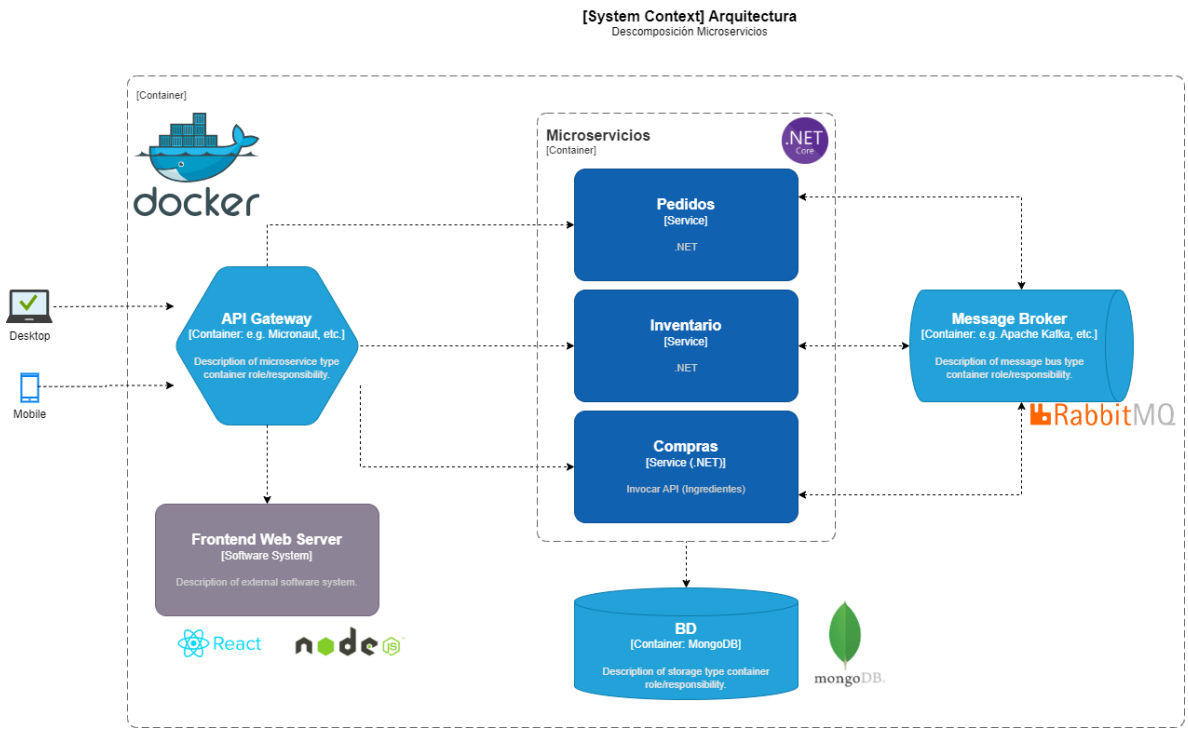
ARQUITECTURA DE SOFTWARE (2S-2023)

PROYECTO CORTE 2 (MICROSERVICIOS)

