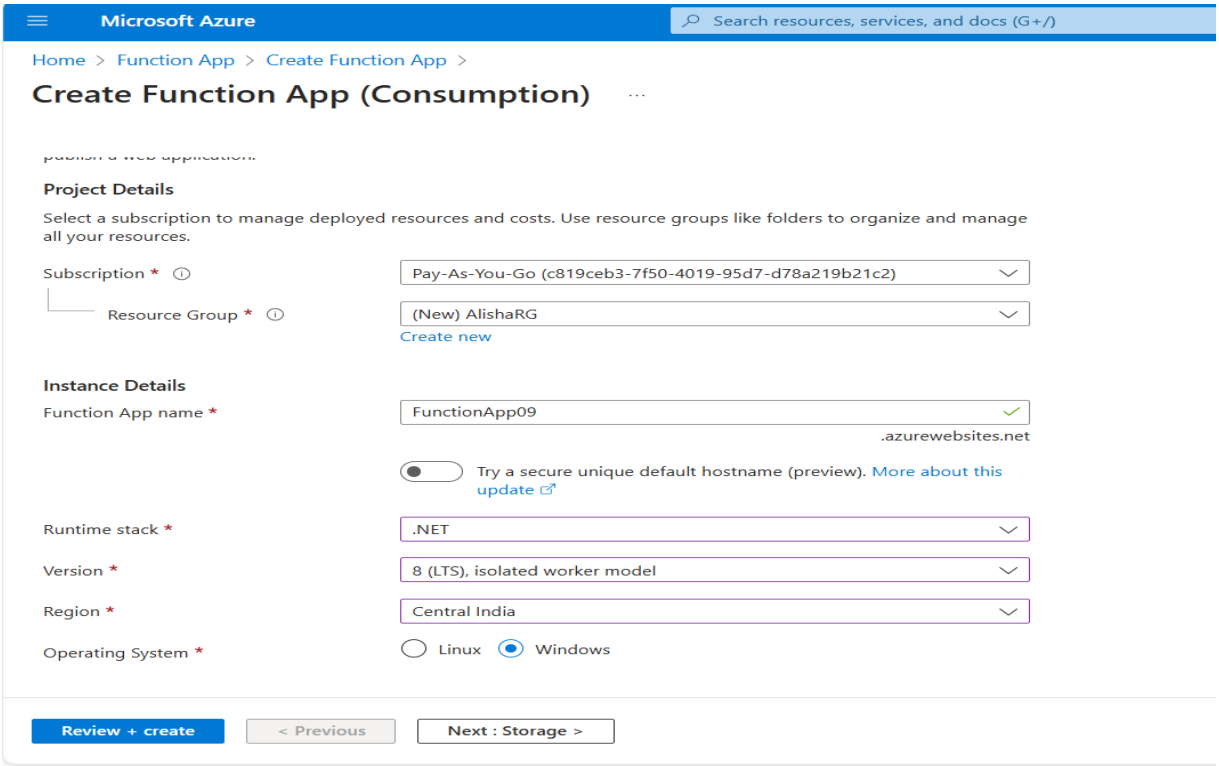
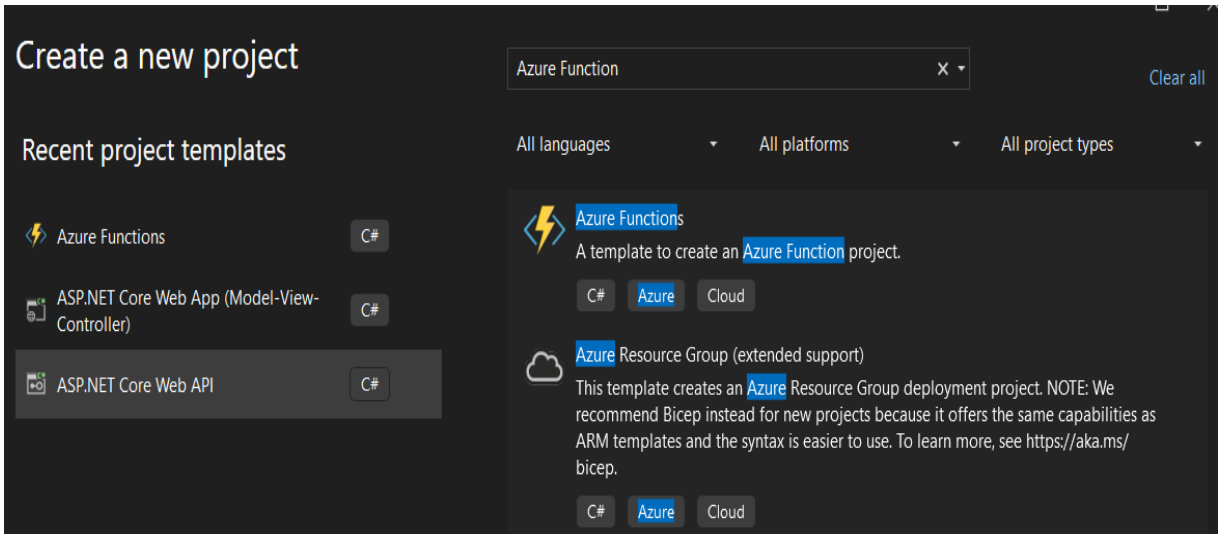
Azure Function Apps: Creation, Deployment, and Durable Functions with .NET

