IdentityUserClaim<string> , IdentityUserLogin<
<string> , IdentityUserToken<string>>> ←
IdentityDbContext<ApplicationUser, IdentityRole<string> , string> , IdentityUserClaim<string> , IdentityUser
Role<string> , IdentityUserLogin<string> , IdentityRoleClaim<string> , IdentityUserToken<
<string>>> ←
IdentityDbContext<ApplicationUser, IdentityRole<string> , string> ←
IdentityDbContext<ApplicationUser> ← ApplicationDbContext
```

Implements

```
IInfrastructure<IServiceProvider> , IDbContextDependencies , IDbSetCache , IDbContextPoolable ,
IResettableService , IDisposable , IAsyncDisposable
```

Inherited Members

```
IdentityDbContext<ApplicationUser, IdentityRole, string, IdentityUserClaim<string> ,
IdentityUserRole<string> , IdentityUserLogin<string> , IdentityRoleClaim<string> ,
IdentityUserToken<string> .OnModelCreating(ModelBuilder) ,
IdentityDbContext<ApplicationUser, IdentityRole, string, IdentityUserClaim<string> ,
IdentityUserRole<string> , IdentityUserLogin<string> , IdentityRoleClaim<string> ,
IdentityUserToken<string> .UserRoles ,
IdentityDbContext<ApplicationUser, IdentityRole, string, IdentityUserClaim<string> ,
IdentityUserRole<string> , IdentityUserLogin<string> , IdentityRoleClaim<string> ,
IdentityUserToken<string> .Roles ,
IdentityDbContext<ApplicationUser, IdentityRole, string, IdentityUserClaim<string> ,
IdentityUserRole<string> , IdentityUserLogin<string> , IdentityRoleClaim<string> ,
IdentityUserToken<string> .RoleClaims ,
```

```
IdentityUserContext<ApplicationUser, string, IdentityUserClaim<string>, IdentityUserLogin<string>,
IdentityUserToken<string>.OnModelCreating(ModelBuilder) ,
IdentityUserContext<ApplicationUser, string, IdentityUserClaim<string>, IdentityUserLogin<string>,
IdentityUserToken<string>.Users ,
IdentityUserContext<ApplicationUser, string, IdentityUserClaim<string>, IdentityUserLogin<string>,
IdentityUserToken<string>.UserClaims ,
IdentityUserContext<ApplicationUser, string, IdentityUserClaim<string>, IdentityUserLogin<string>,
IdentityUserToken<string>.UserLogins ,
IdentityUserContext<ApplicationUser, string, IdentityUserClaim<string>, IdentityUserLogin<string>,
IdentityUserToken<string>.UserTokens ,
IdentityUserContext<ApplicationUser, string, IdentityUserClaim<string>, IdentityUserLogin<string>,
IdentityUserToken<string>.SchemaVersion ,
DbContext.Set< TEntity>() , DbContext.Set< TEntity>(string) ,
DbContext.OnConfiguring(DbContextOptionsBuilder) ,
DbContext.ConfigureConventions(ModelConfigurationBuilder) , DbContext.SaveChanges() ,
DbContext.SaveChanges(bool) , DbContext.SaveChangesAsync(CancellationToken) ,
DbContext.SaveChangesAsync(bool, CancellationToken) , DbContext.Dispose() ,
DbContext.DisposeAsync() , DbContext.Entry< TEntity>(TEntity) , DbContext.Entry(object) ,
DbContext.Add< TEntity>(TEntity) , DbContext.AddAsync< TEntity>(TEntity, CancellationToken) ,
DbContext.Attach< TEntity>(TEntity) , DbContext.Update< TEntity>(TEntity) ,
DbContext.Remove< TEntity>(TEntity) , DbContext.Add(object) ,
DbContext.AddAsync(object, CancellationToken) , DbContext.Attach(object) ,
DbContext.Update(object) , DbContext.Remove(object) , DbContext.AddRange(params object[]) ,
DbContext.AddRangeAsync(params object[]) , DbContext.AttachRange(params object[]) ,
DbContext.UpdateRange(params object[]) , DbContext.RemoveRange(params object[]) ,
DbContext.AddRange(IEnumerable<object>) ,
DbContext.AddRangeAsync(IEnumerable<object>, CancellationToken) ,
DbContext.AttachRange(IEnumerable<object>) , DbContext.UpdateRange(IEnumerable<object>) ,
DbContext.RemoveRange(IEnumerable<object>) , DbContext.Find(Type, params object[]) ,
DbContext.FindAsync(Type, params object[]) ,
DbContext.FindAsync(Type, object[], CancellationToken) , DbContext.Find< TEntity>(params object[]) ,
DbContext.FindAsync< TEntity>(params object[]) ,
DbContext.FindAsync< TEntity>(object[], CancellationToken) ,
DbContext.FromExpression< TResult>(Expression< Func< IQueryable< TResult>>>) ,
DbContext.Database , DbContext.ChangeTracker , DbContext.Model , DbContext.ContextId ,
DbContext.SavingChanges , DbContext.SavedChanges , DbContext.SaveChangesFailed ,
object.Equals(object) , object.Equals(object, object) , object.GetHashCode() , object.GetType() ,
object.MemberwiseClone() , object.ReferenceEquals(object, object) , object.ToString()
```

Constructors

ApplicationDbContext(DbContextOptions<ApplicationDbContext>)

Initializes a new instance of [ApplicationDbContext](#) using the specified options.

```
public ApplicationDbContext(DbContextOptions<ApplicationDbContext> options)
```

Parameters

`options DbContextOptions<ApplicationDbContext>`

The options used to configure the database context.

Properties

Authors

Authors of books.

```
public DbSet<Author> Authors { get; set; }
```

Property Value

[DbSet<Author>](#)

BookAuthors

Join table between books and authors.