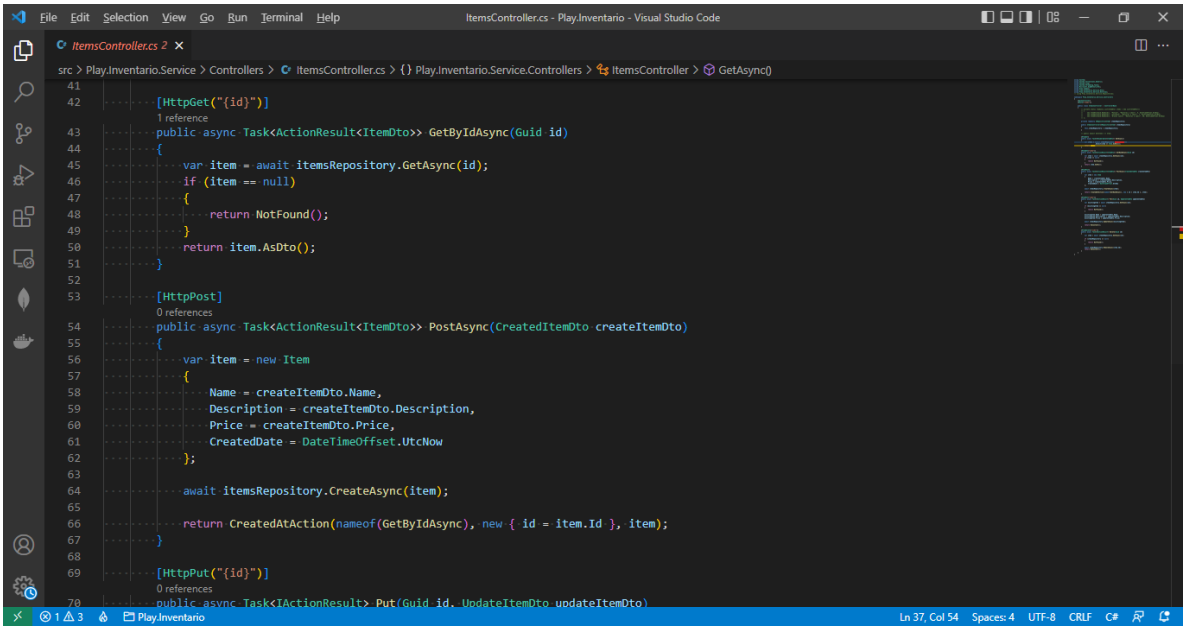
EDISSON CABRERA ERASO

Tabla de contenido

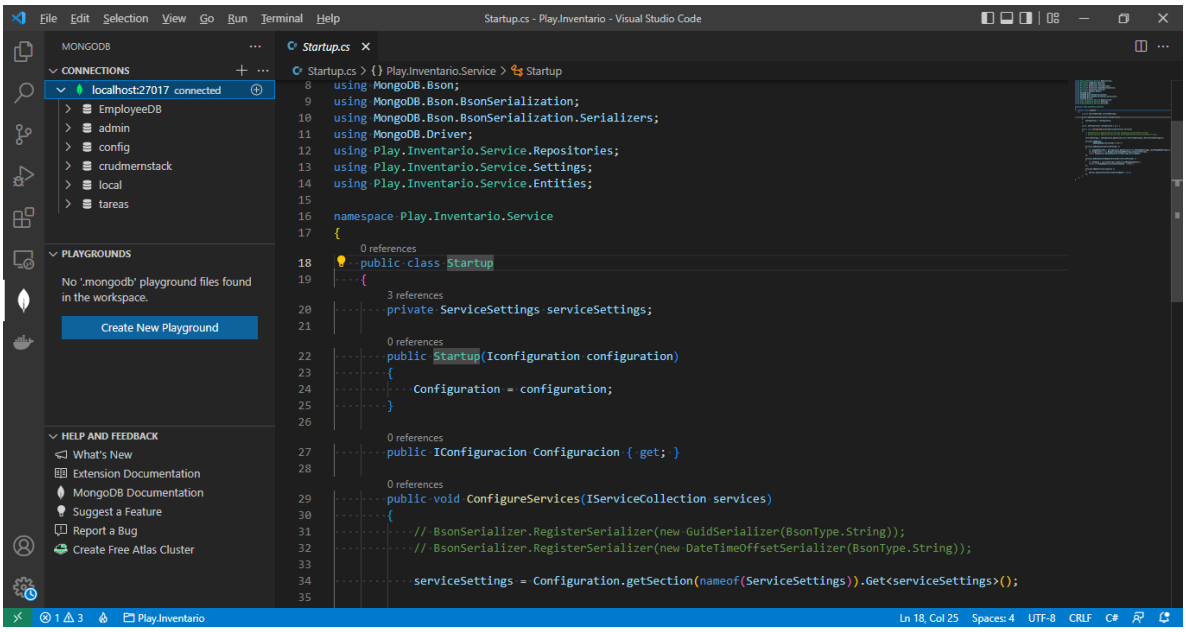
Arquitectura Propuesta



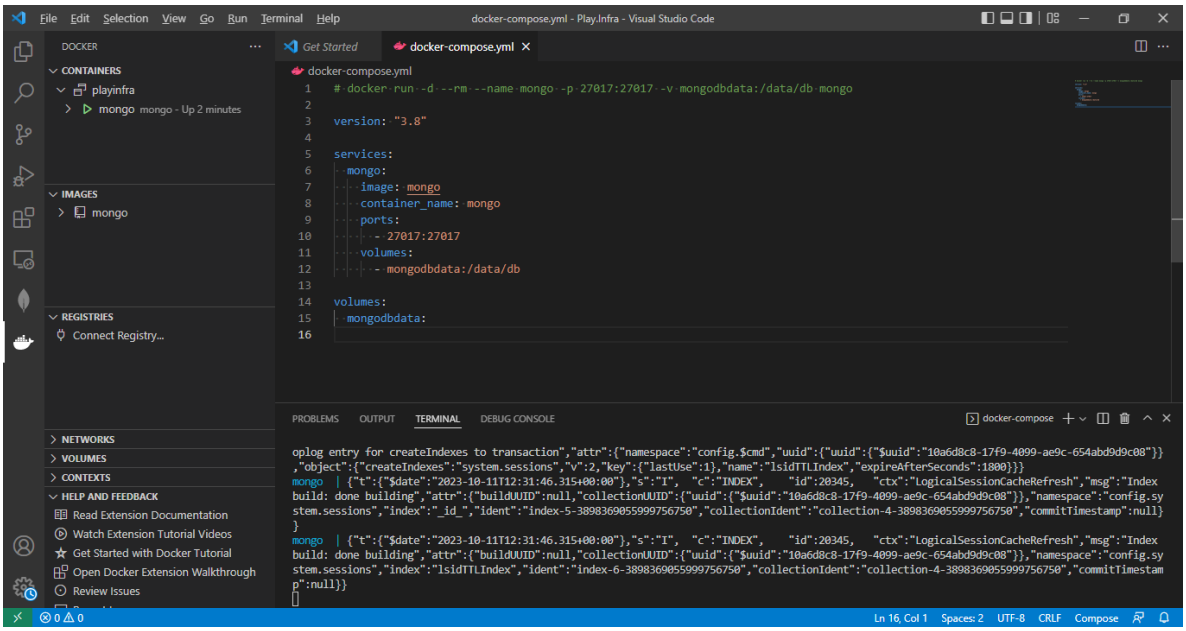
API's



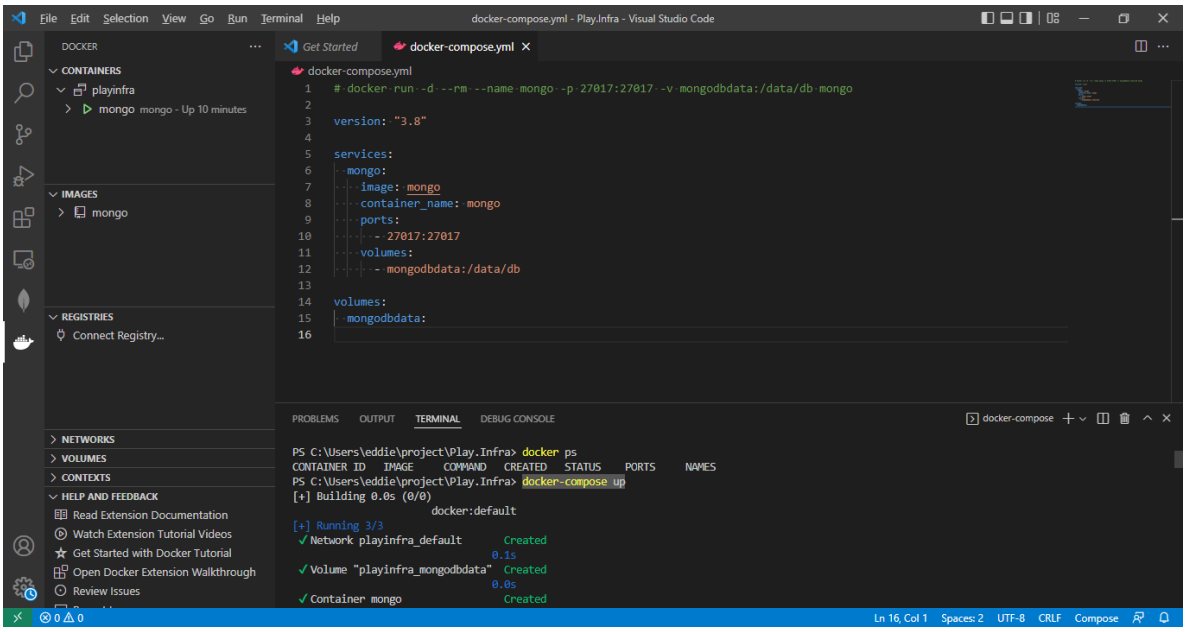
MongoDB

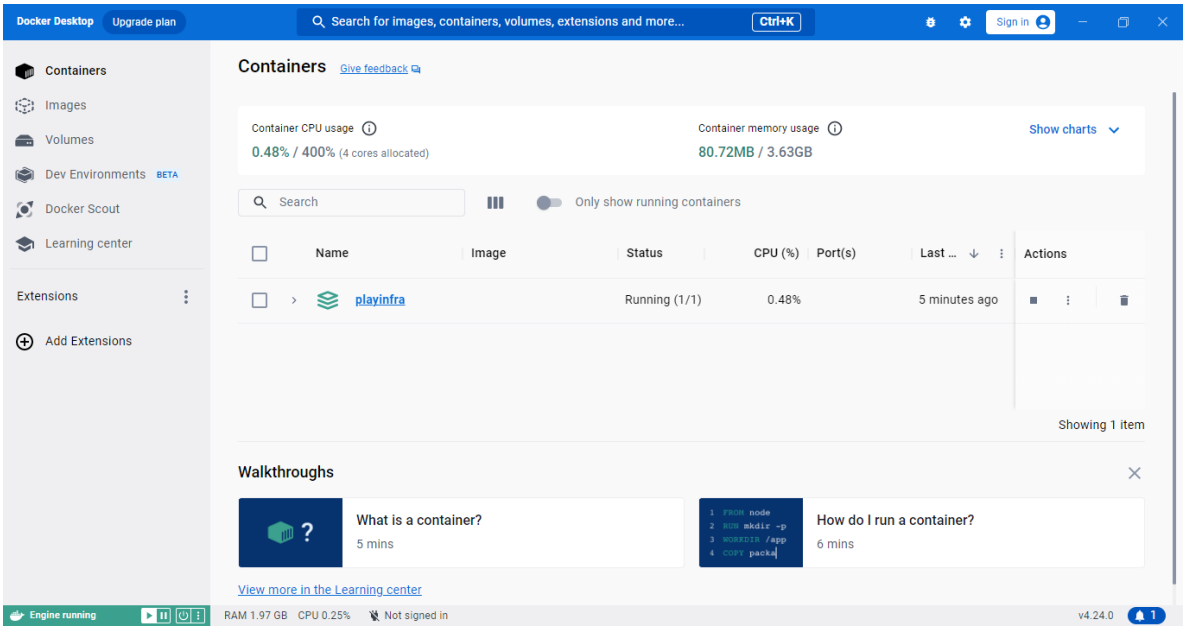


Docker Compose (yml)

