## Solution Structure

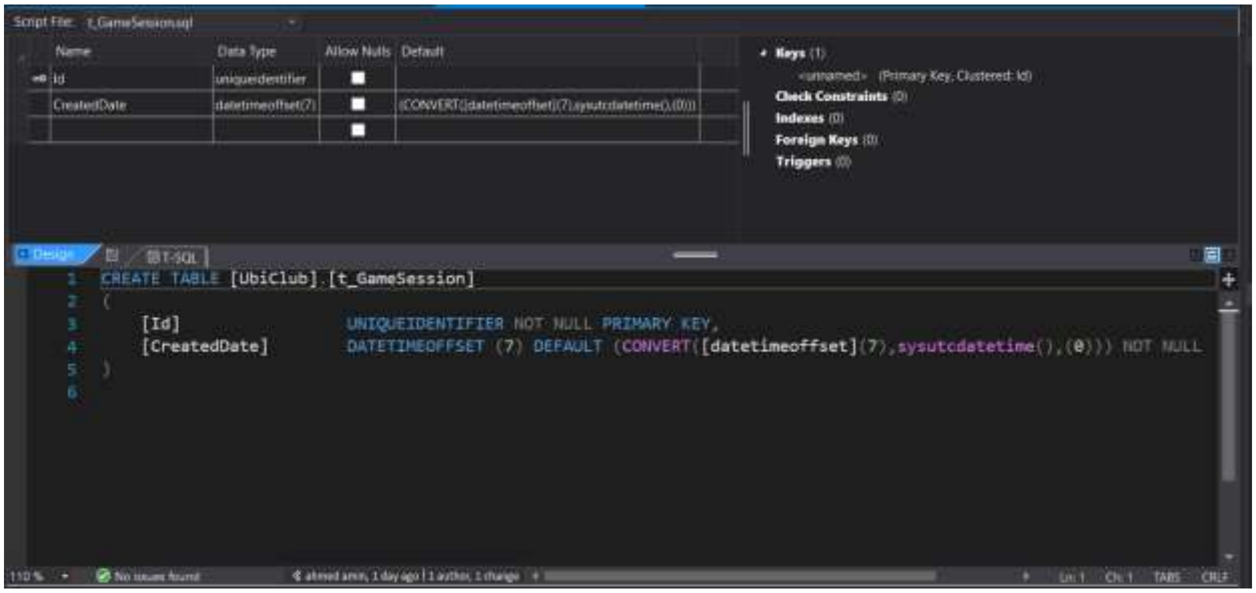
- Solution is built using .NET core 3.1 and Visual Studio 2019.
- HTTP endpoints are implemented as Azure Functions.
- Database Schema is maintained in Database project.
- Solution consists of following projects
  - “**UbiClub.DB**”: SQL-Server Database project; to maintains Db schema and publish database changes.
  - “**UbiClub.Feedback.Core**”: dot NET core class library used to define Model classes used by multiple projects in solution.
  - “**UbiClub.Feedback.Entities**”: dot NET core class library defines database entities and database context.
    - It uses EF core 3.1 as ORM framework.
  - “**UbiClub.Feedback.Data**”: dot NET class library defines generic repository and data-access services.
  - “**UbiClub.Feedback.Api**”: Azure Function 3.0 project. It defines Http endpoints as azure functions.

## Database Schema

### Tables

#### “t_GameSession” table

- Stores information about game sessions.