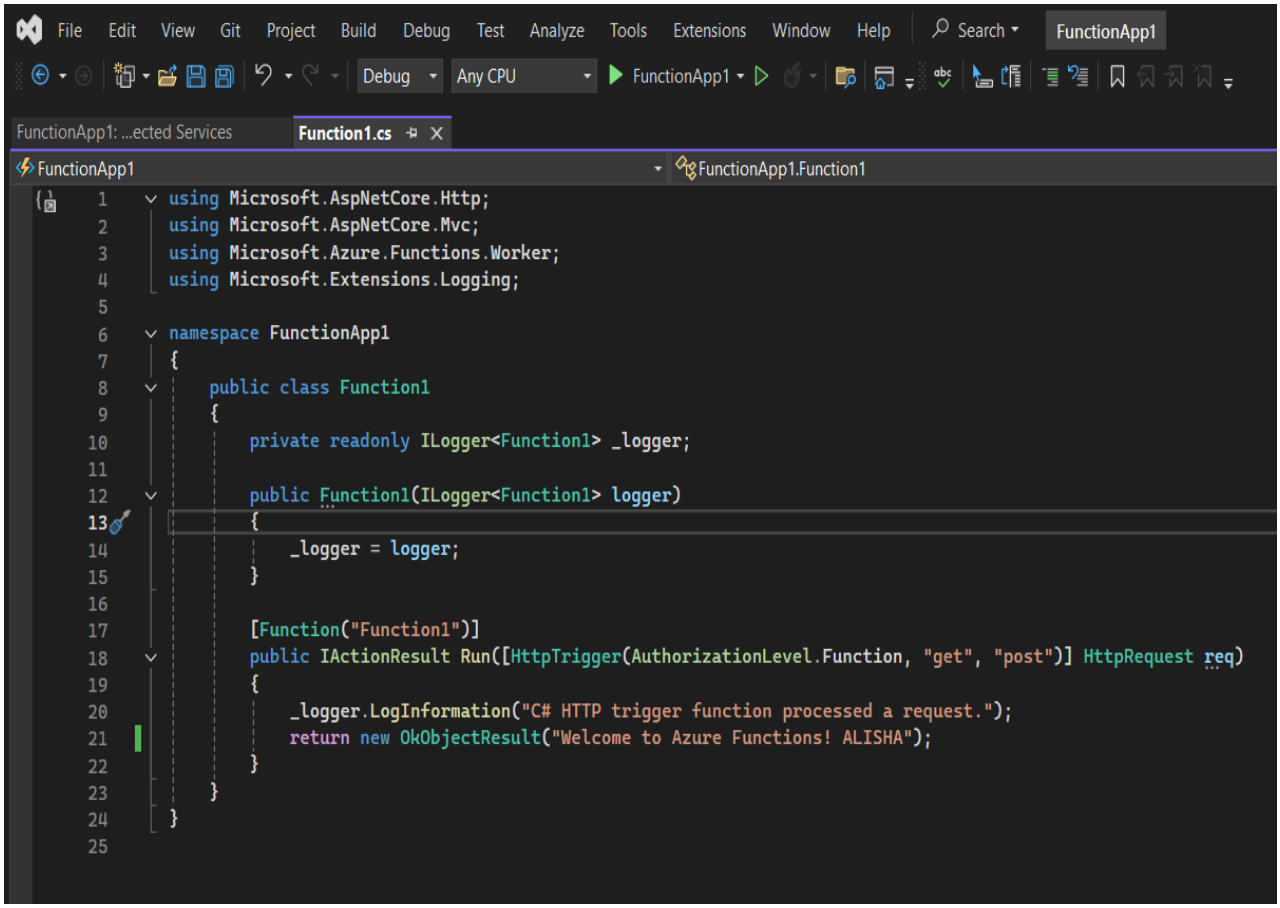
Creating and Deploying an Azure Simple Function App Using .NET and Visual Studio

- Navigate to Azure Portal
- Search for **Function App**, click **Create**and **Configure.**