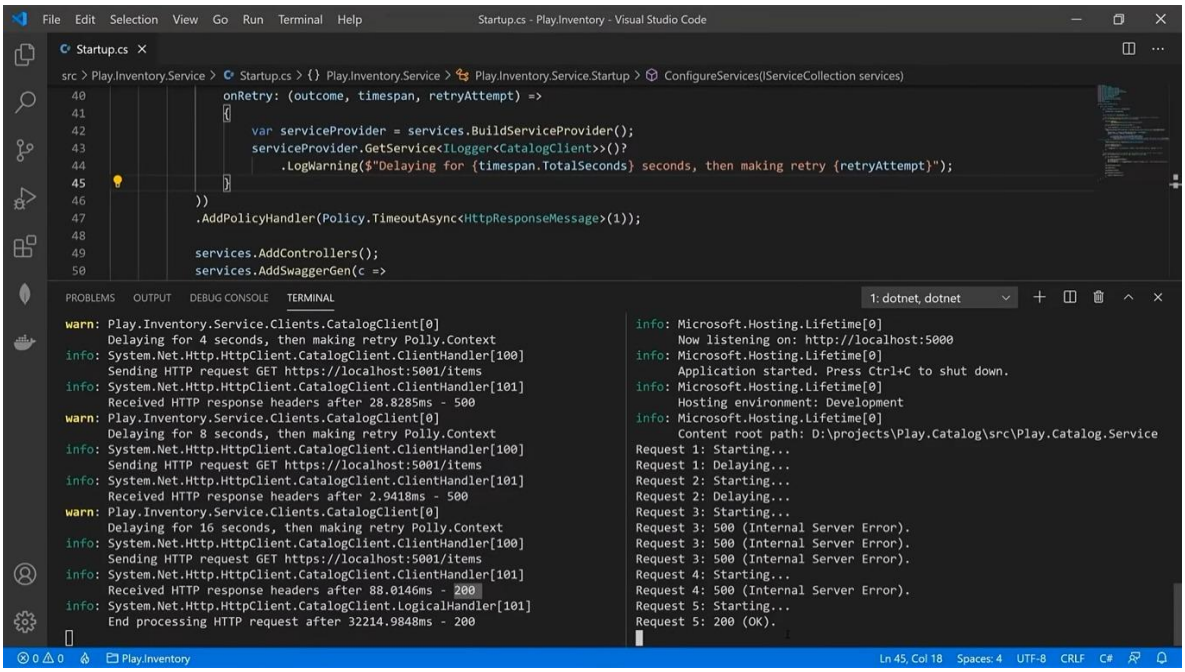


Iniciar Docker Mongo

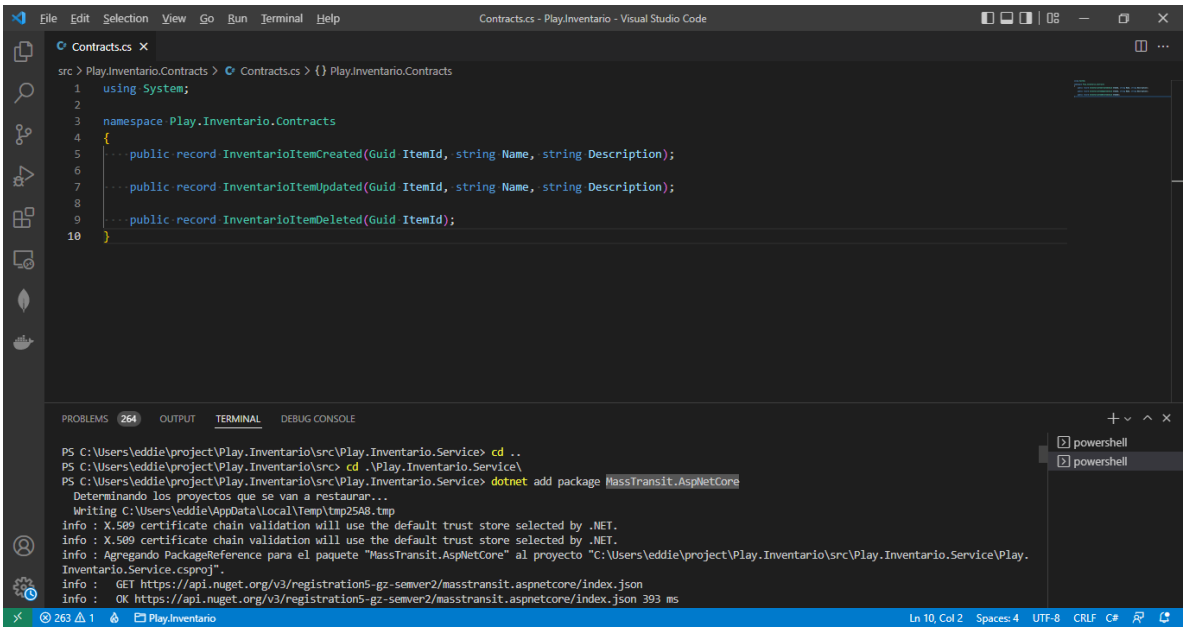




Comunicación asíncrona entre microservicios



Message Broker (RabbitMQ + MassTransit)



File Edit Selection View Go Run Terminal Help — Contracts.cs - Play.Inventario - Visual Studio Code

Contracts.cs

src > Play.Inventario.Contracts > Contracts.cs > {} Play.Inventario.Contracts

```
using System;

namespace Play.Inventario.Contracts
{
    public record InventarioItemCreated(Guid ItemId, string Name, string Description);

    public record InventarioItemUpdated(Guid ItemId, string Name, string Description);

    public record InventarioItemDeleted(Guid ItemId);
}
```

PROBLEMS 264 OUTPUT TERMINAL DEBUG CONSOLE

```
info : Se agregó PackageReference para la versión "7.3.1" del paquete "MassTransit.AspNetCore" al archivo "C:\Users\eddie\project\Play.Inventario\src\Play.Inven
tario.Service\Play.Inventario.Service.csproj".
info : Escribiendo el archivo de recursos en el disco. Ruta de acceso: C:\Users\eddie\project\Play.Inventario\src\Play.Inventario.Service\obj\project.assets.jso
n
log  : Se ha restaurado C:\Users\eddie\project\Play.Inventario\src\Play.Inventario.Service\Play.Inventario.Service.csproj (en 5,56 sec).
PS C:\Users\eddie\project\Play.Inventario\src\Play.Inventario.Service> dotnet add package MassTransit.RabbitMQ
  Determinando los proyectos que se van a restaurar...
  Writing C:\Users\eddie\AppData\Local\Temp\tmp4467.tmp
info : X.509 certificate chain validation will use the default trust store selected by .NET.
info : X.509 certificate chain validation will use the default trust store selected by .NET.
info : Agregando PackageReference para el paquete "MassTransit.RabbitMQ" al proyecto "C:\Users\eddie\project\Play.Inventario\src\Play.Inventario.Service\Play.In
ventario.Service.csproj".
info :   GET https://api.nuget.org/v3/registration5-gz-semver2/masstransit.rabbitmq/index.json
info :   OK https://api.nuget.org/v3/registration5-gz-semver2/masstransit.rabbitmq/index.json 532 ms
info :   GET https://api.nuget.org/v3/registration5-gz-semver2/masstransit.rabbitmq/page/2.0.0.1/3.2.3.json
```

powershell
powershell

263 ⚠ 1 — Play.Inventario — Ln 10, Col 2 — Spaces: 4 — UTF-8 — CRLF — C#

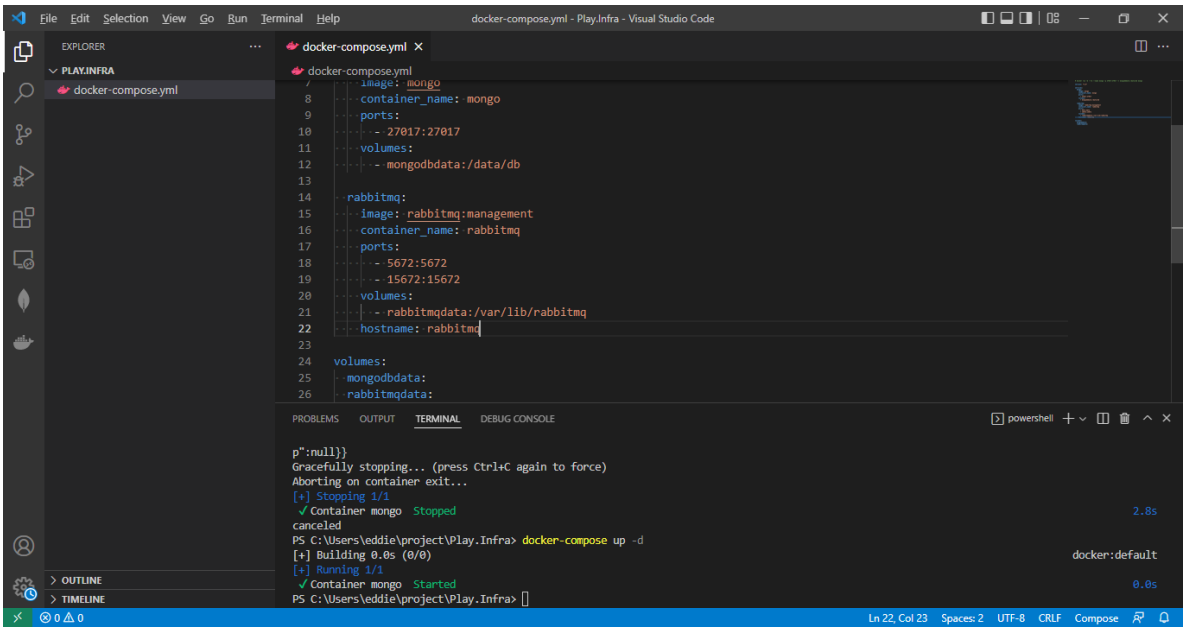
File Edit Selection View Go Run Terminal Help — appsettings.json - Play.Inventario - Visual Studio Code