Script File: t_GameSession.sql

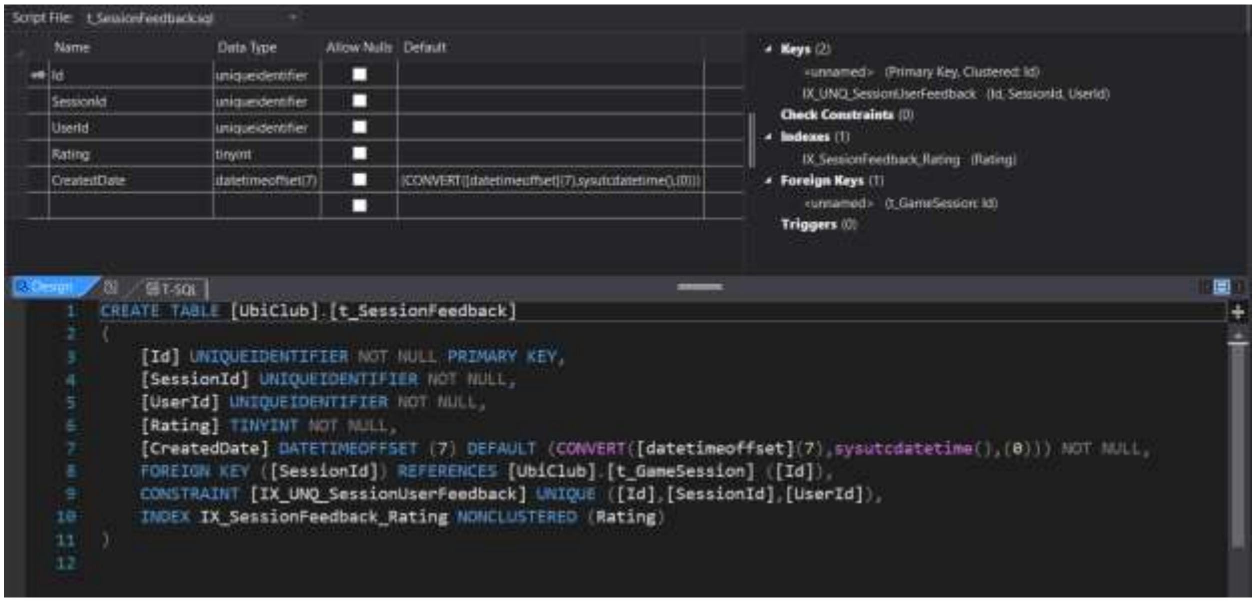
| Name | Data Type | Allow Nulls | Default |
|---|---|---|---|
| Id | uniqueidentifier | ☐ | |
| CreatedDate | datetimeoffset(7) | ☐ | (CONVERT([datetimeoffset](7),sysutcdatetime(),(0))) |
| | | ☐ | |

Keys (1)
<unnamed> (Primary Key, Clustered: Id)
Check Constraints (0)
Indexes (0)
Foreign Keys (0)
Triggers (0)

```
CREATE TABLE [UbiClub].[t_GameSession]
(
    [Id]                UNIQUEIDENTIFIER NOT NULL PRIMARY KEY,
    [CreatedDate]       DATETIMEOFFSET (7) DEFAULT (CONVERT([datetimeoffset](7),sysutcdatetime(),(0))) NOT NULL
)
```

#### “t_SessionFeedback” table

- Stores users’ rating about specific game session


Script File: t_SessionFeedback.sql

| Name | Data Type | Allow Nulls | Default |
|---|---|---|---|
| Id | uniqueidentifier | ☐ | |
| SessionId | uniqueidentifier | ☐ | |
| UserId | uniqueidentifier | ☐ | |
| Rating | tinyint | ☐ | |
| CreatedDate | datetimeoffset(7) | ☐ | (CONVERT([datetimeoffset](7),sysutcdatetime(),(0))) |
| | | ☐ | |

```
Keys (2)
    <unnamed>   (Primary Key, Clustered: Id)
    IX_UNQ_SessionUserFeedback   (Id, SessionId, UserId)
Check Constraints (0)
Indexes (1)
    IX_SessionFeedback_Rating   (Rating)
Foreign Keys (1)
    <unnamed>   (t_GameSession: Id)
Triggers (0)
```

```
CREATE TABLE [UbiClub].[t_SessionFeedback]
(
    [Id] UNIQUEIDENTIFIER NOT NULL PRIMARY KEY,
    [SessionId] UNIQUEIDENTIFIER NOT NULL,
    [UserId] UNIQUEIDENTIFIER NOT NULL,
    [Rating] TINYINT NOT NULL,
    [CreatedDate] DATETIMEOFFSET (7) DEFAULT (CONVERT([datetimeoffset](7),sysutcdatetime(),(0))) NOT NULL,
    FOREIGN KEY ([SessionId]) REFERENCES [UbiClub].[t_GameSession] ([Id]),
    CONSTRAINT [IX_UNQ_SessionUserFeedback] UNIQUE ([Id],[SessionId],[UserId]),
    INDEX IX_SessionFeedback_Rating NONCLUSTERED (Rating)
)
```