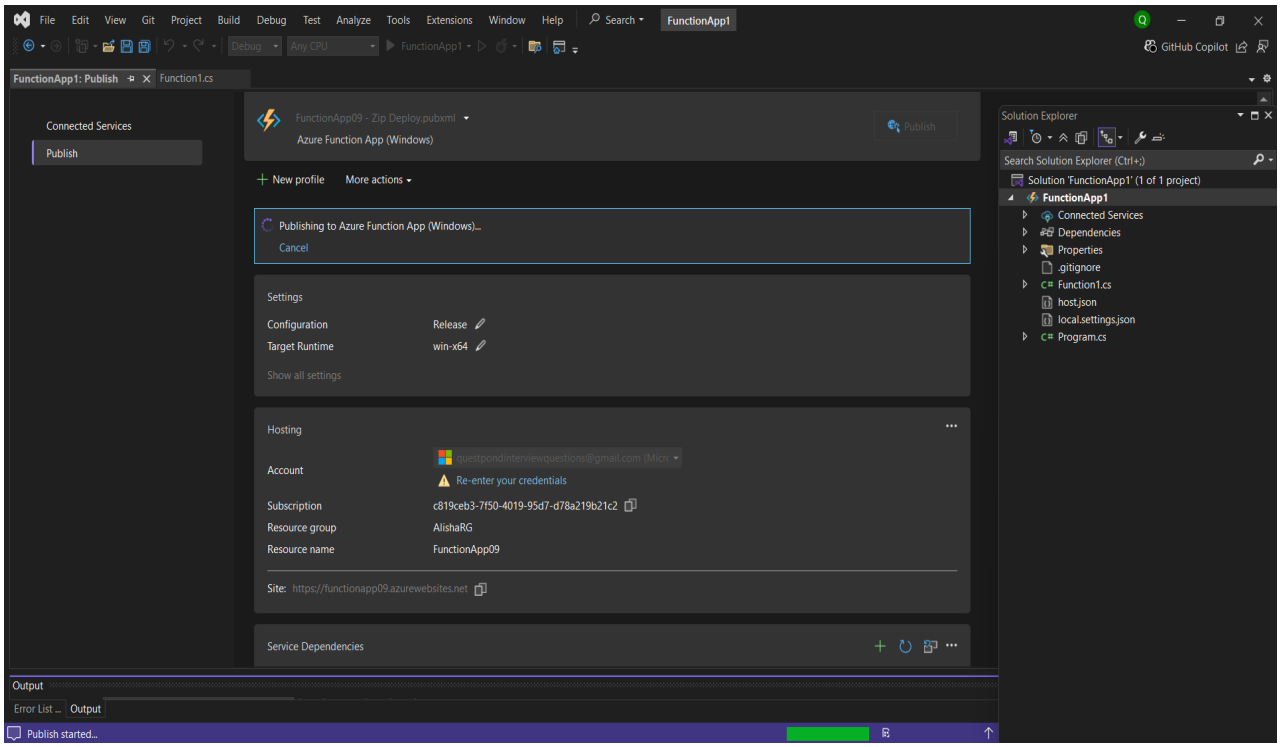


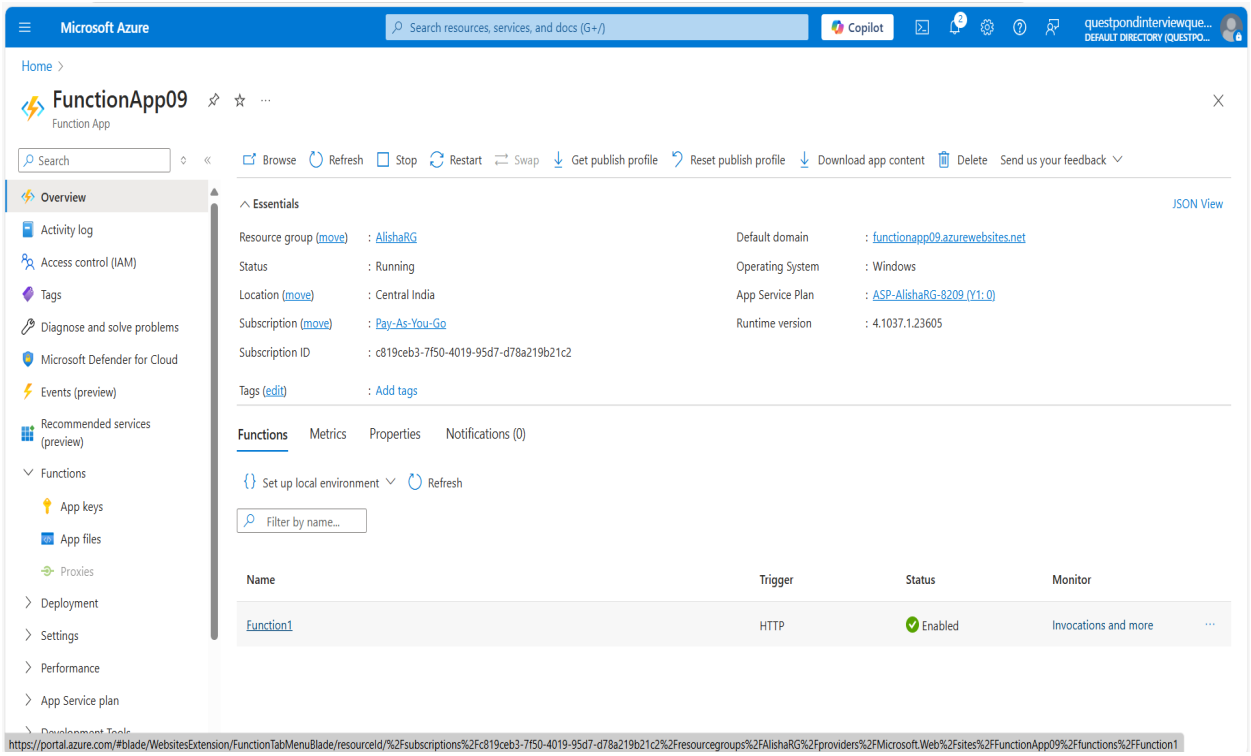
- **Open Visual Studio** and select **Create a new project**
- Choose **Azure Functions** as the project template and click **Next**