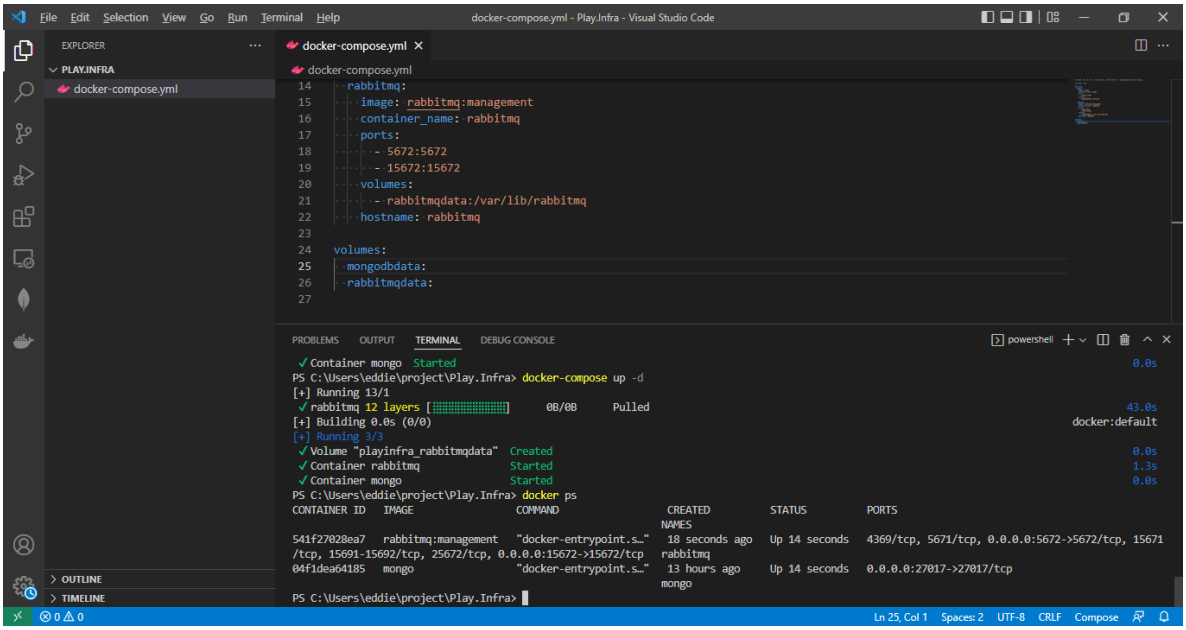
appsettings.json

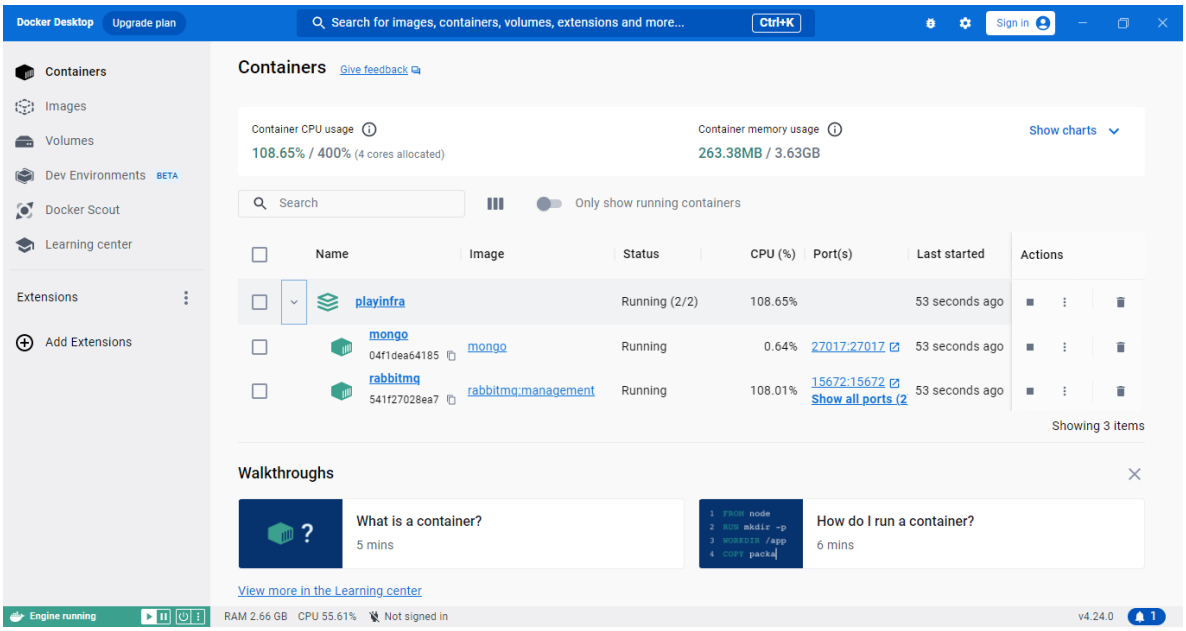
src > Play.Inventario.Service > appsettings.json > {} RabbitMQSettings

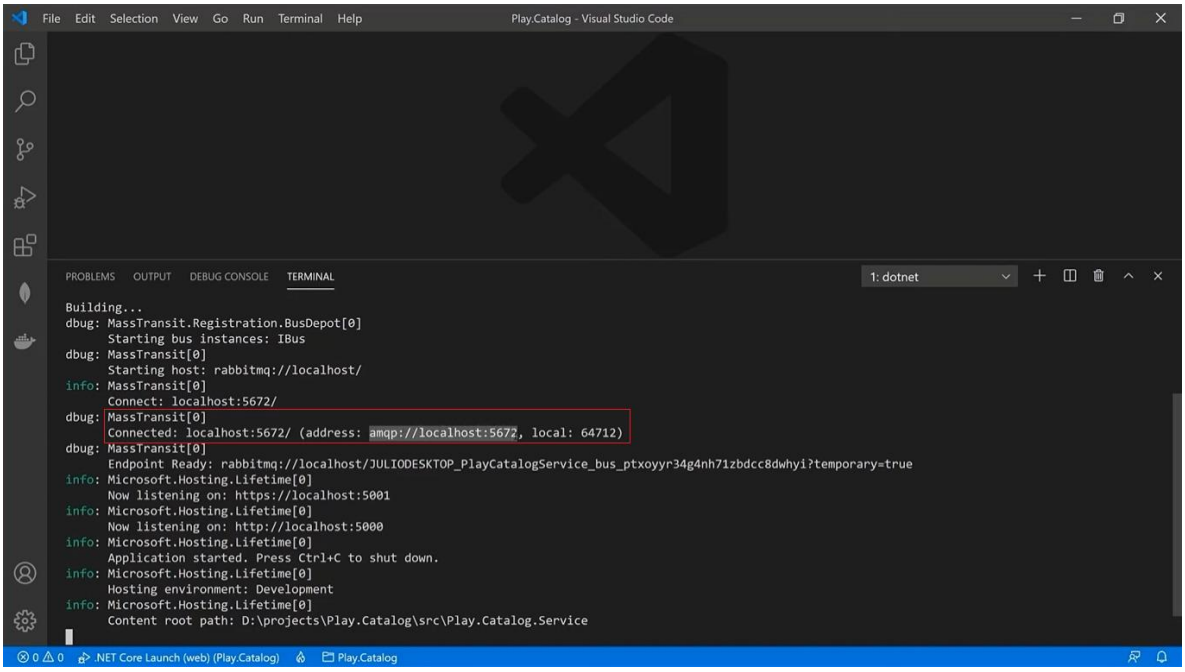
```
{
  "Logging": {
    "LogLevel": {
      "Default": "Information",
      "Microsoft.AspNetCore": "Warning"
    }
  },
  "ServiceSettings": {
    "ServiceName": "Catalog"
  },
  "MongoDbSettings": {
    "Host": "localhost",
    "Port": "27017"
  },
  "RabbitMQSettings": {
    "Host": "localhost"
  },
  "AllowedHosts": "*"
}
```