```
public DbSet<BookAuthor> BookAuthors { get; set; }
```

Property Value

[DbSet<BookAuthor>](#)

BookGenres

Join table between books and genres.

```
public DbSet<BookGenre> BookGenres { get; set; }
```

Property Value

[DbSet](#)<[BookGenre](#)>

Books

Books stored in the local catalog.

```
public DbSet<Book> Books { get; set; }
```

Property Value

[DbSet](#)<[Book](#)>

Comments

Comments attached to posts.

```
public DbSet<Comment> Comments { get; set; }
```

Property Value

[DbSet](#)<[Comment](#)>

Genres

Genres or categories associated with books.

```
public DbSet<Genre> Genres { get; set; }
```

Property Value

[DbSet](#)<[Genre](#)>

Likes

Likes on posts (user-post relationship).

```
public DbSet<Like> Likes { get; set; }
```

Property Value

[DbSet](#)<[Like](#)>

Notifications

Notifications for user activity.

```
public DbSet<Notification> Notifications { get; set; }
```

Property Value

[DbSet](#)<[Notification](#)>

Posts

Social posts created by users.

```
public DbSet<Post> Posts { get; set; }
```

Property Value

[DbSet](#)<[Post](#)>

RefreshTokens

Refresh tokens for JWT refresh flows.

```
public DbSet<RefreshToken> RefreshTokens { get; set; }
```

Property Value

[DbSet<RefreshToken>](#)

Reviews

User-written reviews for books.

```
public DbSet<Review> Reviews { get; set; }
```

Property Value

[DbSet<Review>](#)

ShelfBooks

Books on user shelves (join table with additional metadata).

```
public DbSet<ShelfBook> ShelfBooks { get; set; }
```

Property Value

[DbSet<ShelfBook>](#)

Shelves

User-created shelves.

```
public DbSet<Shelf> Shelves { get; set; }
```

Property Value

[DbSet](#) <Shelf>

UserFollows

User follow relationships (self-referencing).

```
public DbSet<UserFollow> UserFollows { get; set; }
```

Property Value

[DbSet](#) <[UserFollow](#)>

UserRecommendations

Recommendations generated for users by the recommendations service.

```
public DbSet<UserRecommendation> UserRecommendations { get; set; }
```

Property Value

[DbSet](#) <[UserRecommendation](#)>

Methods

OnModelCreating(ModelBuilder)

Performs EF Core model configuration: sets table naming conventions and configures relationship mappings.

```
protected override void OnModelCreating(ModelBuilder builder)
```

Parameters

builder [ModelBuilder](#)

Remarks

Table names are normalized to lowercase to fit PostgreSQL conventions. Composite keys and relationships for join tables (BookAuthor, BookGenre, ShelfBook) and other relations are configured here.

Namespace backend.Migrations

Classes

[AddReviews](#)

A base class inherited by each EF Core migration.

[AddUserCommunityFields](#)

A base class inherited by each EF Core migration.

[AddUserRecommendations](#)

A base class inherited by each EF Core migration.

[InitialCreate](#)

A base class inherited by each EF Core migration.

Class AddReviews

Namespace: [backend.Migrations](#)

Assembly: backend.dll

A base class inherited by each EF Core migration.

```
[DbContext(typeof(ApplicationDbContext))]
[Migration("20251210190715_AddReviews")]
public class AddReviews : Migration
```

Inheritance

[object](#) ← [Migration](#) ← AddReviews

Inherited Members

[Migration.InitialDatabase](#) , [Migration.TargetModel](#) , [Migration.UpOperations](#) ,
[Migration.DownOperations](#) , [Migration.ActiveProvider](#) , [object.Equals\(object\)](#) ,
[object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Remarks

See [Database migrations](#) for more information and examples.

Methods

BuildTargetModel(ModelBuilder)

Implemented to build the [TargetModel](#).

```
protected override void BuildTargetModel(ModelBuilder modelBuilder)
```

Parameters

`modelBuilder` [ModelBuilder](#)

The [ModelBuilder](#) to use to build the model.

Remarks

See [Database migrations](#) for more information and examples.

Down(MigrationBuilder)

Builds the operations that will migrate the database 'down'.

```
protected override void Down(MigrationBuilder migrationBuilder)
```

Parameters

`migrationBuilder` [MigrationBuilder](#)

The [MigrationBuilder](#) that will build the operations.

Remarks

That is, builds the operations that will take the database from the state left in by this migration so that it returns to the state that it was in before this migration was applied.

This method must be overridden in each class that inherits from [Migration](#) if both 'up' and 'down' migrations are to be supported. If it is not overridden, then calling it will throw and it will not be possible to migrate in the 'down' direction.

See [Database migrations](#) for more information and examples.

Up(MigrationBuilder)

Builds the operations that will migrate the database 'up'.

```
protected override void Up(MigrationBuilder migrationBuilder)
```

Parameters

`migrationBuilder` [MigrationBuilder](#)

The [MigrationBuilder](#) that will build the operations.

Remarks

That is, builds the operations that will take the database from the state left in by the previous migration so that it is up-to-date with regard to this migration.

This method must be overridden in each class that inherits from [Migration](#).

See [Database migrations](#) for more information and examples.

Class AddUserCommunityFields

Namespace: [backend.Migrations](#)

Assembly: backend.dll

A base class inherited by each EF Core migration.

```
[DbContext(typeof(ApplicationDbContext))]
[Migration("20260125122758_AddUserCommunityFields")]
public class AddUserCommunityFields : Migration
```

Inheritance

[object](#) ← [Migration](#) ← AddUserCommunityFields

Inherited Members

[Migration.InitialDatabase](#) , [Migration.TargetModel](#) , [Migration.UpOperations](#) ,
[Migration.DownOperations](#) , [Migration.ActiveProvider](#) , [object.Equals\(object\)](#) ,
[object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Remarks

See [Database migrations](#) for more information and examples.

Methods

BuildTargetModel(ModelBuilder)

Implemented to build the [TargetModel](#).