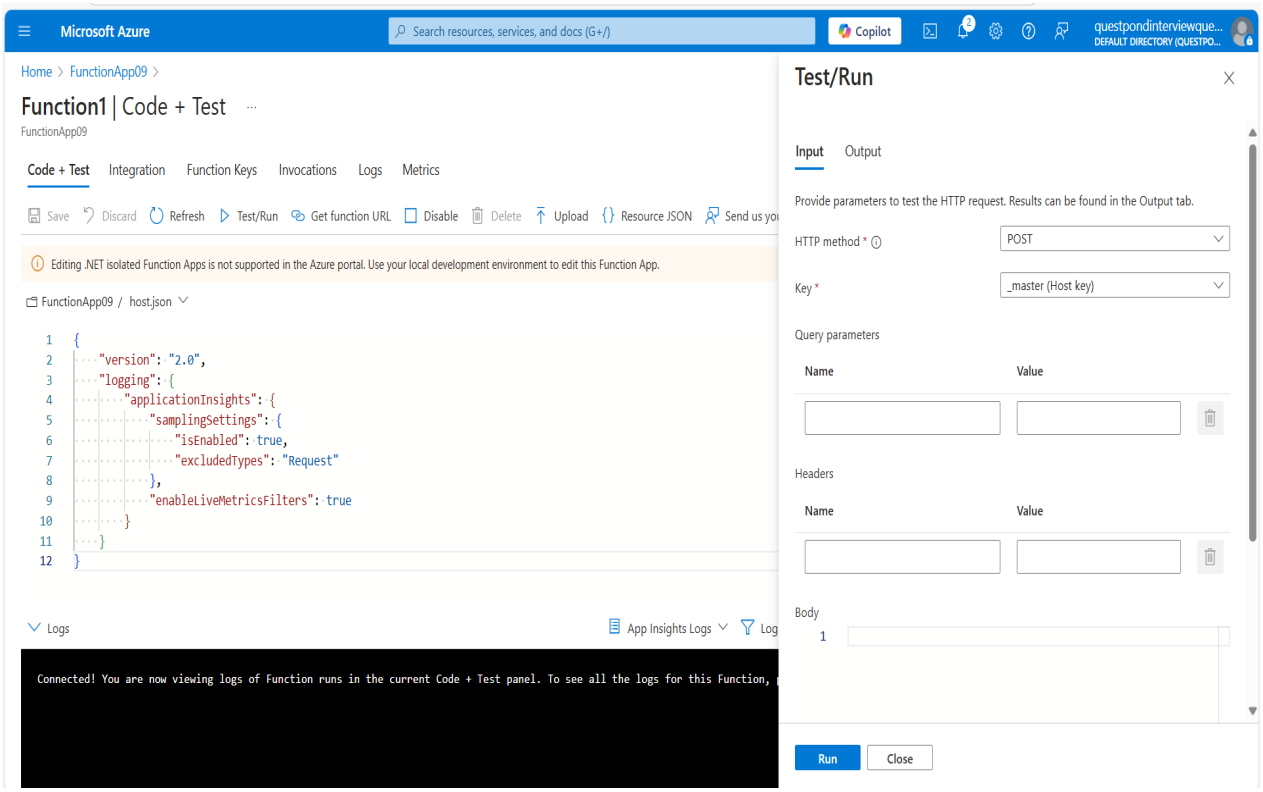


- Right-click the project in **Solution Explorer** and Click **Publish**

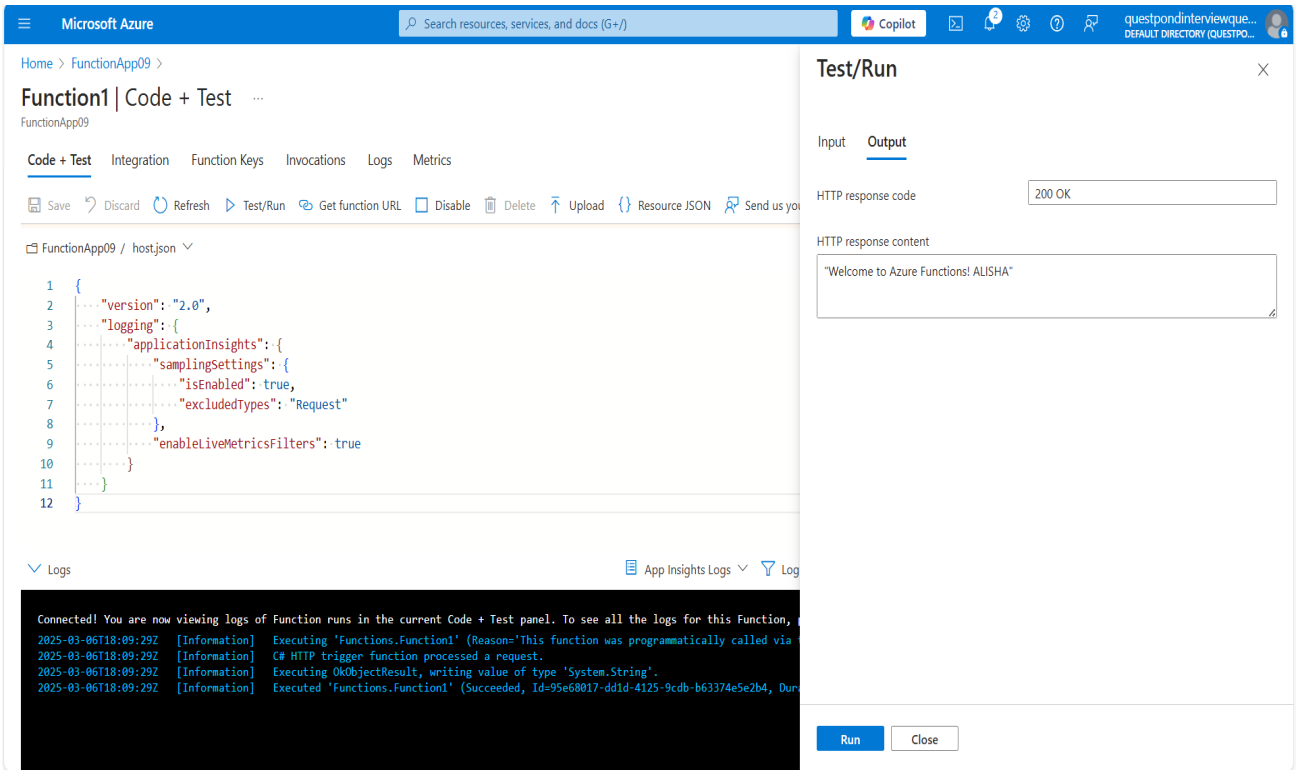




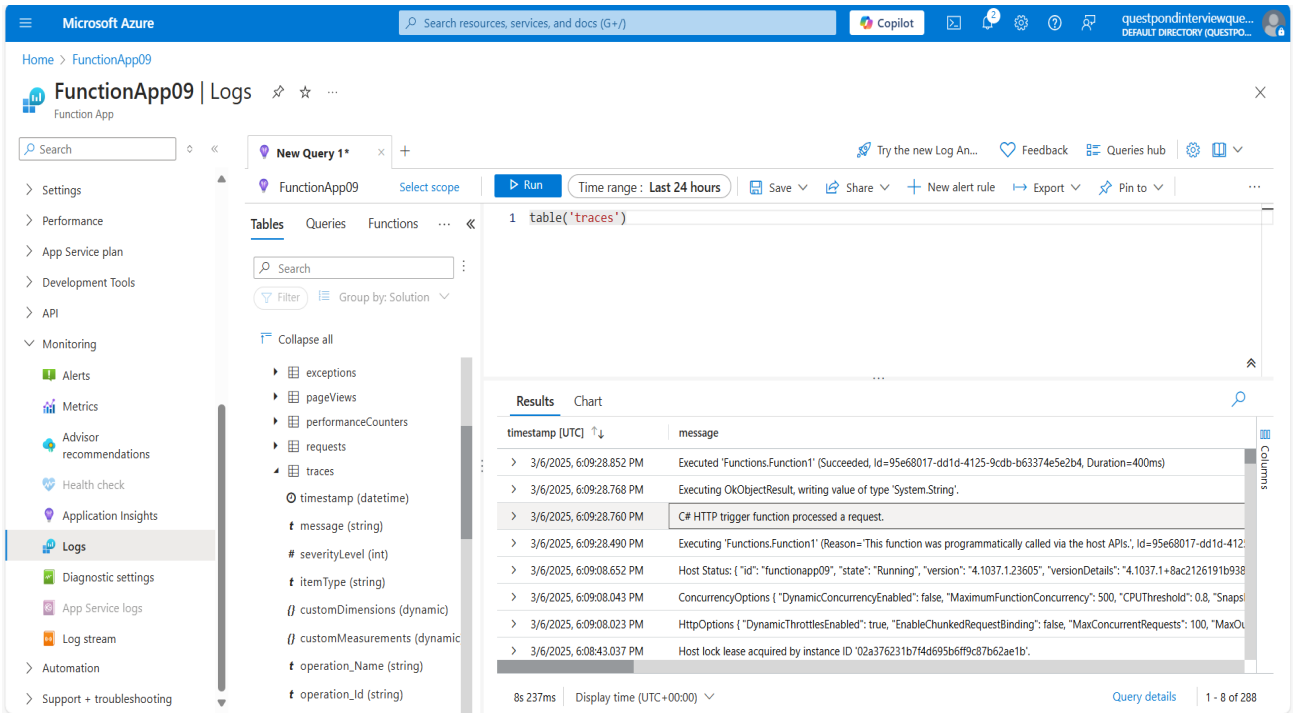
- Navigate to **Function App –(**Function1)