258 ⚠ 1 — Play.Inventario — Ln 15, Col 20 (16 selected) — Spaces: 2 — UTF-8 — CRLF — {} JSON

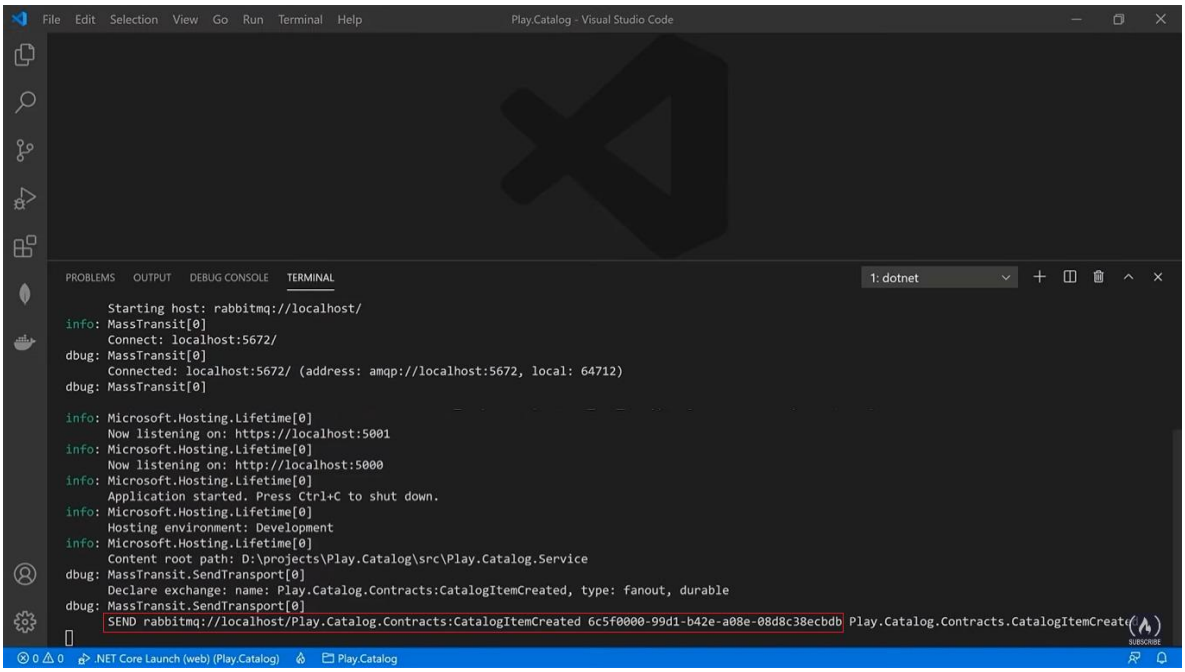

docker-compose.yml - Play.Infra - Visual Studio Code
docker-compose.yml
image: mongo
container_name: mongo
ports:
- 27017:27017
volumes:
- mongodbdata:/data/db
rabbitmq:
image: rabbitmq:management
container_name: rabbitmq
ports:
- 5672:5672
- 15672:15672
volumes:
- rabbitmqdata:/var/lib/rabbitmq
hostname: rabbitmq
volumes:
mongodbdata:
rabbitmqdata:
PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE
Gracefully stopping... (press Ctrl+C again to force)
Aborting on container exit...
[+] Stopping 1/1
Container mongo Stopped
canceled
PS C:\Users\eddie\project\Play.Infra> docker-compose up -d
[+] Building 0.0s (0/0)
[+] Running 1/1
Container mongo Started
PS C:\Users\eddie\project\Play.Infra>


docker-compose.yml - Play.Infra - Visual Studio Code
docker-compose.yml
rabbitmq:
image: rabbitmq:management
container_name: rabbitmq
ports:
- 5672:5672
- 15672:15672
volumes:
- rabbitmqdata:/var/lib/rabbitmq
hostname: rabbitmq
volumes:
mongodbdata:
rabbitmqdata:
PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE
Container mongo Started
PS C:\Users\eddie\project\Play.Infra> docker-compose up -d
[+] Running 13/1
rabbitmq 12 layers 0B/0B Pulled
[+] Building 0.0s (0/0)
[+] Running 3/3
Volume "playinfra_rabbitmqdata" Created
Container rabbitmq Started
Container mongo Started
PS C:\Users\eddie\project\Play.Infra> docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
541f27028ea7 rabbitmq:management "docker-entrypoint.s…" 18 seconds ago Up 14 seconds 4369/tcp, 5671/tcp, 0.0.0.0:5672->5672/tcp, 15671/tcp, 15691-15692/tcp, 25672/tcp, 0.0.0.0:15672->15672/tcp rabbitmq
04f1dea64185 mongo "docker-entrypoint.s…" 13 hours ago Up 14 seconds 0.0.0.0:27017->27017/tcp mongo
PS C:\Users\eddie\project\Play.Infra>

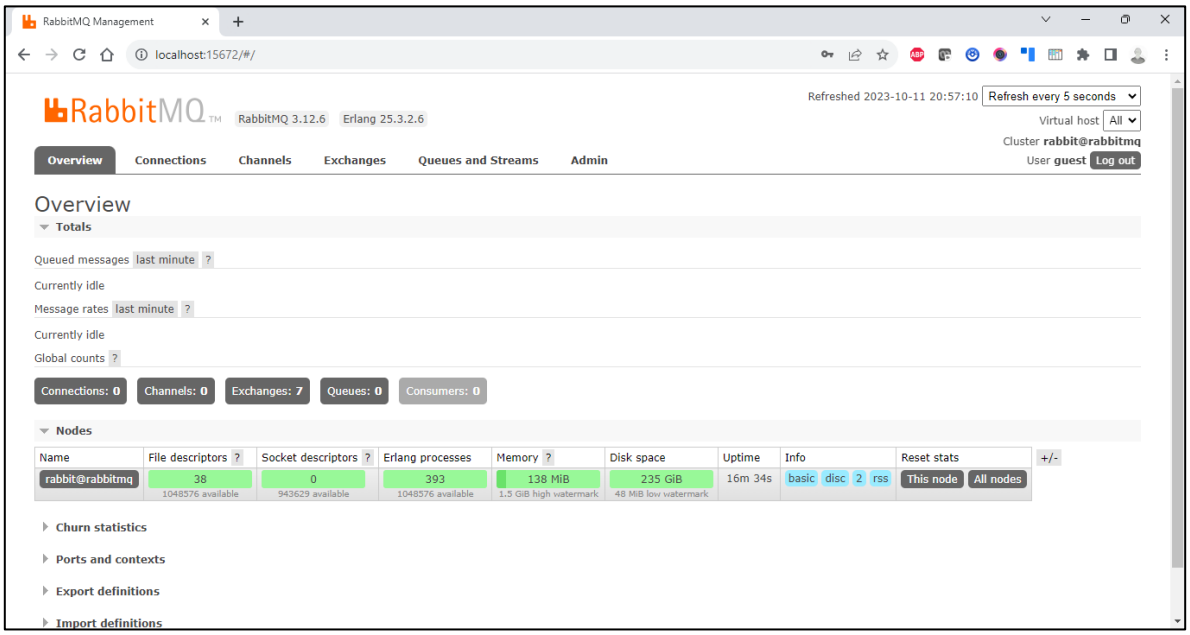

Docker Desktop
Upgrade plan
Search for images, containers, volumes, extensions and more...
Ctrl+K
Sign in
Containers
Images
Volumes
Dev Environments BETA
Docker Scout
Learning center
Extensions
Add Extensions
Containers
Give feedback
Container CPU usage
108.65% / 400% (4 cores allocated)
Container memory usage
263.38MB / 3.63GB
Show charts
Search
Only show running containers
Name
Image
Status
CPU (%)
Port(s)
Last started
Actions
playinfra
Running (2/2)
108.65%
53 seconds ago
mongo
04f1dea64185
mongo
Running
0.64%
27017:27017
53 seconds ago
rabbitmq
541f27028ea7
rabbitmq:management
Running
108.01%
15672:15672
Show all ports (2
53 seconds ago
Showing 3 items
Walkthroughs
What is a container?
5 mins
How do I run a container?
6 mins
View more in the Learning center
Engine running
RAM 2.66 GB CPU 55.61%
Not signed in
v4.24.0