```
protected override void BuildTargetModel(ModelBuilder modelBuilder)
```

Parameters

`modelBuilder` [ModelBuilder](#)

The [ModelBuilder](#) to use to build the model.

Remarks

See [Database migrations](#) for more information and examples.

Down(MigrationBuilder)

Builds the operations that will migrate the database 'down'.

```
protected override void Down(MigrationBuilder migrationBuilder)
```

Parameters

`migrationBuilder` [MigrationBuilder](#)

The [MigrationBuilder](#) that will build the operations.

Remarks

That is, builds the operations that will take the database from the state left in by this migration so that it returns to the state that it was in before this migration was applied.

This method must be overridden in each class that inherits from [Migration](#) if both 'up' and 'down' migrations are to be supported. If it is not overridden, then calling it will throw and it will not be possible to migrate in the 'down' direction.

See [Database migrations](#) for more information and examples.

Up(MigrationBuilder)

Builds the operations that will migrate the database 'up'.

```
protected override void Up(MigrationBuilder migrationBuilder)
```

Parameters

`migrationBuilder` [MigrationBuilder](#)

The [MigrationBuilder](#) that will build the operations.

Remarks

That is, builds the operations that will take the database from the state left in by the previous migration so that it is up-to-date with regard to this migration.

This method must be overridden in each class that inherits from [Migration](#).

See [Database migrations](#) for more information and examples.

Class AddUserRecommendations

Namespace: [backend.Migrations](#)

Assembly: backend.dll

A base class inherited by each EF Core migration.

```
[DbContext(typeof(ApplicationDbContext))]
[Migration("20251210104643_AddUserRecommendations")]
public class AddUserRecommendations : Migration
```

Inheritance

[object](#) ← [Migration](#) ← AddUserRecommendations

Inherited Members

[Migration.InitialDatabase](#) , [Migration.TargetModel](#) , [Migration.UpOperations](#) ,
[Migration.DownOperations](#) , [Migration.ActiveProvider](#) , [object.Equals\(object\)](#) ,
[object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Remarks

See [Database migrations](#) for more information and examples.

Methods

BuildTargetModel(ModelBuilder)

Implemented to build the [TargetModel](#).

```
protected override void BuildTargetModel(ModelBuilder modelBuilder)
```

Parameters

`modelBuilder` [ModelBuilder](#)

The [ModelBuilder](#) to use to build the model.

Remarks

See [Database migrations](#) for more information and examples.

Down(MigrationBuilder)

Builds the operations that will migrate the database 'down'.

```
protected override void Down(MigrationBuilder migrationBuilder)
```

Parameters

`migrationBuilder` [MigrationBuilder](#)

The [MigrationBuilder](#) that will build the operations.

Remarks

That is, builds the operations that will take the database from the state left in by this migration so that it returns to the state that it was in before this migration was applied.

This method must be overridden in each class that inherits from [Migration](#) if both 'up' and 'down' migrations are to be supported. If it is not overridden, then calling it will throw and it will not be possible to migrate in the 'down' direction.

See [Database migrations](#) for more information and examples.

Up(MigrationBuilder)

Builds the operations that will migrate the database 'up'.

```
protected override void Up(MigrationBuilder migrationBuilder)
```

Parameters

`migrationBuilder` [MigrationBuilder](#)

The [MigrationBuilder](#) that will build the operations.

Remarks

That is, builds the operations that will take the database from the state left in by the previous migration so that it is up-to-date with regard to this migration.

This method must be overridden in each class that inherits from [Migration](#).

See [Database migrations](#) for more information and examples.

Class InitialCreate

Namespace: [backend.Migrations](#)

Assembly: backend.dll

A base class inherited by each EF Core migration.

```
[DbContext(typeof(ApplicationDbContext))]
[Migration("20251120230445_InitialCreate")]
public class InitialCreate : Migration
```

Inheritance

[object](#) ← [Migration](#) ← InitialCreate

Inherited Members

[Migration.InitialDatabase](#) , [Migration.TargetModel](#) , [Migration.UpOperations](#) ,
[Migration.DownOperations](#) , [Migration.ActiveProvider](#) , [object.Equals\(object\)](#) ,
[object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Remarks

See [Database migrations](#) for more information and examples.

Methods

BuildTargetModel(ModelBuilder)

Implemented to build the [TargetModel](#).

```
protected override void BuildTargetModel(ModelBuilder modelBuilder)
```

Parameters

`modelBuilder` [ModelBuilder](#)

The [ModelBuilder](#) to use to build the model.

Remarks

See [Database migrations](#) for more information and examples.

Down(MigrationBuilder)

Builds the operations that will migrate the database 'down'.

```
protected override void Down(MigrationBuilder migrationBuilder)
```

Parameters

`migrationBuilder` [MigrationBuilder](#)

The [MigrationBuilder](#) that will build the operations.

Remarks

That is, builds the operations that will take the database from the state left in by this migration so that it returns to the state that it was in before this migration was applied.

This method must be overridden in each class that inherits from [Migration](#) if both 'up' and 'down' migrations are to be supported. If it is not overridden, then calling it will throw and it will not be possible to migrate in the 'down' direction.

See [Database migrations](#) for more information and examples.

Up(MigrationBuilder)

Builds the operations that will migrate the database 'up'.

