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Karta.ba – Recommender Dokumentacija

1. Opis sistema preporuke

Core Logic

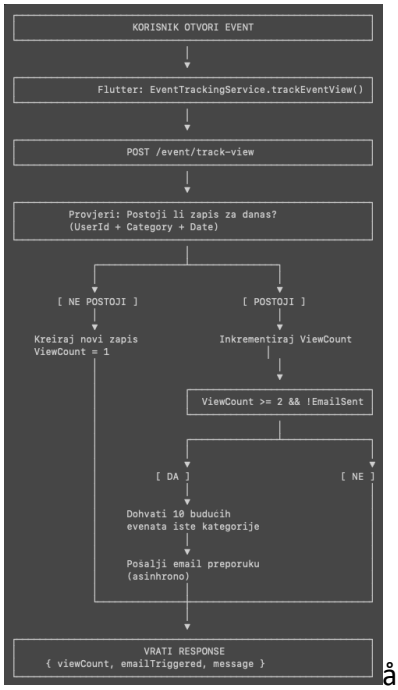
Sistem analizira ponašanje korisnika prilikom pregleda događaja i koristi content-based pristup za preporuke. Umjesto složenih machine learning algoritama, sistem koristi jednostavnu rule-based logiku baziranu na kategorijama događaja.

Ključni proračuni

- Za svakog korisnika prati se broj pregleda događaja po kategoriji u jednom danu

- Kada korisnik pregleda 2 ili više događaja iste kategorije, sistem automatski šalje email sa preporukama

- Email sadrži top 10 budućih događaja iz iste kategorije



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Primjena

Korisnik automatski prima personalizovane email preporuke. Organizator dobija bolju vidljivost svojih događaja.

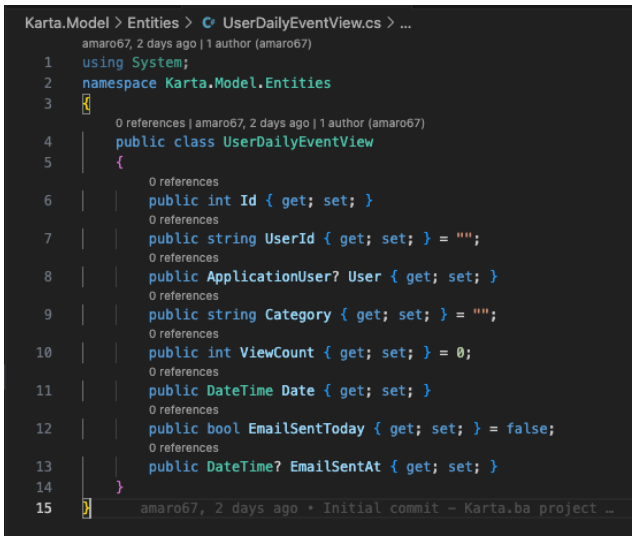
2. Opis implementacije

Tehnologije

Backend: ASP.NET Core, EF Core, SQL Server

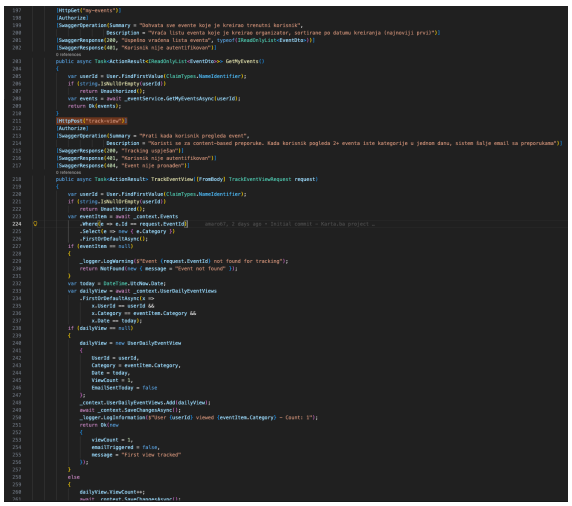
UI: Flutter

Email: SMTP / RabbitMQ



3. Ključni API endpointi i algoritam

Algoritam se aktivira kada korisnik pregleda 2+ događaja iste kategorije u jednom danu.