- Click on Run to get Output:

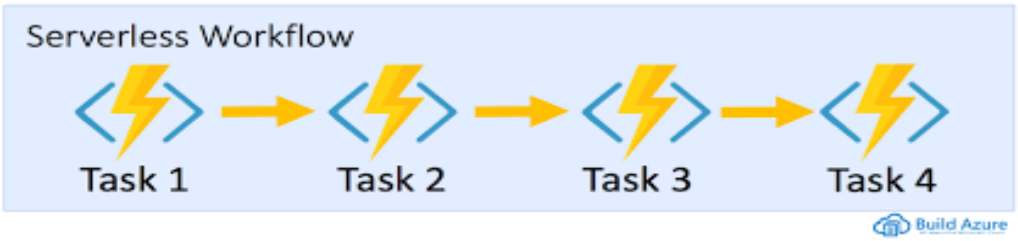


- Use **Azure Monitor** to track execution and failures :



Durable Function Apps in Azure

Durable Functions extend Azure Functions by enabling **stateful workflows**.



Steps to Implement:

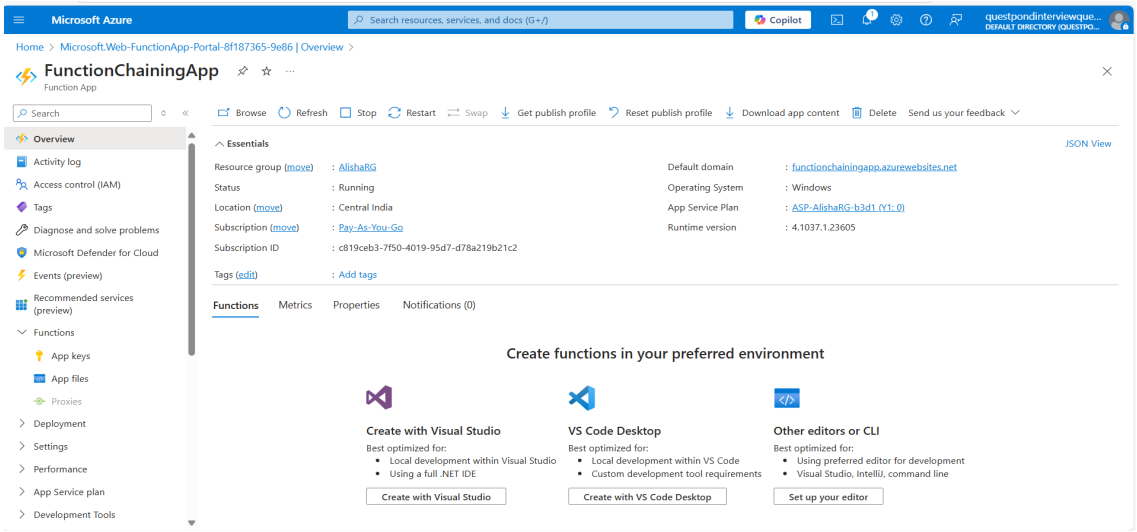
✅ **Orchestrator Function** → Executes multiple tasks **in given sequence and maintain state of functions.**

✅ **Activity Function** → Performs the actual function processing **independently.**

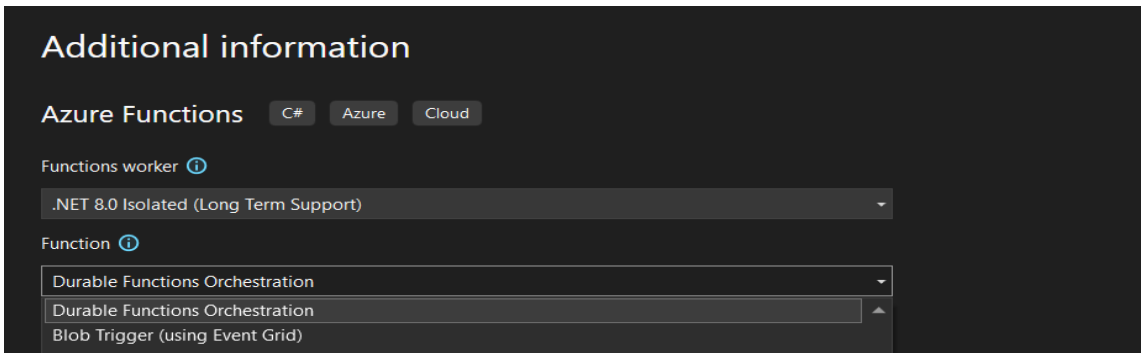
✅ **Client Function (Http)** → Triggers the **Orchestrator Function.**