## Api Documentation

### Post feedback endpoint

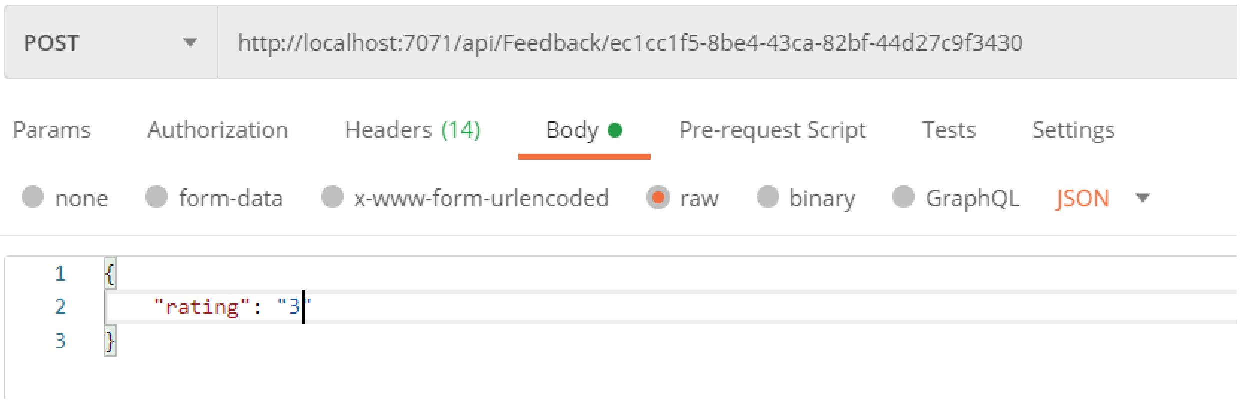
#### Route

- Http verb: POST
- Endpoint URL: /api/feedback/<session-id>

#### Input parameters

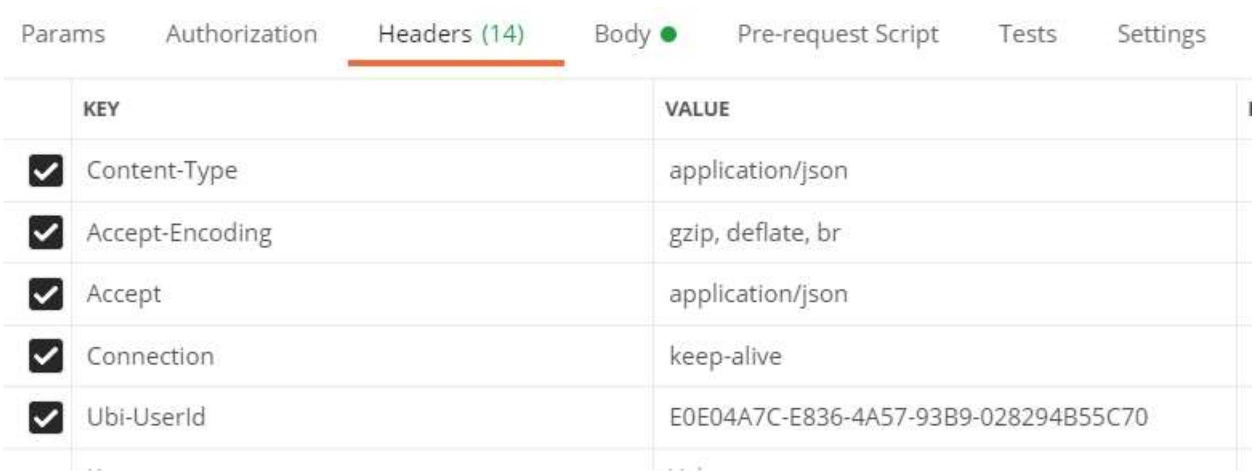
| name | type | required | source |
|---|---|---|---|
| Session-id | GUID | yes | Endpoint URL path |
| User-id | GUID | yes | “**Ubi-UserId**” header in http request |
| rating | byte | yes | Request body |