File Edit Selection View Go Run Terminal Help
Play.Catalog - Visual Studio Code
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
1: dotnet
Building...
dbug: MassTransit.Registration.BusDepot[0]
Starting bus instances: IBus
dbug: MassTransit[0]
Starting host: rabbitmq://localhost/
info: MassTransit[0]
Connect: localhost:5672/
dbug: MassTransit[0]
Connected: localhost:5672/ (address: amqp://localhost:5672, local: 64712)
dbug: MassTransit[0]
Endpoint Ready: rabbitmq://localhost/JULIODESKTOP_PlayCatalogService_bus_ptxoyyr34g4nh71zbdcc8dwhyi?temporary=true
info: Microsoft.Hosting.Lifetime[0]
Now listening on: https://localhost:5001
info: Microsoft.Hosting.Lifetime[0]
Now listening on: http://localhost:5000
info: Microsoft.Hosting.Lifetime[0]
Application started. Press Ctrl+C to shut down.
info: Microsoft.Hosting.Lifetime[0]
Hosting environment: Development
info: Microsoft.Hosting.Lifetime[0]
Content root path: D:\projects\Play.Catalog\src\Play.Catalog.Service
.NET Core Launch (web) (Play.Catalog)
Play.Catalog

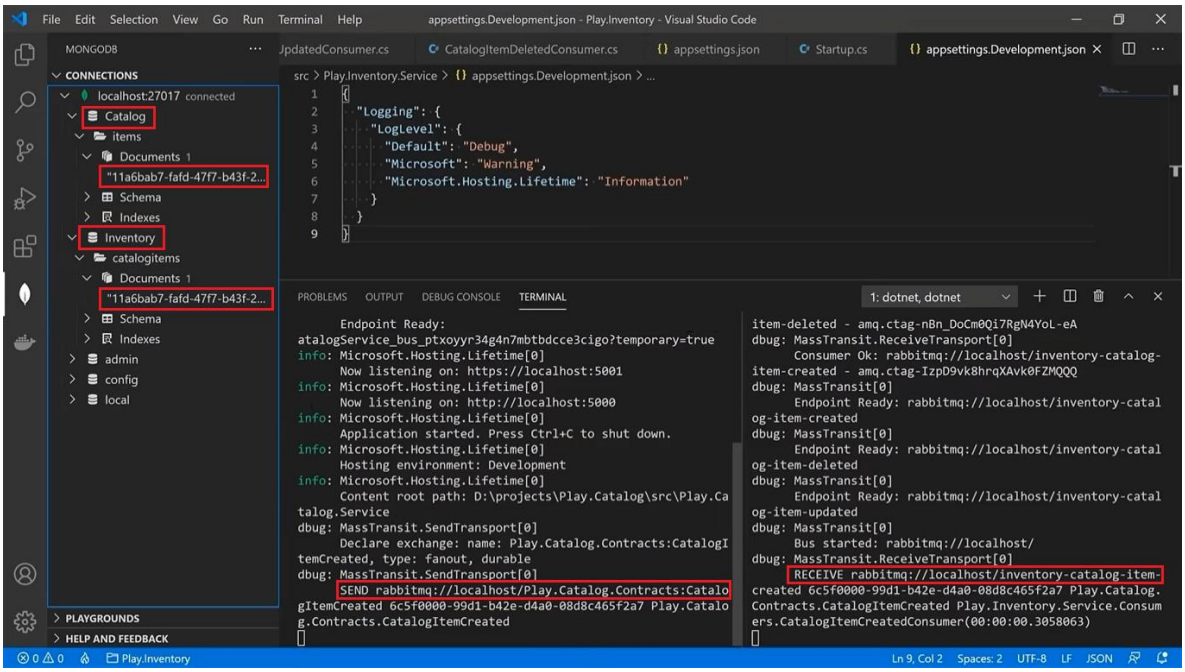
Enviar mensaje mediante RabbitMQ



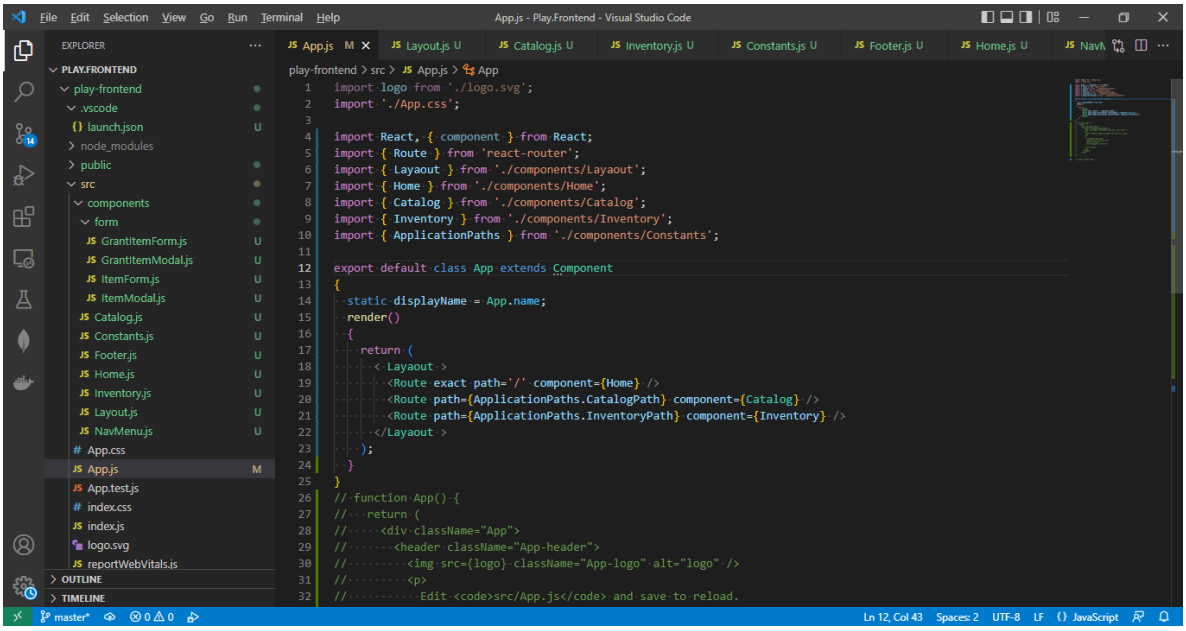
RabbitMQ Console



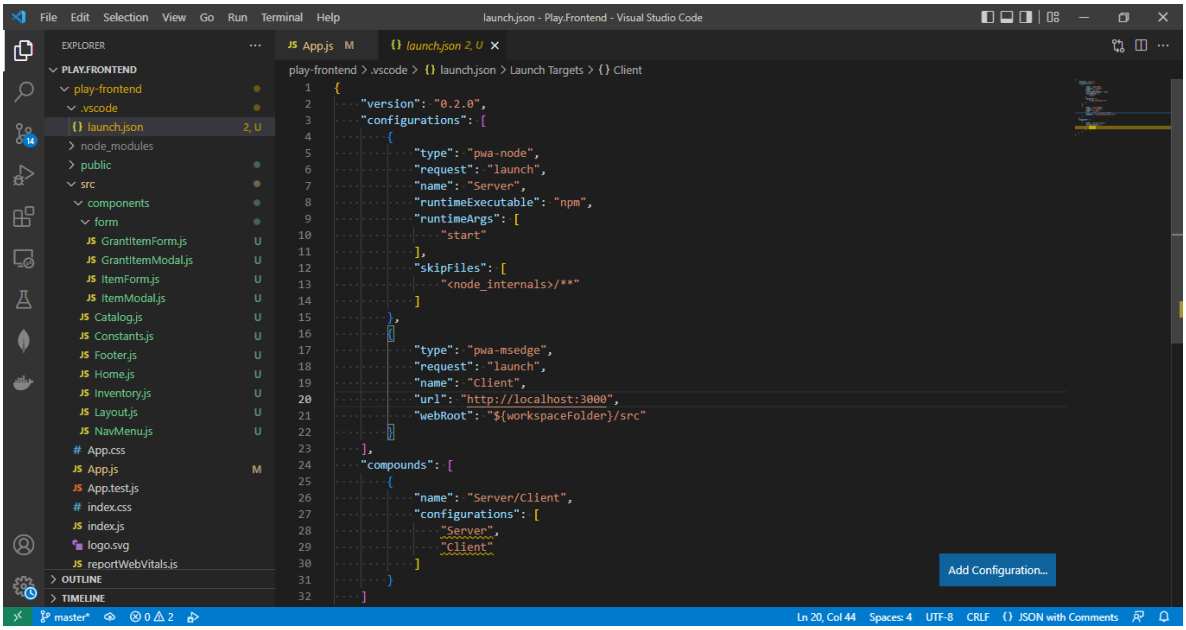
Enviar y recibir mensajes entre microservicios a través de RabbitMQ



Frontend (React)



Hosted (Node.js) Web Server

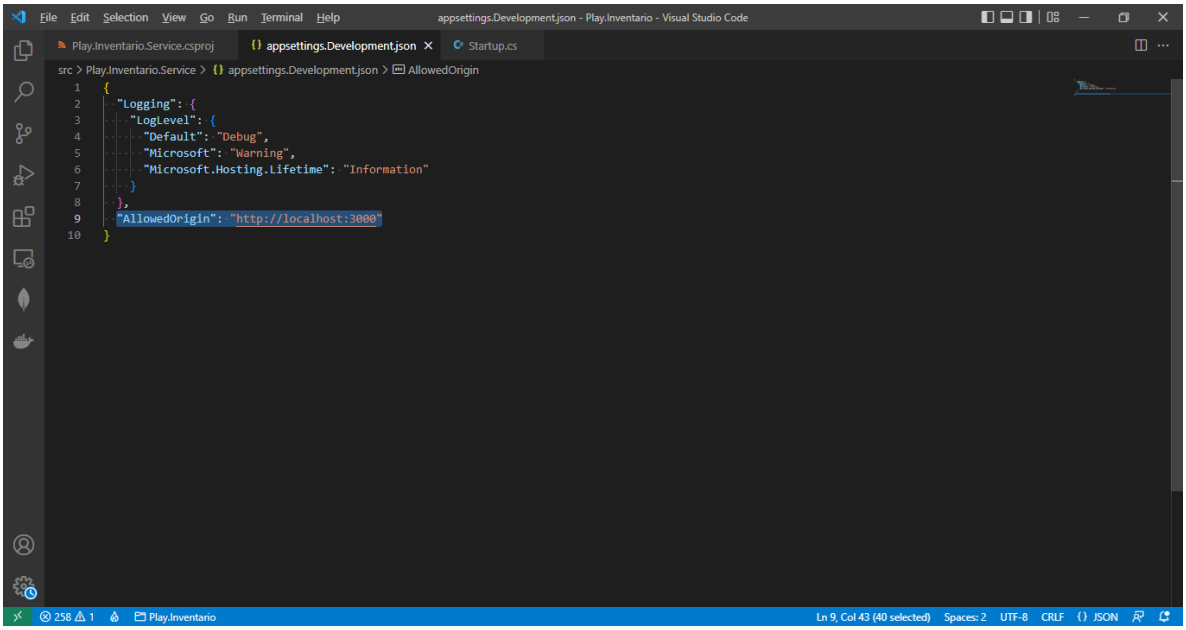


CORS (Cross-Origin Resource Sharing)
Para la comunicación entre el frontend y los microservicios

CORS

Permite a un servidor indicar cualquier otro origen distinto del suyo desde el cual un navegador debería permitir la carga de recursos.

Permitir origen desde otras fuentes



Permitir otros orígenes

```
File Edit Selection View Go Run Terminal Help        Startup.cs - Play.Inventario - Visual Studio Code
Play.Inventario.Service.csproj   appsettings.Development.json   Startup.cs
Startup.cs > {} Play.Inventario.Service > Startup > Configure(IApplicationBuilder app, IWebHostEnvironment env)
62              {
63                  var database = serviceProvider.GetService<IMongoDatabase>();
64                  return new MongoRepository<Item>(database, "items");
65              });
66
67              services.AddControllers(options =>
68              {
69                  options.SuppressAsyncSuffixInActionNames = false;
70              });
71          }
72
            0 references
73          public void Configure(IApplicationBuilder app, IWebHostEnvironment env)
74          {