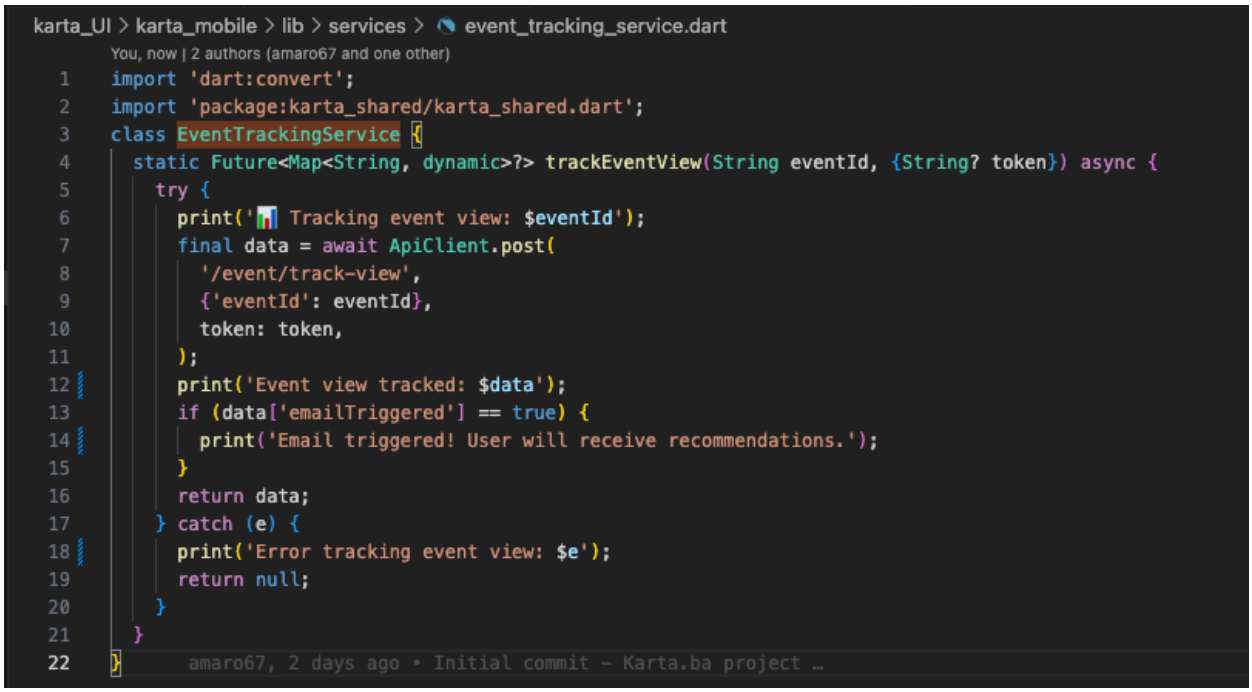
4. Sigurnost

JWT autentikacija i [Authorize] atribut.