#### Request example


POST http://localhost:7071/api/Feedback/ec1cc1f5-8be4-43ca-82bf-44d27c9f3430

none / form-data / x-www-form-urlencoded / [✓ raw] / binary / GraphQL — JSON

```
{
    "rating": "3"
}
```

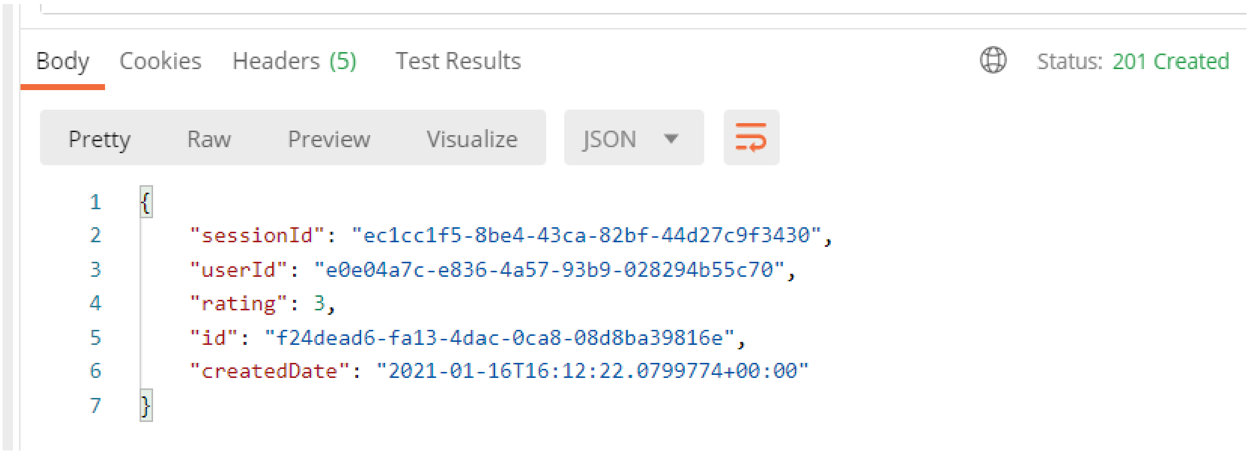


| KEY | VALUE |
|---|---|
| Content-Type | application/json |
| Accept-Encoding | gzip, deflate, br |
| Accept | application/json |
| Connection | keep-alive |
| Ubi-UserId | E0E04A7C-E836-4A57-93B9-028294B55C70 |

## Response status codes

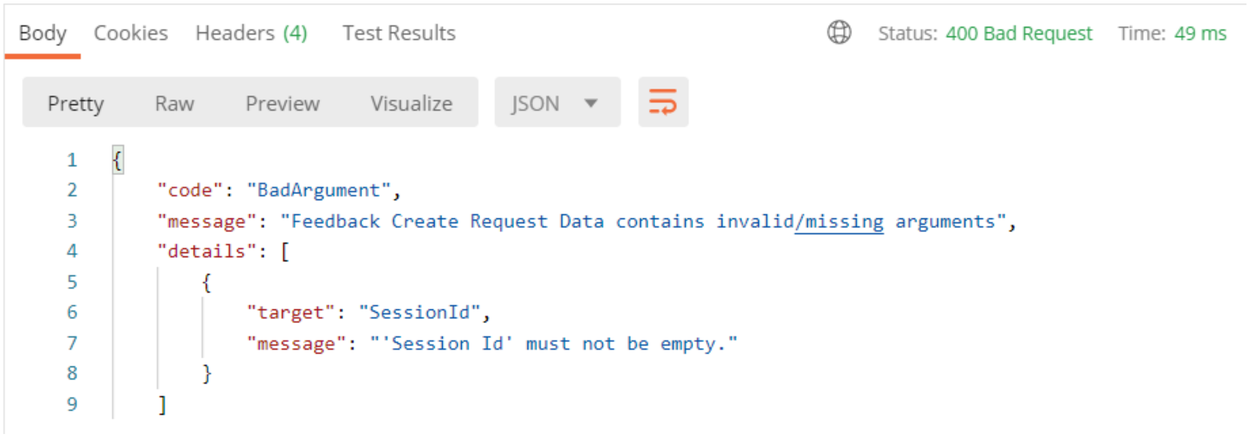
- 201: used when feedback is created successfully.
- 400: used when there are validation errors in request.
- 500: internal server error.