```
protected override void Up(MigrationBuilder migrationBuilder)
```

Parameters

`migrationBuilder` [MigrationBuilder](#)

The [MigrationBuilder](#) that will build the operations.

Remarks

That is, builds the operations that will take the database from the state left in by the previous migration so that it is up-to-date with regard to this migration.

This method must be overridden in each class that inherits from [Migration](#).

See [Database migrations](#) for more information and examples.

Namespace backend.Models

Classes

[ApplicationUser](#)

[Author](#)

[Book](#)

[BookAuthor](#)

[BookGenre](#)

[Comment](#)

[Genre](#)

[Like](#)

[Notification](#)

[Post](#)

[RefreshToken](#)

[Review](#)

[Shelf](#)

[ShelfBook](#)

[UserFollow](#)

[UserRecommendation](#)

Stores book recommendations generated for a user.

Class ApplicationUser

Namespace: [backend.Models](#)

Assembly: backend.dll

```
public class ApplicationUser : IdentityUser
```

Inheritance

[object](#) ← [IdentityUser<string>](#) < [IdentityUser](#) ← ApplicationUser

Inherited Members

[IdentityUser<string>.ToString\(\)](#) , [IdentityUser<string>.Id](#) , [IdentityUser<string>.UserName](#) ,
[IdentityUser<string>.NormalizedUserName](#) , [IdentityUser<string>.Email](#) ,
[IdentityUser<string>.NormalizedEmail](#) , [IdentityUser<string>.EmailConfirmed](#) ,
[IdentityUser<string>.PasswordHash](#) , [IdentityUser<string>.SecurityStamp](#) ,
[IdentityUser<string>.ConcurrencyStamp](#) , [IdentityUser<string>.PhoneNumber](#) ,
[IdentityUser<string>.PhoneNumberConfirmed](#) , [IdentityUser<string>.TwoFactorEnabled](#) ,
[IdentityUser<string>.LockoutEnd](#) , [IdentityUser<string>.LockoutEnabled](#) ,
[IdentityUser<string>.AccessFailedCount](#) , [object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) ,
[object.GetHashCode\(\)](#) , [object.GetType\(\)](#) , [object.MemberwiseClone\(\)](#) ,
[object.ReferenceEquals\(object, object\)](#)

Properties

Bio

User's bio or description

```
public string? Bio { get; set; }
```

Property Value

[string](#)

Comments

Collection of comments made by the user

```
public ICollection<Comment> Comments { get; set; }
```

Property Value

[ICollection](#)<[Comment](#)>

CreatedAt

Date and time when the user account was created

```
public DateTime CreatedAt { get; set; }
```

Property Value

[DateTime](#)

DateOfBirth

User's date of birth

```
public DateTime? DateOfBirth { get; set; }
```

Property Value

[DateTime](#)?

DisplayName

User's display name

```
public string? DisplayName { get; set; }
```

Property Value

[string](#)

FavoriteBook

Navigation property for the favorite book

```
public Book? FavoriteBook { get; set; }
```

Property Value

[Book](#)

FavoriteBookId

ID of the user's favorite book

```
public Guid? FavoriteBookId { get; set; }
```

Property Value

[Guid](#)?

Followers

Collection of users who are following this user

```
public ICollection<UserFollow> Followers { get; set; }
```

Property Value

[ICollection](#)<[UserFollow](#)>

FollowersCount

Number of followers the user has

```
public int FollowersCount { get; set; }
```

PropertyValue

[int](#)

Following

Collection of users that this user is following

```
public ICollection<UserFollow> Following { get; set; }
```

PropertyValue

[ICollection](#)<[UserFollow](#)>

FollowingCount

Number of users the user is following

```
public int FollowingCount { get; set; }
```

PropertyValue

[int](#)

IsActive

Indicates whether the user account is active

```
public bool IsActive { get; set; }
```

PropertyValue

[bool](#)

IsGenerated

Indicates if the user was generated by a script

```
public bool IsGenerated { get; set; }
```

Property Value

[bool](#)

LastLoginAt

Date and time of the user's last login

```
public DateTime? LastLoginAt { get; set; }
```

Property Value

[DateTime](#)?

Likes

Collection of likes given by the user

```
public ICollection<Like> Likes { get; set; }
```

Property Value

[ICollection](#)<[Like](#)>

Notifications

Collection of notifications received by the user

```
public ICollection<Notification> Notifications { get; set; }
```

Property Value

[ICollection](#)<[Notification](#)>

Posts

Collection of posts created by the user

```
public ICollection<Post> Posts { get; set; }
```

Property Value

[ICollection](#)<[Post](#)>

PostsCount

Number of posts the user has made

```
public int PostsCount { get; set; }
```

Property Value

[int](#)

ProfilePictureUrl

URL to the user's profile picture

```
public string? ProfilePictureUrl { get; set; }
```

Property Value

[string](#)

RefreshTokens

```
public ICollection<RefreshToken> RefreshTokens { get; set; }
```

Property Value

[ICollection](#)<[RefreshToken](#)>

Reviews

Collection of reviews written by the user

```
public ICollection<Review> Reviews { get; set; }
```

Property Value

[ICollection](#)<[Review](#)>

Shelves

Collection of shelves created by the user

```
public ICollection<Shelf> Shelves { get; set; }
```

Property Value

[ICollection](#)<[Shelf](#)>

Class Author

Namespace: [backend.Models](#)

Assembly: backend.dll

```
public class Author
```

Inheritance

[object](#) ← Author

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Properties

Bio

Author's bio

```
public string? Bio { get; set; }
```

Property Value

[string](#)

BookAuthors

Collection of book-author relationships representing books written by this author

```
public ICollection<BookAuthor> BookAuthors { get; set; }
```

Property Value

[ICollection](#)<[BookAuthor](#)>

DateOfBirth

Author's date of birth

```
public DateTime? DateOfBirth { get; set; }
```

Property Value

[DateTime](#)?

FirstName

Author's first name

```
[Required]  
[MaxLength(100)]  
public string FirstName { get; set; }
```

Property Value

[string](#)

Id

Author's Id

```
public Guid Id { get; set; }
```

Property Value

[Guid](#)

LastName

Authors last name