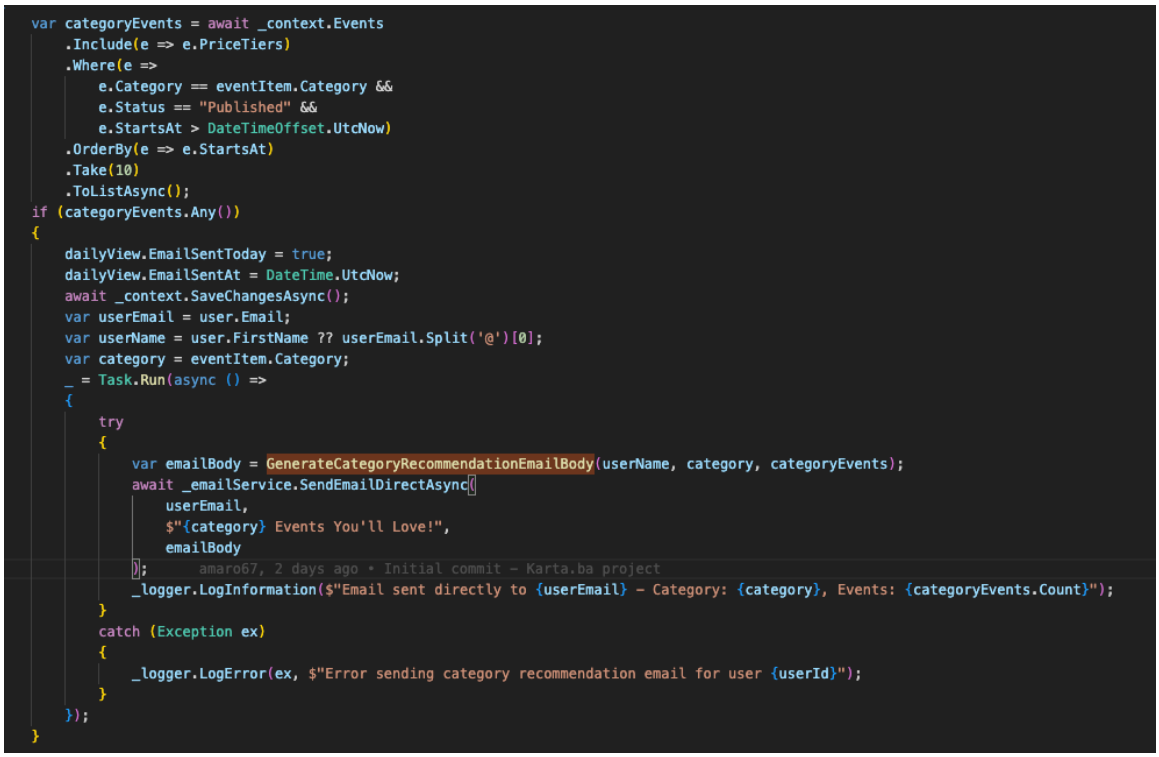
```
[HttpGet("my-events")]
[Authorize]
[SwaggerOperation(Summary = "Dohvata sve evente koje je kreirao trenutni korisnik",
                  Description = "Vraća listu eventa koje je kreirao organizator, sortirane po datumu kreiranja (najnoviji prvi)")]
[SwaggerResponse(200, "Uspešno vraćena lista eventa", typeof(IReadOnlyList<EventDto>))]
[SwaggerResponse(401, "Korisnik nije autentifikovan")]
0 references
public async Task<ActionResult<IReadOnlyList<EventDto>>> GetMyEvents()
```

5. Komunikacija

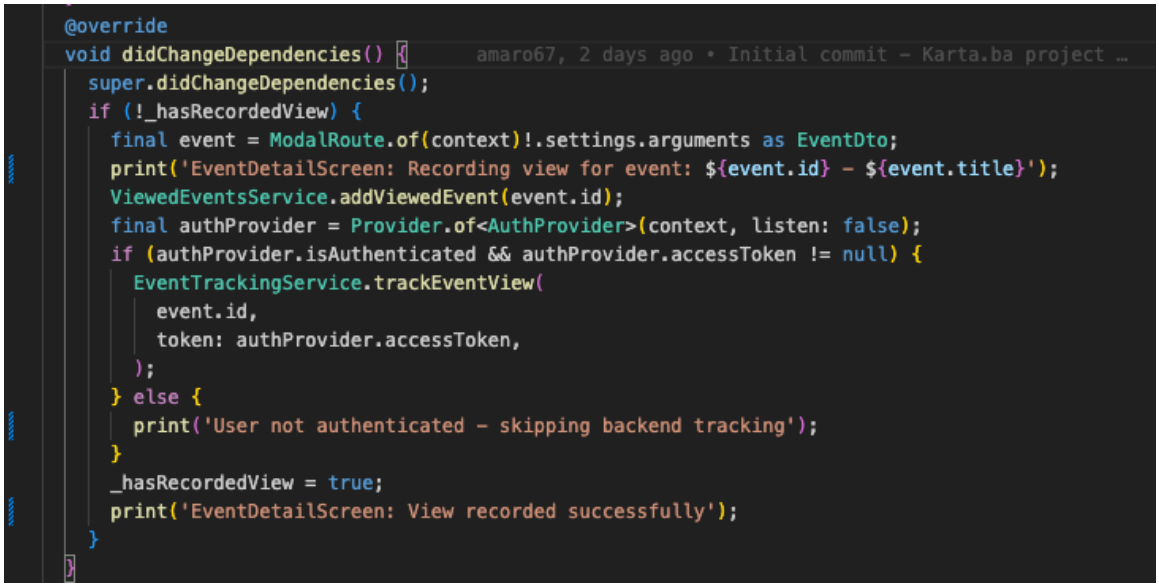
Flutter aplikacija komunicira sa backendom putem HTTP zahtjeva uz JWT token.