## Success response example



```
{
    "sessionId": "ec1cc1f5-8be4-43ca-82bf-44d27c9f3430",
    "userId": "e0e04a7c-e836-4a57-93b9-028294b55c70",
    "rating": 3,
    "id": "f24dead6-fa13-4dac-0ca8-08d8ba39816e",
    "createdDate": "2021-01-16T16:12:22.0799774+00:00"
}
```

## Error Response example



```
{
    "code": "BadArgument",
    "message": "Feedback Create Request Data contains invalid/missing arguments",
    "details": [
        {
            "target": "SessionId",
            "message": "'Session Id' must not be empty."
        }
    ]
```

## Get Feedback endpoint

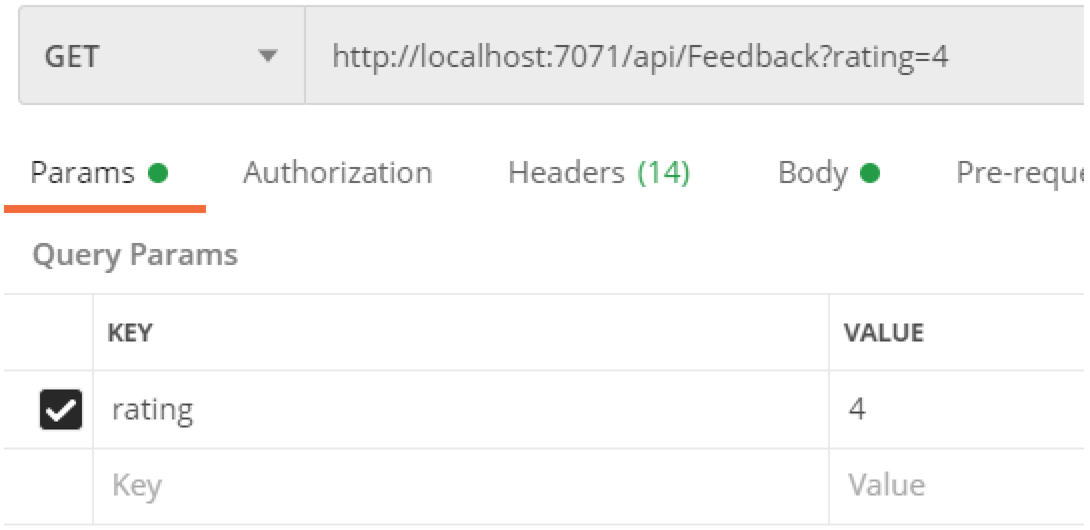
### Route

- Http verb: GET
- Endpoint URL: /api/feedback?rating=5

### Input parameters

| name | type | required | source |
|---|---|---|---|
| rating | byte | optional | Query string |