75              if (env.IsDevelopment())
76              {
77                  app.UseCors(builder =>
78                  {
79                      builder.WithOrigins(Configuration[AllowedOriginSetting])
80                      .AllowAnyHeader()
81                      .AllowAnyMethod();
82                  });
83              }
84          }
85      }
86  }
258 ⚠ 1   Play.Inventario                    Ln 77, Col 17 (219 selected)   Spaces: 4   UTF-8   CRLF   C#
```

Consumir API plaza de mercado desde API propia

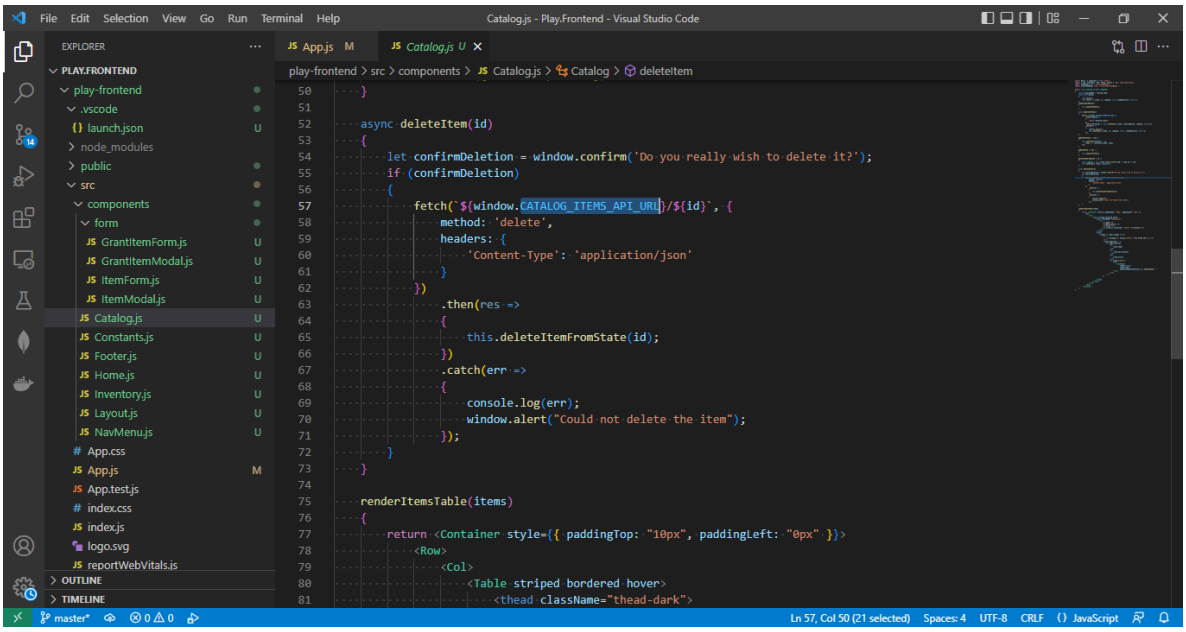
https://utadeoapi-6dae6e29b5b0.herokuapp.com/api/v1/software-architecture/market-place?ingredient=tomato

```
File Edit Selection View Go Run Terminal Help        Startup.cs - Play.Inventario - Visual Studio Code
Play.Inventario.Service.csproj   appsettings.Development.json   Startup.cs
Startup.cs > {} Play.Inventario.Service > Startup > AddHttpClient()
66              var database = serviceProvider.GetService<IMongoDatabase>();
67              return new MongoRepository<Item>(database, "items");
68              });
69
70              services.AddControllers(options =>
71              {
72                  options.SuppressAsyncSuffixInActionNames = false;
73              });
74          }
75
            0 references
76          public void AddHttpClient()
77          {
78              var client = _clientFactory.CreateClient();
79              //client.DefaultRequestHeaders.Add("Authorization", $"bearer {your_token_here}");
80
81              //Ingrediente varible dependiendo de la receta
82              var mdata = new { Name = "tomato" };
83
84              var content = new StringContent(System.Text.Json.JsonSerializer.Serialize(mdata), System.Text.Encoding.UTF8, "application/json");
85
86              var response = await client.PostAsync("https://utadeoapi-6dae6e29b5b0.herokuapp.com/api/v1/software-architecture/market-place?ingredi
87
88              if (response.IsSuccessStatusCode)
89              {
90                  //...
91              }
92          }
93
            0 references
94          public void Configure(IApplicationBuilder app, IWebHostEnvironment env)
95          {
258 ⚠ 1   Play.Inventario                    Ln 84, Col 92 (5 selected)   Spaces: 4   UTF-8   CRLF   C#
```

```
utadeoapi-6dae6e29b5b0.herokuapp.com/api/v1/software-architecture/market-place?ingredient=tomato

{"message":"Thanks for your purchase","data":{"tomato":3}}
```