6. Email preporuke

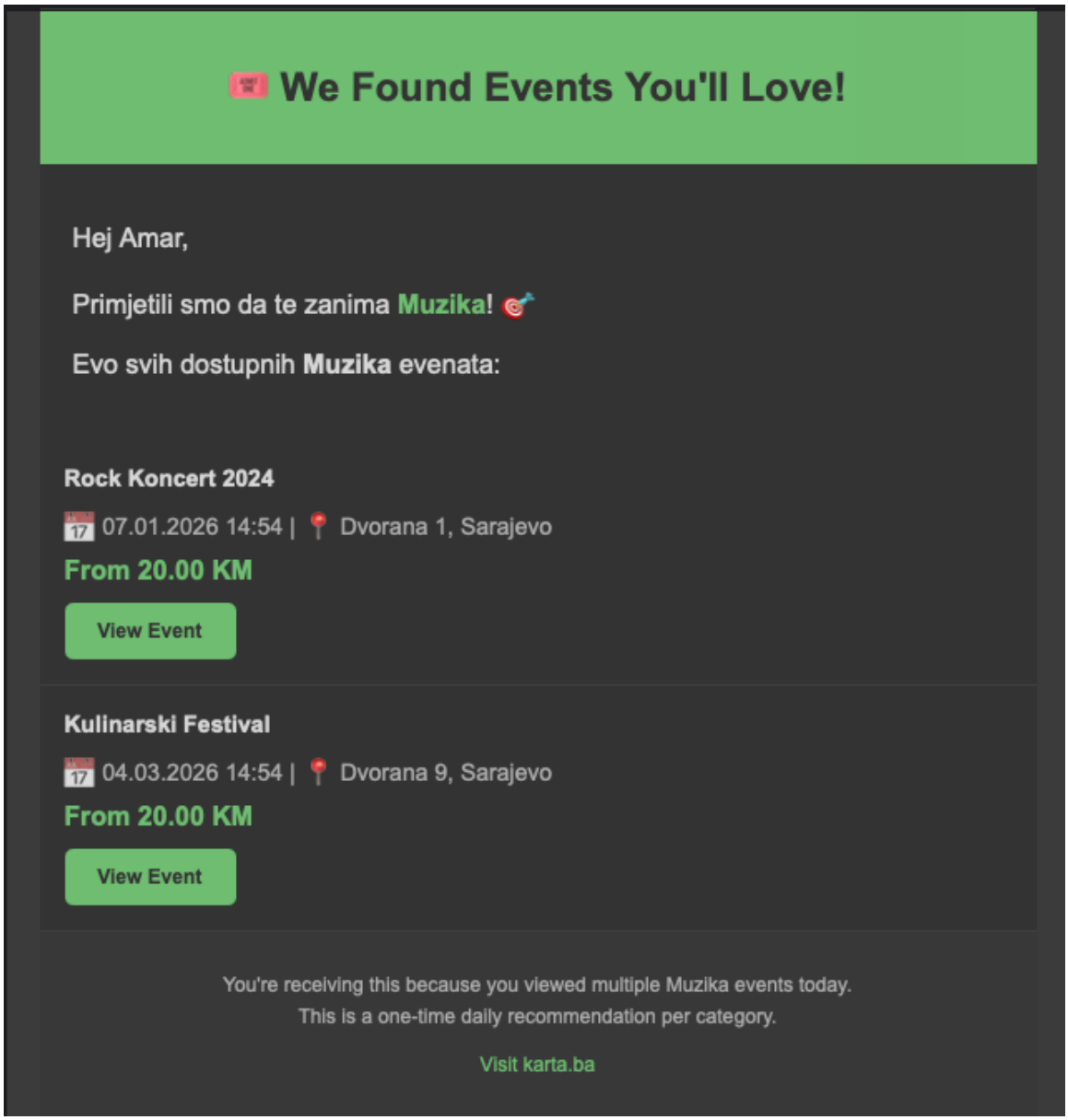


8. UI orkestracija (mobile)



```dart
@override
void didChangeDependencies() {      amaro67, 2 days ago • Initial commit – Karta.ba project …
  super.didChangeDependencies();
  if (!_hasRecordedView) {
    final event = ModalRoute.of(context)!.settings.arguments as EventDto;
    print('EventDetailScreen: Recording view for event: ${event.id} - ${event.title}');
    ViewedEventsService.addViewedEvent(event.id);
    final authProvider = Provider.of<AuthProvider>(context, listen: false);
    if (authProvider.isAuthenticated && authProvider.accessToken != null) {
      EventTrackingService.trackEventView(
        event.id,
        token: authProvider.accessToken,
      );
    } else {
      print('User not authenticated - skipping backend tracking');
    }
    _hasRecordedView = true;
    print('EventDetailScreen: View recorded successfully');
  }
}
```

9. Vizuelne preporuke



10. Struktura fajlova

Komponenta	Putanja
Database Model	Karta.Model/Entities/UserDailyEventView.cs
DB Context Config	Karta.Model/ApplicationDbContext.cs
API Endpoint	Karta.WebAPI/Controllers/EventController.cs
Email Service	Karta.Service/Services/EmailService.cs
Email DTO	Karta.Service/DTO/EmailMessage.cs

Komponenta	Putanja
Daily Reset Service	Karta.WebAPI/Services/DailyResetService.cs
Flutter Tracking	karta_mobile/lib/services/event_tracking_service.dart