### Request example



GET http://localhost:7071/api/Feedback?rating=4

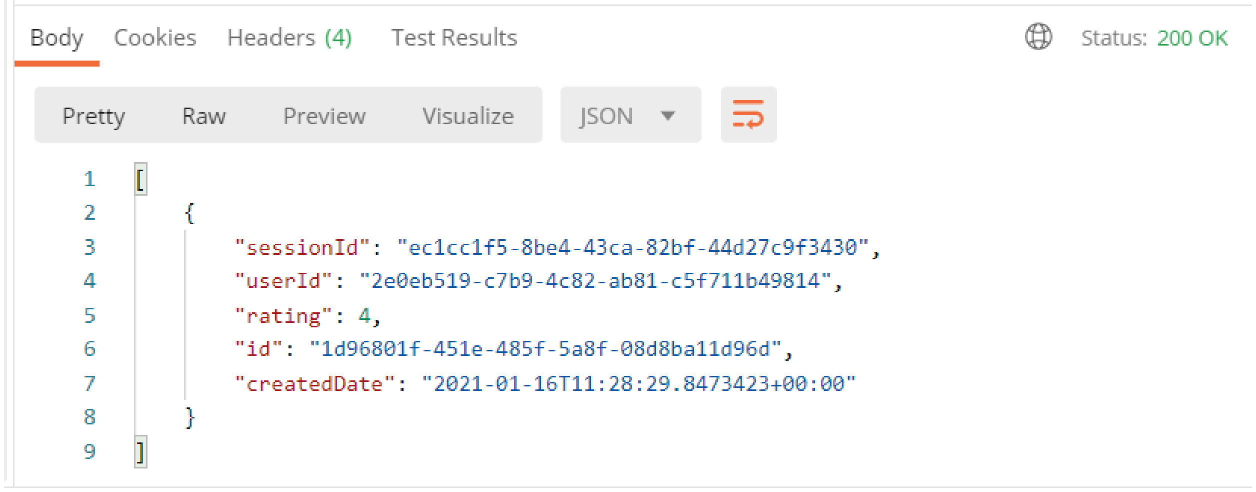
Query Params

| | KEY | VALUE |
|---|---|---|
| ✓ | rating | 4 |
| | Key | Value |

### Response status codes

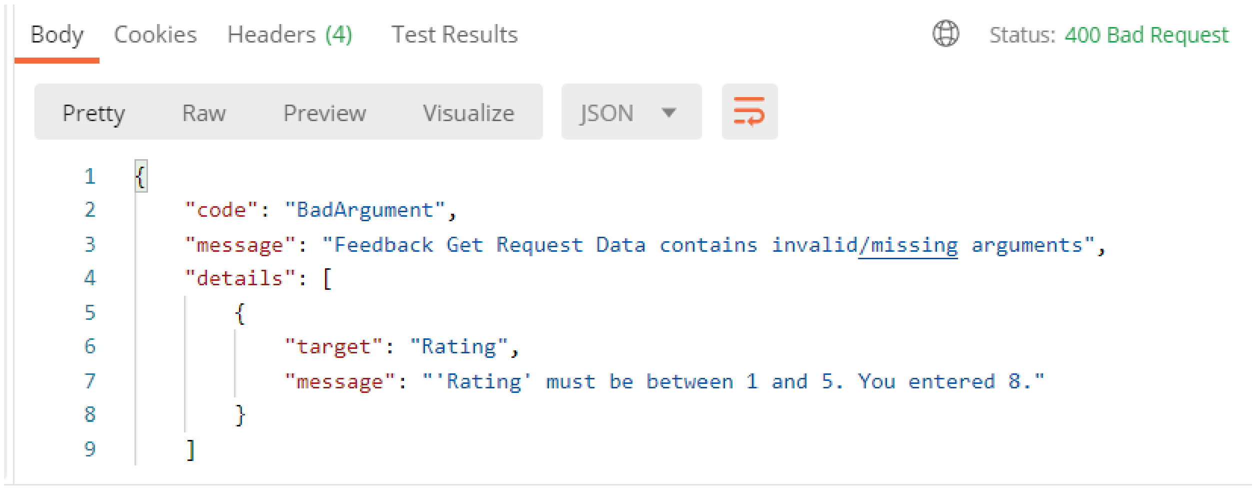
- 200: data is retrieved successfully.
- 400: used when there are validation errors in request.
- 500: internal server error.