```
[Required]  
[MaxLength(100)]  
public string LastName { get; set; }
```

Property Value

[string](#) ↗

Class Book

Namespace: [backend.Models](#)

Assembly: backend.dll

```
public class Book
```

Inheritance

[object](#) ← Book

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Properties

BookAuthors

Collection of book-author relationships representing authors of this book

```
public ICollection<BookAuthor> BookAuthors { get; set; }
```

Property Value

[ICollection](#)<[BookAuthor](#)>

BookGenres

Collection of book-genre relationships representing genres associated with this book

```
public ICollection<BookGenre> BookGenres { get; set; }
```

Property Value

[ICollection](#)<[BookGenre](#)>

CoverUrl

URL to the book's cover image

```
public string? CoverUrl { get; set; }
```

Property Value

[string](#)

Description

Description or summary of the book

```
public string? Description { get; set; }
```

Property Value

[string](#)

ISBN

International Standard Book Number

[Required]
[MaxLength(13)]
`public string ISBN { get; set; }`

Property Value

[string](#)

Id

Unique identifier for the book

```
public Guid Id { get; set; }
```

Property Value

[Guid](#)

PageCount

Total number of pages in the book

```
public int PageCount { get; set; }
```

Property Value

[int](#)

PublishedDate

Date when the book was published

```
public DateTime? PublishedDate { get; set; }
```

Property Value

[DateTime](#)?

Reviews

Collection of reviews written for this book

```
public ICollection<Review> Reviews { get; set; }
```

Property Value

[ICollection](#)<[Review](#)>

ShelfBooks

Collection of shelf-book relationships representing shelves containing this book

```
public ICollection<ShelfBook> ShelfBooks { get; set; }
```

Property Value

[ICollection](#)<[ShelfBook](#)>

Title

Title of the book

[Required]
[MaxLength(200)]
public string Title { get; set; }

Property Value

[string](#)

Class BookAuthor

Namespace: [backend.Models](#)

Assembly: backend.dll

```
public class BookAuthor
```

Inheritance

[object](#) ← BookAuthor

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Properties

Author

Navigation property to the Author entity

```
public Author Author { get; set; }
```

Property Value

[Author](#)

AuthorId

Foreign key for the Author entity

```
public Guid AuthorId { get; set; }
```

Property Value

[Guid](#)

Book

Navigation property to the Book entity

```
public Book Book { get; set; }
```

Property Value

[Book](#)

BookId

Foreign key for the Book entity

```
public Guid BookId { get; set; }
```

Property Value

[Guid](#) ↗

Class BookGenre

Namespace: [backend.Models](#)

Assembly: backend.dll

```
public class BookGenre
```

Inheritance

[object](#) ← BookGenre

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Properties

Book

Navigation property to the Book entity

```
public Book Book { get; set; }
```

Property Value

[Book](#)

BookId

Foreign key for the Book entity

```
public Guid BookId { get; set; }
```

Property Value

[Guid](#)

Genre

Navigation property to the Genre entity

```
public Genre Genre { get; set; }
```

Property Value

[Genre](#)

GenreId

Foreign key for the Genre entity

```
public int GenreId { get; set; }
```

Property Value

[int](#) ↗

Class Comment

Namespace: [backend.Models](#)

Assembly: backend.dll

```
public class Comment
```

Inheritance

[object](#) ← Comment

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Properties

Content

Content of the comment

```
[Required]  
public string Content { get; set; }
```

Property Value

[string](#)

CreatedAt

Date and time when the comment was created

```
public DateTime CreatedAt { get; set; }
```

Property Value

[DateTime](#)

Id

Unique identifier for the comment

```
public Guid Id { get; set; }
```

Property Value

[Guid ↗](#)

Post

Navigation property to the post this comment belongs to

```
public Post Post { get; set; }
```

Property Value

[Post](#)

PostId

Foreign key for the post this comment belongs to

```
public Guid PostId { get; set; }
```

Property Value

[Guid ↗](#)

User

Navigation property to the user who created the comment

```
public ApplicationUser User { get; set; }
```

Property Value

[ApplicationUser](#)

UserId

Foreign key for the user who created the comment

```
[ForeignKey(" ApplicationUser")]
public string UserId { get; set; }
```

Property Value

[string](#)

Class Genre

Namespace: [backend.Models](#)

Assembly: backend.dll

```
public class Genre
```

Inheritance

[object](#) ← Genre

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Properties

BookGenres

Collection of book-genre relationships representing books associated with this genre

```
public ICollection<BookGenre> BookGenres { get; set; }
```

Property Value

[ICollection](#)<[BookGenre](#)>

Id

Unique identifier for the genre

```
public int Id { get; set; }
```

Property Value

[int](#)

Name

Name of the genre

[Required]
[MaxLength(50)]
`public string Name { get; set; }`

Property Value

[string](#)

Class Like

Namespace: [backend.Models](#)

Assembly: backend.dll

```
public class Like
```

Inheritance

[object](#) ← Like

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Properties

Post

Navigation property to the post that was liked

```
public Post Post { get; set; }
```

PropertyValue

[Post](#)

PostId

Foreign key for the post that was liked

```
public Guid PostId { get; set; }
```

PropertyValue

[Guid](#)

User

Navigation property to the user who liked the post

```
public ApplicationUser User { get; set; }
```

PropertyValue

[ApplicationUser](#)

UserId

Foreign key for the user who liked the post

```
public string UserId { get; set; }
```

PropertyValue

[string](#) ↗

Class Notification

Namespace: [backend.Models](#)

Assembly: backend.dll

```
public class Notification
```

Inheritance

[object](#) ← Notification

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Properties

Content

Content of the notification

```
public string Content { get; set; }
```

Property Value

[string](#)

CreatedAt

Date and time when the notification was created