Interconexión entre microservicios



Recetas

Recetas x 6

(Ingredientes):

Tomato

Lemon

Potato

Rice

Ketchup

Lettuce

Onion

Cheese

Meat

Chicken

A continuación, se describen 6 recetas ficticias utilizando los ingredientes proporcionados.

1. **Ensalada de Tomate y Queso**:

- Ingredientes:

  - Tomato (2 unidades)

  - Lettuce (1 unidad)

  - Cheese (2 unidades)

- Preparación: Corta los tomates en rodajas, mezcla con la lechuga y el queso. Sirve con tu aderezo favorito.

2. **Arroz con Pollo al Limón**:

- Ingredientes:

  - Rice (1 unidad)

  - Chicken (1 unidad)

  - Lemon (2 unidades)

- Preparación: Cocina el arroz. En una sartén, cocina el pollo con el jugo de limón. Sirve el pollo sobre el arroz.

3. **Papas Gratinadas con Queso:**

- Ingredientes:

  - Potato (4 unidades)

  - Cheese (2 unidades)

- Preparación: Corta las papas en rodajas finas. Coloca en capas en una fuente para horno con queso entre cada capa. Hornea hasta que las papas estén tiernas.

4. **Salsa de Tomate Casera:**

- Ingredientes:

  - Tomato (5 unidades)

  - Onion (1 unidad)

  - Garlic (2 unidades)

- Preparación: Hierve los tomates y pélalos. Sofríe la cebolla y el ajo, luego agrega los tomates triturados. Cocina a fuego lento hasta obtener una salsa espesa.

5. **Hamburguesa con Salsa de Ketchup:**

- Ingredientes:

  - Meat (1 unidad)

  - Lettuce (1 unidad)

- Tomato (1 unidad)

- Ketchup (1 unidad)

- Preparación: Forma las hamburguesas y cocínalas. Arma las hamburguesas con lechuga, tomate y salsa de ketchup.

6. **Pollo con Limón y Queso:**

- Ingredientes:

- Chicken (1 unidad)

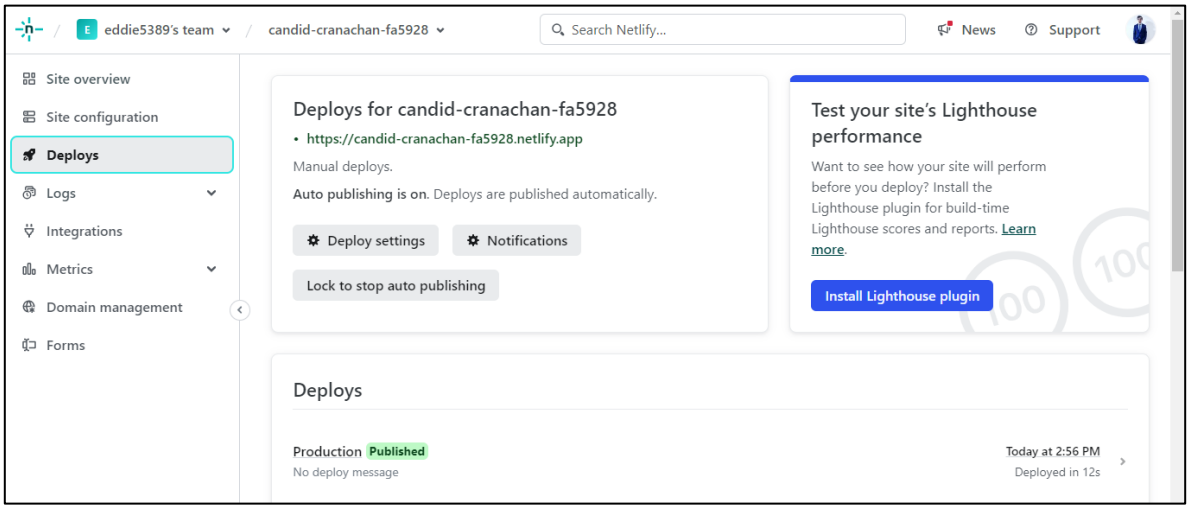
- Lemon (1 unidad)

- Cheese (2 unidades)

- Preparación: Cocina el pollo a la parrilla o en una sartén. Exprime limón sobre el pollo y agrega queso rallado antes de servir.

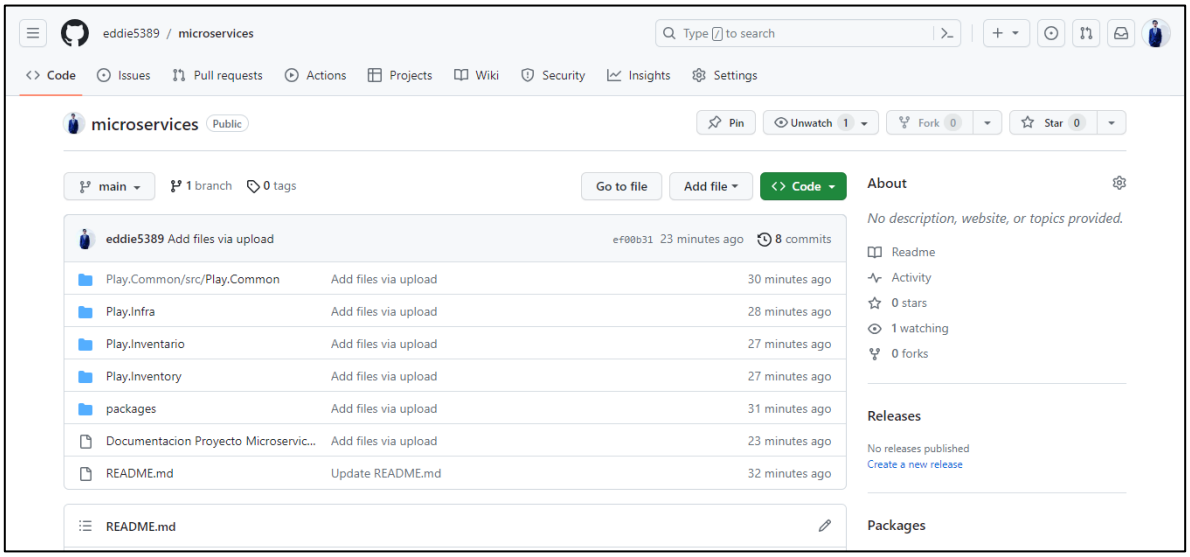
Deploy App NETLIFY

URL: https://candid-cranachan-fa5928.netlify.app/



GitHub Repositorio

URL: https://github.com/eddie5389/microservices



Nota. Github no permitió subir archivo frontend (react) ya que excede el tamaño permito (25MB) por lo cual se adjunta el archivo comprimido en ".zip" directamente en Avata.