### Success response example



```
[
    {
        "sessionId": "ec1cc1f5-8be4-43ca-82bf-44d27c9f3430",
        "userId": "2e0eb519-c7b9-4c82-ab81-c5f711b49814",
        "rating": 4,
        "id": "1d96801f-451e-485f-5a8f-08d8ba11d96d",
        "createdDate": "2021-01-16T11:28:29.8473423+00:00"
    }
]
```

### Error response example



```
{
    "code": "BadArgument",
    "message": "Feedback Get Request Data contains invalid/missing arguments",
    "details": [
        {
            "target": "Rating",
            "message": "'Rating' must be between 1 and 5. You entered 8."
        }
    ]
```

## Run App locally steps

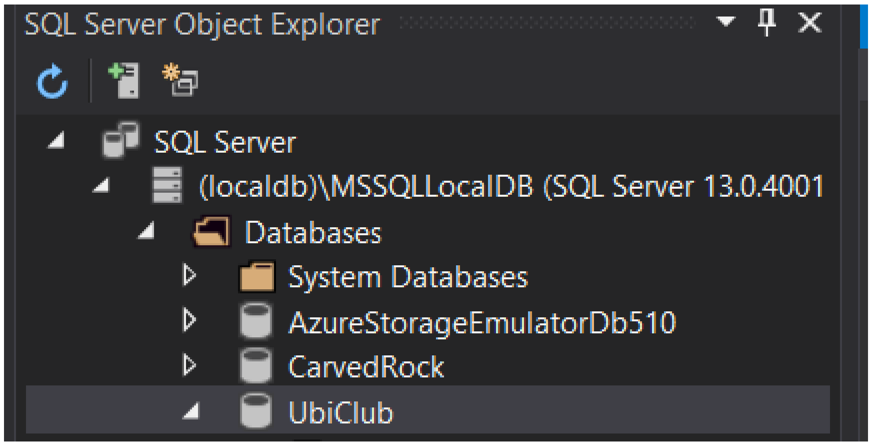
### Prerequisites

- SQL Server Express LocalDB. More information about how to install and connect to LocalDB at https://docs.microsoft.com/en-us/sql/database-engine/configure-windows/sql-server-express-localdb?view=sql-server-ver15#start-localdb-and-connect-to-localdb
    - As mentioned in official documentation, the first time a user on a computer tries to connect to LocalDB, the automatic instance must be both created and started. The extra time for the instance to be created can cause the connection attempt to fail with a timeout message. When this happens, wait a few seconds to let the creation process complete, and then connect again.
- Azure functions tools. It is required to include the Azure development workload in Visual Studio installation (if it isn't installed)

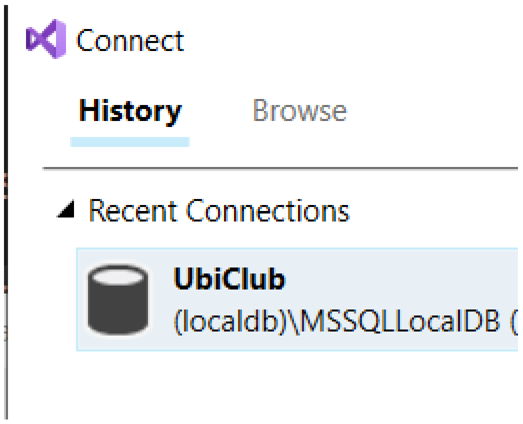
  - more info about modifying VS workloads at https://docs.microsoft.com/en-us/visualstudio/install/modify-visual-studio?view=vs-2019

## To Create database and insert seed data for testing purposes

- Open solution via “UbiClubFeedbackApp.sln”
- Open SQL Server Object explorer
- Connect to “(LocalDB)\\MSSQLLocalDB”
- Create new database and name it “**UbiClub**”.


SQL Server Object Explorer
SQL Server
(localdb)\MSSQLLocalDB (SQL Server 13.0.4001
Databases
System Databases
AzureStorageEmulatorDb510
CarvedRock
UbiClub