```
public DateTime CreatedAt { get; set; }
```

Property Value

[DateTime](#)

Id

Unique identifier for the notification

```
public Guid Id { get; set; }
```

PropertyValue

[Guid ↗](#)

IsRead

Indicates whether the notification has been read

```
public bool IsRead { get; set; }
```

PropertyValue

[bool ↗](#)

Type

Type of the notification (e.g., "NewFollower", "Like")

```
public string Type { get; set; }
```

PropertyValue

[string ↗](#)

User

Navigation property to the user who receives the notification

```
public ApplicationUser User { get; set; }
```

Property Value

[ApplicationUser](#)

UserId

Foreign key for the user who receives the notification

```
[ForeignKey(" ApplicationUser")]
public string UserId { get; set; }
```

Property Value

[string](#) ↗

Class Post

Namespace: [backend.Models](#)

Assembly: backend.dll

```
public class Post
```

Inheritance

[object](#) ← Post

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Properties

Comments

Collection of comments on this post

```
public ICollection<Comment> Comments { get; set; }
```

Property Value

[ICollection](#)<[Comment](#)>

Content

Content of the post

[Required]

```
public string Content { get; set; }
```

Property Value

[string](#)

CreatedAt

Date and time when the post was created

```
public DateTime CreatedAt { get; set; }
```

Property Value

[DateTime](#)

Id

Unique identifier for the post

```
public Guid Id { get; set; }
```

Property Value

[Guid](#)

Likes

Collection of likes on this post

```
public ICollection<Like> Likes { get; set; }
```

Property Value

[ICollection](#)<[Like](#)>

RelatedBook

Navigation property to the related book (optional)

```
public Book? RelatedBook { get; set; }
```

Property Value

[Book](#)

RelatedBookId

Foreign key for the related book (optional)

```
public Guid? RelatedBookId { get; set; }
```

Property Value

[Guid](#)?

User

Navigation property to the user who created the post

```
public ApplicationUser User { get; set; }
```

Property Value

[ApplicationUser](#)

UserId

Foreign key for the user who created the post

```
[ForeignKey("ApplicationUser")]
public string UserId { get; set; }
```

Property Value

[string](#) ↗

Class RefreshToken

Namespace: [backend.Models](#)

Assembly: backend.dll

```
public class RefreshToken
```

Inheritance

[object](#) ← RefreshToken

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Properties

CreatedAt

Date and time when the token was created

```
public DateTime CreatedAt { get; set; }
```

Property Value

[DateTime](#)

ExpiryDate

Date and time when the token expires

```
public DateTime ExpiryDate { get; set; }
```

Property Value

[DateTime](#)

Id

Unique identifier for the refresh token

```
public Guid Id { get; set; }
```

Property Value

[Guid](#)

IsRevoked

Indicates whether the token has been revoked

```
public bool IsRevoked { get; set; }
```

Property Value

[bool](#)

Token

The refresh token value

```
public string Token { get; set; }
```

Property Value

[string](#)

User

Navigation property to the user who owns the token

```
public ApplicationUser User { get; set; }
```

Property Value

[ApplicationUser](#)

UserId

Foreign key for the user who owns the token

```
[ForeignKey(" ApplicationUser")]
public string UserId { get; set; }
```

Property Value

[string](#) ↗

Class Review

Namespace: [backend.Models](#)

Assembly: backend.dll

```
public class Review
```

Inheritance

[object](#) ← Review

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Properties

Book

Navigation property to the book being reviewed

```
public Book Book { get; set; }
```

Property Value

[Book](#)

BookId

Foreign key for the book being reviewed

```
public Guid BookId { get; set; }
```

Property Value

[Guid](#)

Comment

Optional comment for the review

```
public string? Comment { get; set; }
```

Property Value

[string](#)

CreatedAt

Date and time when the review was created

```
public DateTime CreatedAt { get; set; }
```

Property Value

[DateTime](#)

Id

Unique identifier for the review

```
public Guid Id { get; set; }
```

Property Value

[Guid](#)

Rating

Rating given in the review (1-5)

```
[Range(1, 5)]  
public int Rating { get; set; }
```

Property Value

[int](#) ↗

User

Navigation property to the user who wrote the review

```
public ApplicationUser User { get; set; }
```

Property Value

[ApplicationUser](#)

UserId

Foreign key for the user who wrote the review

```
[ForeignKey(" ApplicationUser")]
public string UserId { get; set; }
```

Property Value

[string](#) ↗

Class Shelf

Namespace: [backend.Models](#)

Assembly: backend.dll

```
public class Shelf
```

Inheritance

[object](#) ← Shelf

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Properties

Id

Unique identifier for the shelf

```
public Guid Id { get; set; }
```

Property Value

[Guid](#)

Name

Name of the shelf

```
[Required]  
[MaxLength(50)]  
public string Name { get; set; }
```

Property Value

[string](#)

ShelfBooks

Collection of shelf-book relationships representing books on this shelf

```
public ICollection<ShelfBook> ShelfBooks { get; set; }
```

Property Value

[ICollection](#)<[ShelfBook](#)>

User

Navigation property to the user who owns the shelf

```
public ApplicationUser User { get; set; }
```

Property Value

[ApplicationUser](#)

UserId

Foreign key for the user who owns the shelf

```
[ForeignKey("ApplicationUser")]
public string UserId { get; set; }
```

Property Value

[string](#)

Class ShelfBook

Namespace: [backend.Models](#)

Assembly: backend.dll

```
public class ShelfBook
```

Inheritance

[object](#) ← ShelfBook

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Properties

AddedAt

Date and time when the book was added to the shelf

```
public DateTime AddedAt { get; set; }
```

Property Value

[DateTime](#)

Book

Navigation property to the book

```
public Book Book { get; set; }
```

Property Value

[Book](#)

BookId

Foreign key for the book