Flutter Screen	karta_mobile/lib/screens/user/event_detail_screen.dart
Migration	Karta.WebAPI/Migrations/20251208175317_AddUserDailyEventView.cs

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11. Ključne metrike

Metrika	Vrijednost
Vremenski prozor	24 sata (UTC dan)
Trigger prag	2+ pregleda iste kategorije
Max preporuka po emailu	10 događaja
Email frekvencija	Max 1 po kategoriji po danu
Čišćenje starih zapisa	Automatski u ponoć UTC

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12. Primjer scenarija

Scenario 1: Korisnik zainteresovan za muziku

1. **10:00** - Korisnik otvori koncert "Rock Festival" (kategorija: Music)
    - ViewCount = 1, emailTriggered = false
2. **14:00** - Korisnik otvori "Jazz Night" (kategorija: Music)
    - ViewCount = 2, emailTriggered = true
    - Sistem šalje email sa 10 budućih Music događaja
3. **18:00** - Korisnik otvori "Classical Concert" (kategorija: Music)
    - ViewCount = 3, emailTriggered = false
    - Poruka: "Email already sent today"

Scenario 2: Više kategorija

1. Korisnik pregleda 2 Music događaja → dobije Music preporuke
2. Isti dan pregleda 2 Sports događaja → dobije Sports preporuke
3. Svaka kategorija ima nezavisan brojač i email limit

Zaključak

Sistem predstavlja jednostavan i efikasan content-based recommender koji automatski šalje personalizovane email preporuke.