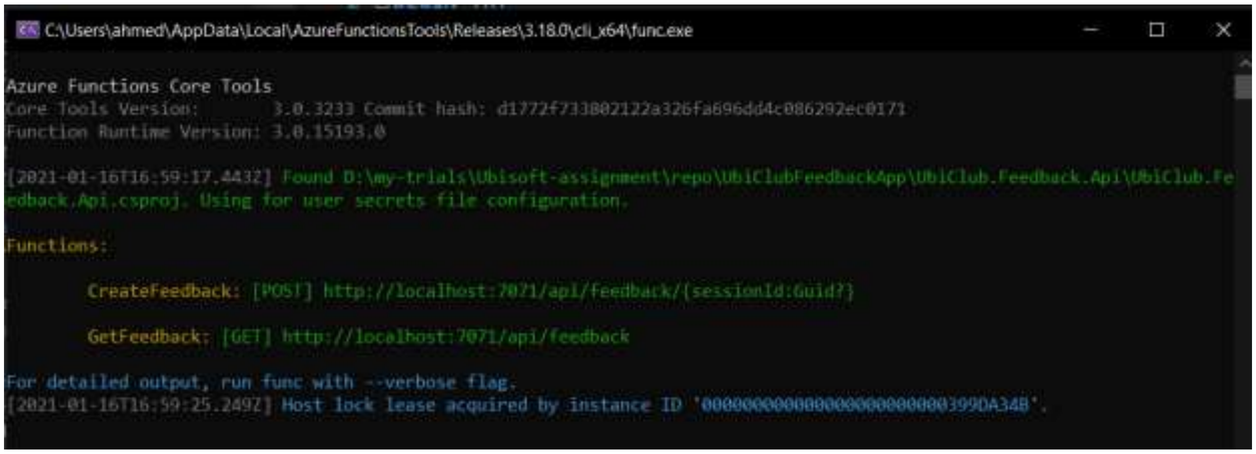
  - Rebuild solution to restore nuget packages
  - Right-click database project and click “**Publish**” from context menu
  - Press “Edit” button in “Publish Database” dialog
  - Select “UbiClub” database from “Connect” dialog and press “OK”



  - Press “Publish” button.
  - **Note**:
    - test data is defined in “**Scripts/ InsertGameSession_TestData.sql**” in database project.
    - Test script inserts test records in “**t_GameSession**” table.
    - **It is assumed** that game session data already exist in DB so when submitting POST requests to insert feedback, please use game session ids (defined in test data).

## Run and Test Azure functions locally

- Select “**UbiClub.Feedback.Api**” as startup project
- Press F5
- Azure Functions Tools will run and console window will appear



```
C:\Users\ahmed\AppData\Local\AzureFunctionsTools\Releases\3.18.0\cli_x64\func.exe

Azure Functions Core Tools
Core Tools Version:       3.0.3233 Commit hash: d1772f733802122a326fa696dd4c086292ec0171
Function Runtime Version: 3.0.15193.0

[2021-01-16T16:59:17.443Z] Found D:\my-trials\Ubisoft-assignment\repo\UbiClubFeedbackApp\UbiClub.Feedback.Api\UbiClub.Fe
edback.Api.csproj. Using for user secrets file configuration.

Functions:

        CreateFeedback: [POST] http://localhost:7071/api/feedback/{sessionId:Guid?}

        GetFeedback: [GET] http://localhost:7071/api/feedback

For detailed output, run func with --verbose flag.
[2021-01-16T16:59:25.249Z] Host lock lease acquired by instance ID '000000000000000000000000399DA34B'.
```

- The application is now ready to receive any Http requests
- More information about running and testing azure functions locally at https://docs.microsoft.com/en-us/azure/azure-functions/functions-develop-vs#testing-functions

## Azure Testing environment Notes

- Please note that application is deployed as Azure Functions App for testing at https://ubi-feedback.azurewebsites.net
- **Get endpoint URL** is https://ubi-feedback.azurewebsites.net/api/feedback?code=uTSzuaax04xx/Q8GIatVwV9o1CofKefU0isl5eihmRHOyZfRYFeYFw==
    - Please note that “rating” query string parameter can be added to URL to filter the data.
- **Post endpoint URL** is https://ubi-feedback.azurewebsites.net/api/feedback/{sessionId:Guid?}?code=FM2vOqBOYjPKbXnuRFtcLoduZ57p7zr2O0TwhZPW3cZbl22LtIkgFg==
    - Please note that “{sessionId:Guid?}” is place holder and we need to replace it with session-id.