```
public Guid BookId { get; set; }
```

PropertyValue

[Guid ↗](#)

CurrentPage

Current reading progress page number

```
public int CurrentPage { get; set; }
```

PropertyValue

[int ↗](#)

Shelf

Navigation property to the shelf

```
public Shelf Shelf { get; set; }
```

PropertyValue

[Shelf](#)

ShelfId

Foreign key for the shelf

```
public Guid ShelfId { get; set; }
```

Property Value

[Guid](#) ↗

Class UserFollow

Namespace: [backend.Models](#)

Assembly: backend.dll

```
public class UserFollow
```

Inheritance

[object](#) ← UserFollow

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Properties

FollowedAt

Date and time when the follow relationship was established

```
public DateTime FollowedAt { get; set; }
```

Property Value

[DateTime](#)

Observer

Navigation property to the user who is following (observer)

```
public ApplicationUser Observer { get; set; }
```

Property Value

[ApplicationUser](#)

ObserverId

Foreign key for the user who is following (observer)

```
public string ObserverId { get; set; }
```

Property Value

[string](#) ↗

Target

Navigation property to the user being followed (target)

```
public ApplicationUser Target { get; set; }
```

Property Value

[ApplicationUser](#)

TargetId

Foreign key for the user being followed (target)

```
public string TargetId { get; set; }
```

Property Value

[string](#) ↗

Class UserRecommendation

Namespace: [backend.Models](#)

Assembly: backend.dll

Stores book recommendations generated for a user.

```
public class UserRecommendation
```

Inheritance

[object](#) ← UserRecommendation

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Properties

CategoryTitle

The category title (e.g., "Ponieważ czytałeś: Wiedźmin")

```
[Required]  
[MaxLength(200)]  
public string CategoryTitle { get; set; }
```

PropertyValue

[string](#)

CategoryType

The category type: content_similarity, author_based, serendipity

```
[Required]  
[MaxLength(50)]  
public string CategoryType { get; set; }
```

PropertyValue

[string ↗](#)

GeneratedAt

When the recommendations were generated.

```
public DateTime GeneratedAt { get; set; }
```

PropertyValue

[DateTime ↗](#)

Id

```
public Guid Id { get; set; }
```

PropertyValue

[Guid ↗](#)

RecommendationsJson

JSON string containing the list of recommended books.

[Required]

```
public string RecommendationsJson { get; set; }
```

PropertyValue

[string ↗](#)

User

```
public ApplicationUser? User { get; set; }
```

Property Value

[ApplicationUser](#)

UserId

Foreign key to the user who received the recommendations. Nullable for anonymous recommendations.

```
public string? UserId { get; set; }
```

Property Value

[string](#) ↗

Namespace backend.Services

Classes

[BooksRecService](#)

HTTP client service for communicating with the books-rec microservice.

[GoogleBook](#)

Lightweight representation of a book as returned by the Google Books API.

[GoogleBooksService](#)

Implementation of [IGoogleBooksService](#) that calls the Google Books REST API.

[JwtService](#)

Service that generates JSON Web Tokens (JWT) for authenticated users.

Interfaces

[IGoogleBooksService](#)

Abstraction for querying Google Books for book metadata.

Class BooksRecService

Namespace: [backend.Services](#)

Assembly: backend.dll

HTTP client service for communicating with the books-rec microservice.

```
public class BooksRecService
```

Inheritance

[object](#) ← BooksRecService

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Constructors

BooksRecService(HttpClient, ILogger<BooksRecService>)

```
public BooksRecService(HttpClient httpClient, ILogger<BooksRecService> logger)
```

Parameters

httpClient [HttpClient](#)

logger [ILogger](#)<[BooksRecService](#)>

Methods

CheckHealthAsync()

Check the health of the books-rec service.

```
public Task<BooksRecHealthDto?> CheckHealthAsync()
```

Returns

[Task](#)<[BooksRecHealthDto](#)>

GetRecommendationsAsync(RecommendationRequestDto)

Get book recommendations from the books-rec service.

```
public Task<RecommendationResponseDto?>
GetRecommendationsAsync(RecommendationRequestDto request)
```

Parameters

request [RecommendationRequestDto](#)

Returns

[Task](#)<[RecommendationResponseDto](#)>

Class GoogleBook

Namespace: [backend.Services](#)

Assembly: backend.dll

Lightweight representation of a book as returned by the Google Books API.

```
public record GoogleBook : IEquatable<GoogleBook>
```

Inheritance

[object](#) ← GoogleBook

Implements

[IEquatable](#)<[GoogleBook](#)>

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Constructors

GoogleBook(string, string?, string?, List<string>?, string?,
string?, string?, int?, List<string>?, string?)

Lightweight representation of a book as returned by the Google Books API.

```
public GoogleBook(string Id, string? Isbn, string? Title, List<string>? Authors,  
string? Publisher, string? PublishedDate, string? Description, int? PageCount,  
List<string>? Categories, string? Thumbnail)
```

Parameters

Id [string](#)

Volume identifier assigned by Google Books.

Isbn [string](#)

Primary ISBN (preferably ISBN-13) when available.

Title [string](#)

Book title.

Authors [List<string>](#)

List of author names.

Publisher [string](#)

Publisher name.

PublishedDate [string](#)

Raw published date string from Google Books.

Description [string](#)

Book description or summary.

PageCount [int?](#)

Number of pages when available.

Categories [List<string>](#)

List of category names (genres).

Thumbnail [string](#)

URL for a small thumbnail image.

Properties

Authors

List of author names.

```
public List<string>? Authors { get; init; }
```

Property Value

[List<string>](#)

Categories

List of category names (genres).

```
public List<string>? Categories { get; init; }
```

Property Value

[List](#)<[string](#)>

Description

Book description or summary.

```
public string? Description { get; init; }
```

Property Value

[string](#)

Id

Volume identifier assigned by Google Books.

```
public string Id { get; init; }
```

Property Value

[string](#)

Isbn

Primary ISBN (preferably ISBN-13) when available.

```
public string? Isbn { get; init; }
```

Property Value

[string](#) ↗

PageCount

Number of pages when available.

```
public int? PageCount { get; init; }
```

Property Value

[int](#) ↗?

PublishedDate

Raw published date string from Google Books.

```
public string? PublishedDate { get; init; }
```

Property Value

[string](#) ↗

Publisher

Publisher name.

```
public string? Publisher { get; init; }
```

Property Value

[string](#) ↗

Thumbnail

URL for a small thumbnail image.

```
public string? Thumbnail { get; init; }
```

Property Value

[string ↗](#)

Title

Book title.

```
public string? Title { get; init; }
```

Property Value

[string ↗](#)

Class GoogleBooksService

Namespace: [backend.Services](#)

Assembly: backend.dll

Implementation of [IGoogleBooksService](#) that calls the Google Books REST API.

```
public class GoogleBooksService : IGoogleBooksService
```

Inheritance

[object](#) ← GoogleBooksService

Implements

[IGoogleBooksService](#)

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Constructors

GoogleBooksService(HttpClient, IConfiguration)

Initializes a new [GoogleBooksService](#).

```
public GoogleBooksService(HttpClient http, IConfiguration config)
```

Parameters

http [HttpClient](#)

An [HttpClient](#) configured for the Google Books API base address.

config [IConfiguration](#)

Configuration providing the optional API key.

Methods

GetByGoogleIdAsync(string, CancellationToken)

Retrieves a Google Books volume by its Google volume identifier.

```
public Task<GoogleBook?> GetByGoogleIdAsync(string googleId, CancellationToken ct = default)
```

Parameters

`googleId` [string](#)

Google Books volume ID.

`ct` [CancellationToken](#)

Optional cancellation token.

Returns

[Task](#)<[GoogleBook](#)>

The [GoogleBook](#) when found; otherwise `null`.

GetByIsbnAsync(string, CancellationToken)

Looks up a single Google Books volume by its ISBN.

```
public Task<GoogleBook?> GetByIsbnAsync(string isbn, CancellationToken ct = default)
```

Parameters

`isbn` [string](#)

ISBN to lookup (e.g. ISBN-10 or ISBN-13).

`ct` [CancellationToken](#)

Optional cancellation token.

Returns

[Task](#)<[GoogleBook](#)>

The matched [GoogleBook](#) or `null` when not found or on non-successful HTTP responses.

SearchBooksAsync(string, int, CancellationToken)

Searches Google Books for a text query and returns up to `maxResults` matches.

```
public Task<List<GoogleBook>> SearchBooksAsync(string query, int maxResults = 10,  
CancellationToken ct = default)
```

Parameters

`query` [string](#)

Search term(s).

`maxResults` [int](#)

Maximum number of results to return (default 10).

`ct` [CancellationToken](#)

Optional cancellation token.

Returns

[Task](#)<[List](#)<[GoogleBook](#)>>

List of [GoogleBook](#) results (empty list when none or on non-successful HTTP responses).

Interface IGoogleBooksService

Namespace: [backend.Services](#)

Assembly: backend.dll

Abstraction for querying Google Books for book metadata.

```
public interface IGoogleBooksService
```

Methods

GetByGoogleIdAsync(string, CancellationToken)

Retrieves a Google Book by its Google volume ID.

```
Task<GoogleBook?> GetByGoogleIdAsync(string googleId, CancellationToken ct = default)
```

Parameters

googleId [string](#)

Google Books volume identifier.

ct [CancellationToken](#)

Optional cancellation token.

Returns

[Task](#)<[GoogleBook](#)>

A [GoogleBook](#) when found; otherwise **null**.

GetByIsbnAsync(string, CancellationToken)

Looks up a single Google Book entry by ISBN.

```
Task<GoogleBook?> GetByIsbnAsync(string isbn, CancellationToken ct = default)
```

Parameters

isbn [string](#)

ISBN to search for.

ct [CancellationToken](#)

Optional cancellation token.

Returns

[Task](#)<[GoogleBook](#)>

A [GoogleBook](#) when found; otherwise [null](#).

SearchBooksAsync(string, int, CancellationToken)

Searches Google Books for a query string and returns a list of matches.

```
Task<List<GoogleBook>> SearchBooksAsync(string query, int maxResults = 10,  
CancellationToken ct = default)
```

Parameters

query [string](#)

Search query term(s).

maxResults [int](#)

Maximum number of results to return.

ct [CancellationToken](#)

Optional cancellation token.

Returns

[Task](#) <[List](#)<[GoogleBook](#)>>

List of matching [GoogleBook](#) items (may be empty).

Class JwtService

Namespace: [backend.Services](#)

Assembly: backend.dll

Service that generates JSON Web Tokens (JWT) for authenticated users.

```
public class JwtService
```

Inheritance

[object](#) ← JwtService

Inherited Members

[object.Equals\(object\)](#) , [object.Equals\(object, object\)](#) , [object.GetHashCode\(\)](#) , [object.GetType\(\)](#) ,
[object.MemberwiseClone\(\)](#) , [object.ReferenceEquals\(object, object\)](#) , [object.ToString\(\)](#)

Constructors

JwtService(IConfiguration)

Initializes a new instance of the [JwtService](#) class.

```
public JwtService(IConfiguration configuration)
```

Parameters

configuration [IConfiguration](#)

The application configuration providing JWT settings.

Methods

GenerateToken(ApplicationUser)

Generates a signed JWT for the specified [ApplicationUser](#).

```
public string GenerateToken(ApplicationUser user)
```

Parameters

user [ApplicationUser](#)

User for whom to generate the token.

Returns

[string](#)

A signed JWT as a compact serialized string.