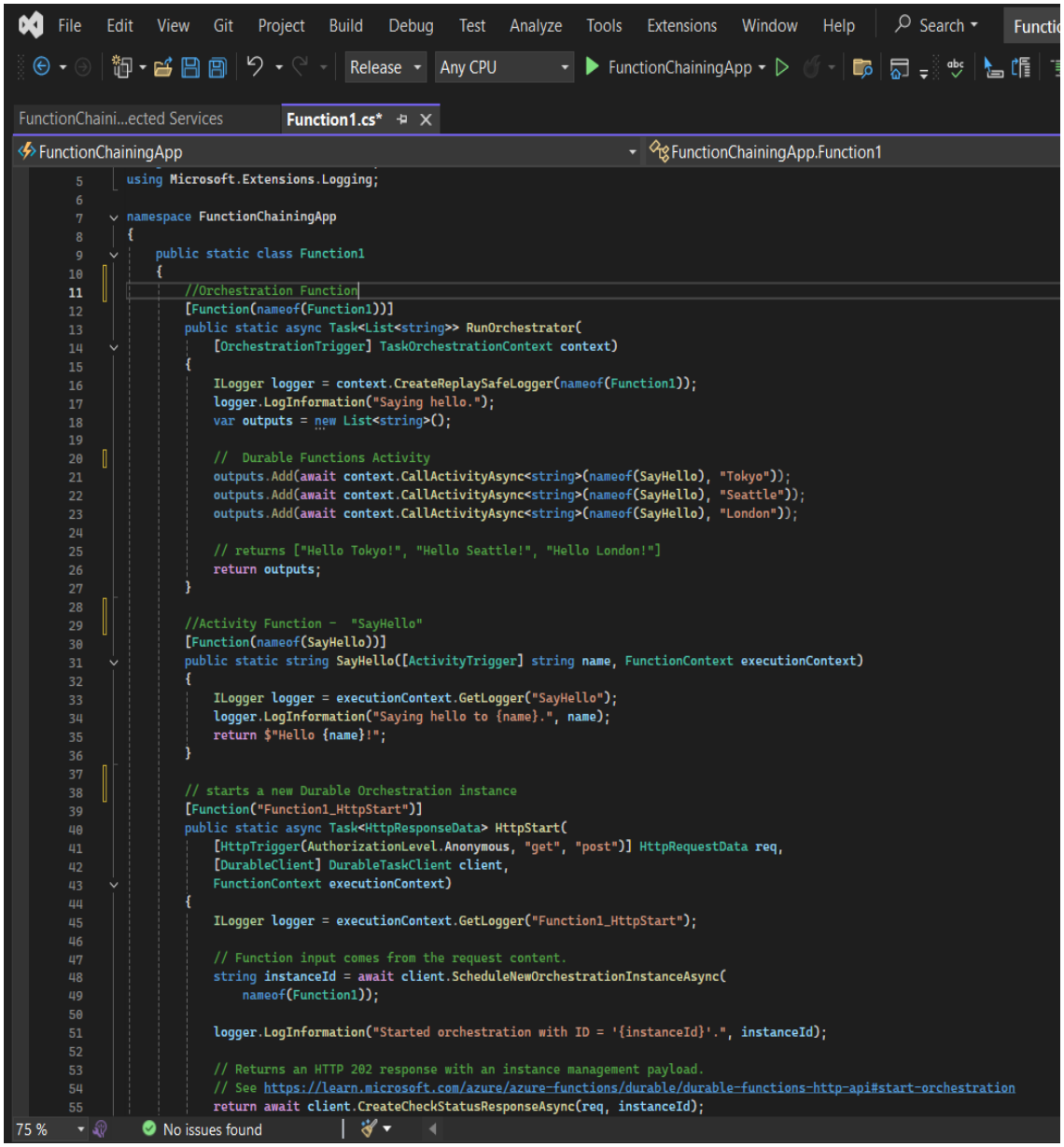
Durable Function Patterns

1. **Function Chaining(Sequential Execution) :** Create a Function app in azure portal:

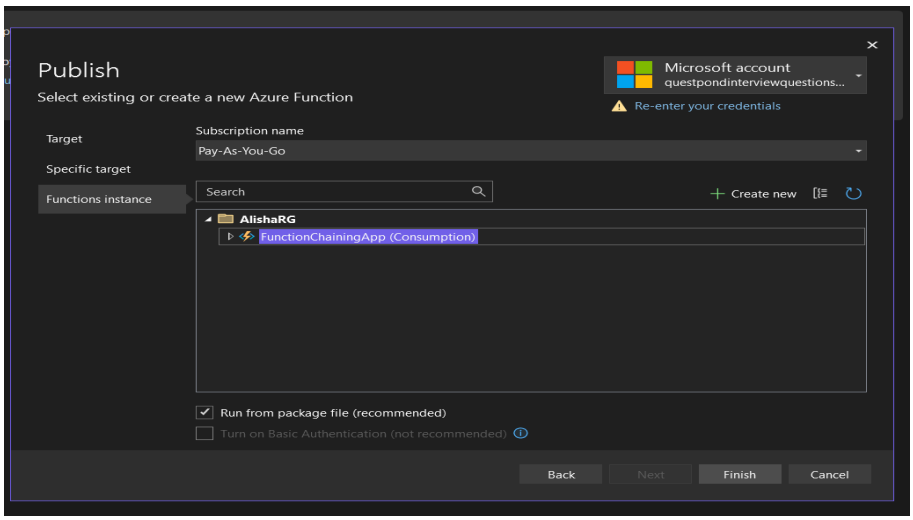


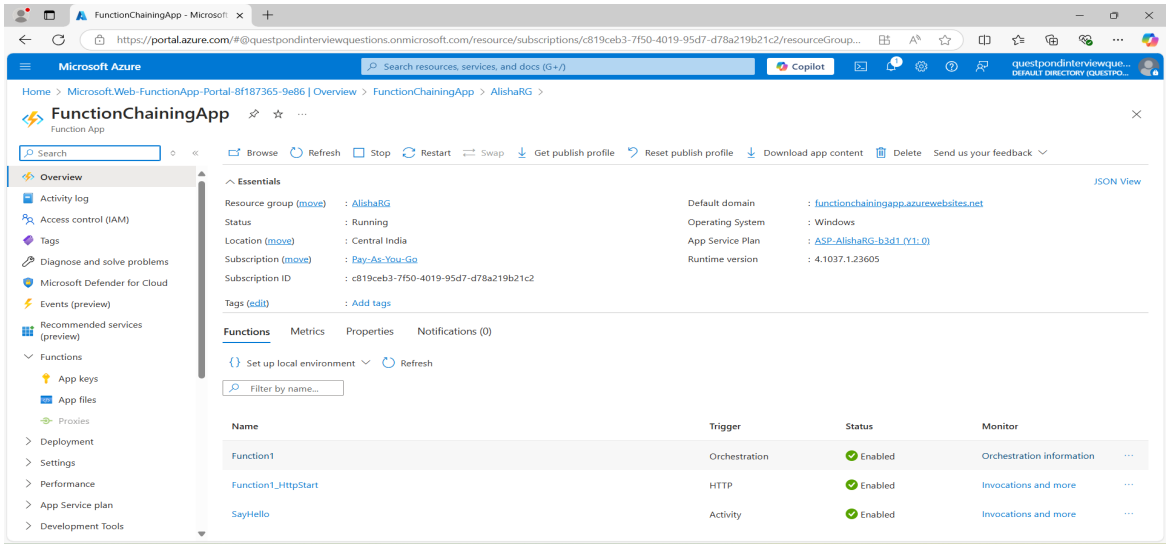
- Create a Durable orchestrating Function in Visual Studio using .Net runtime:



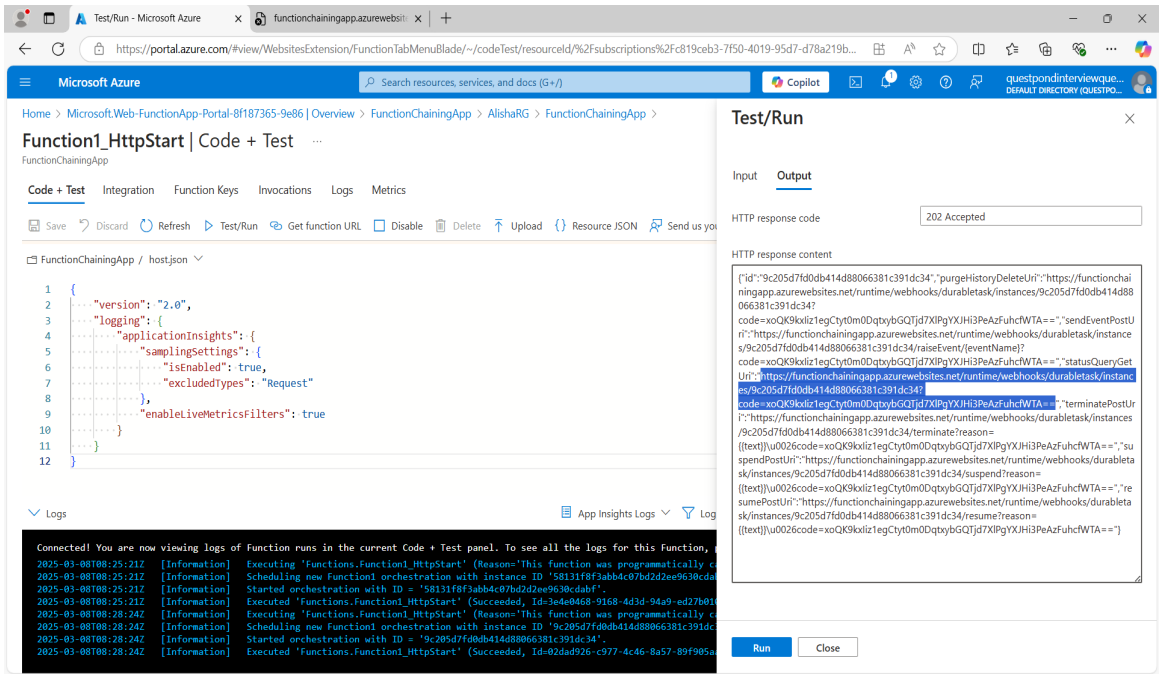


- Publish selected Function app on azure :

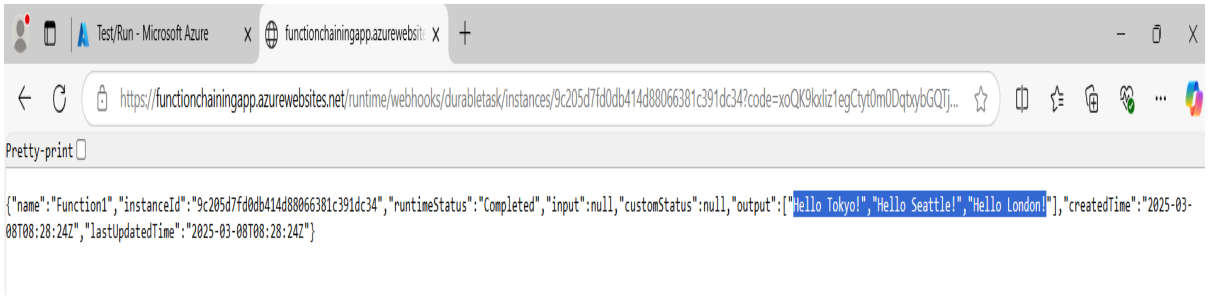




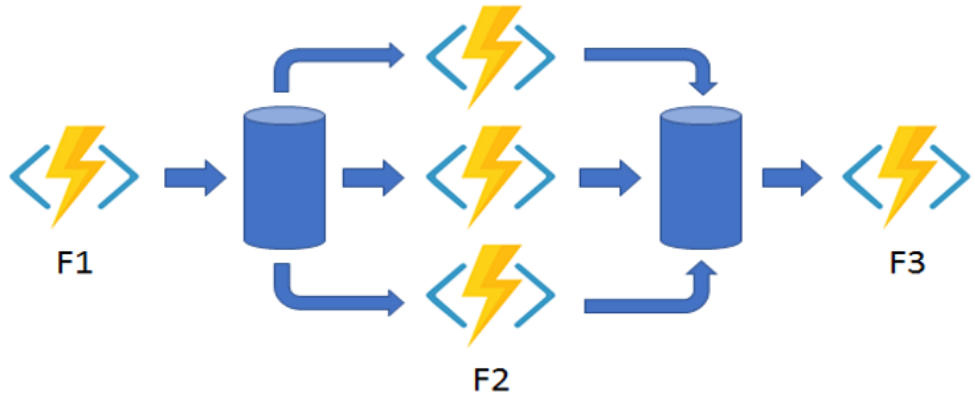
- Navigate to Function1_HttpStart and Test&Run the code:



- Run the URL (StatusQueryGetUri) to get output:

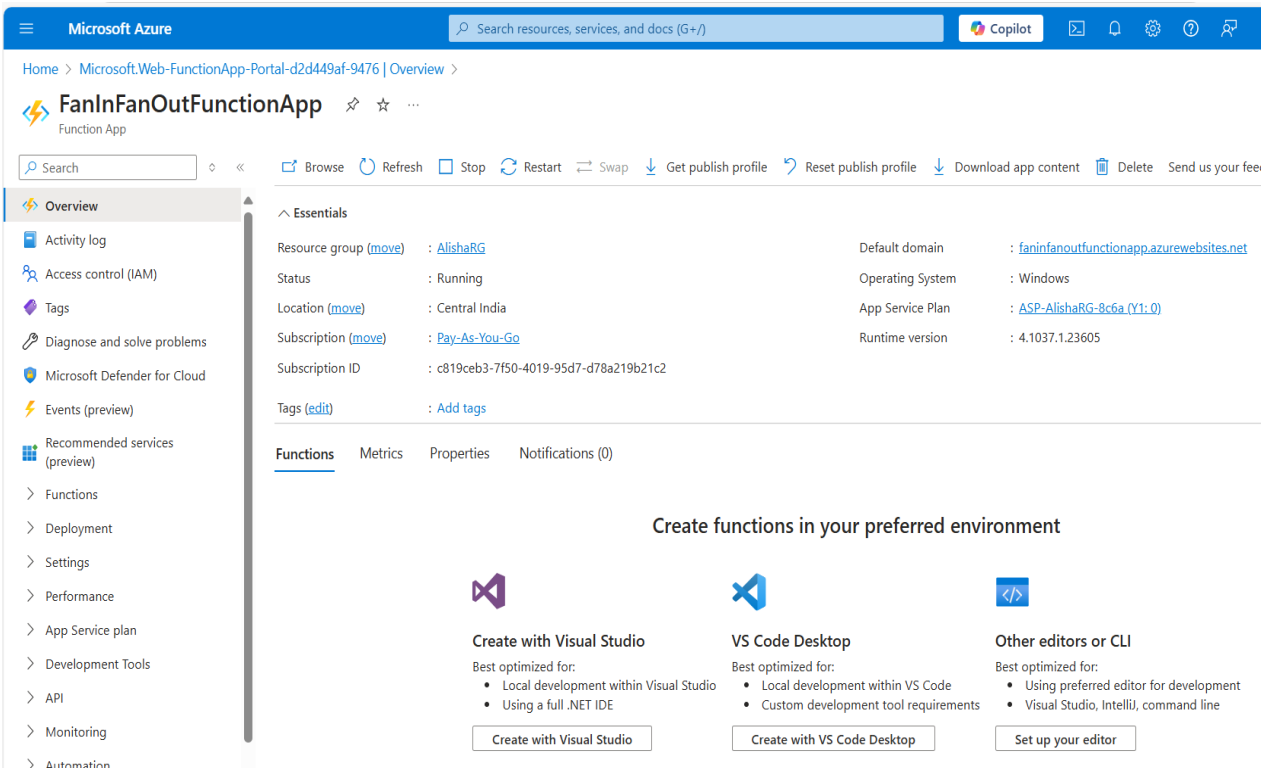


2. **Fan-out / Fan-in(Parallel Execution)**:
    - A function triggers multiple parallel executions (fan-out), and later collects their results (fan-in).

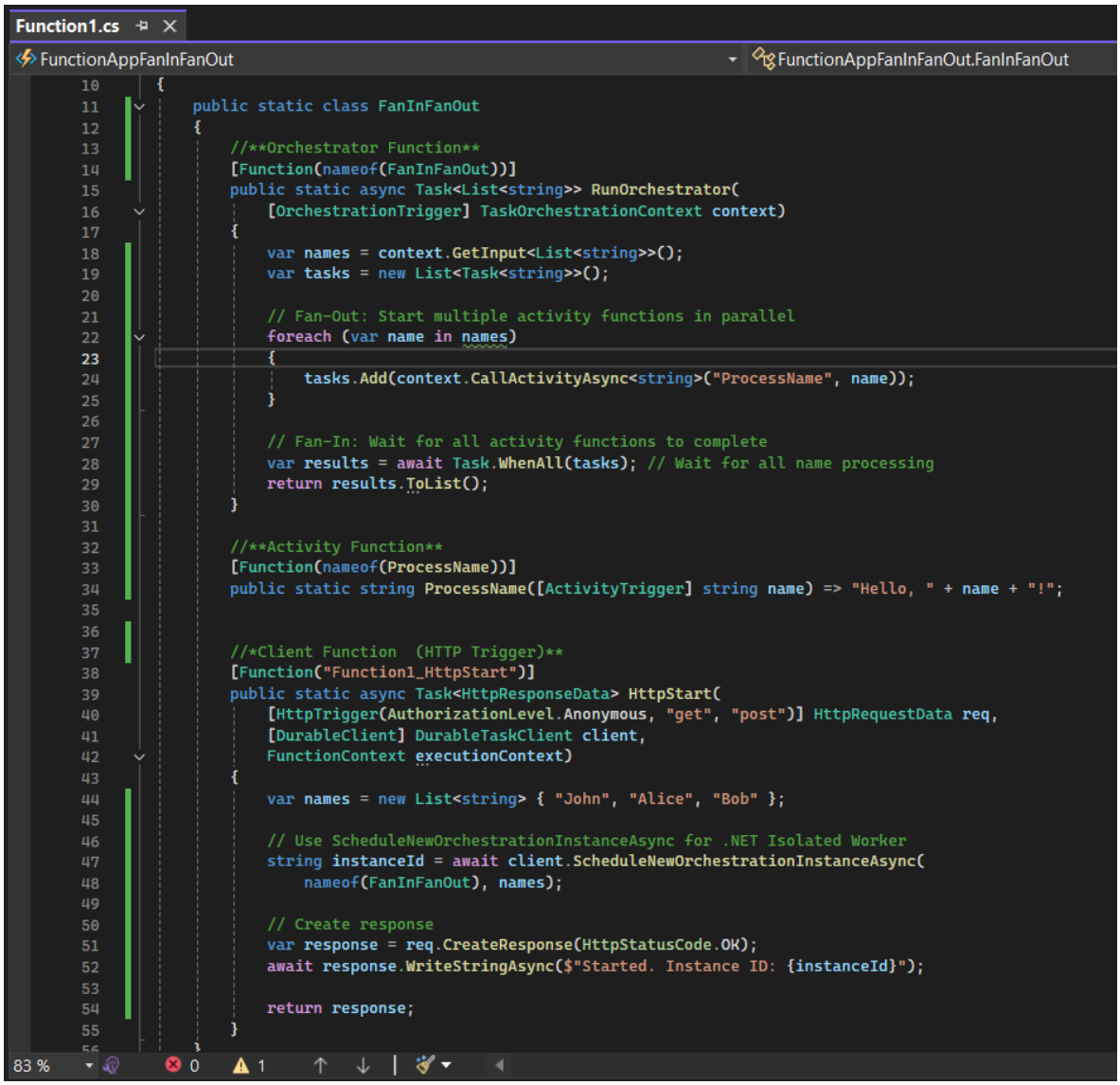


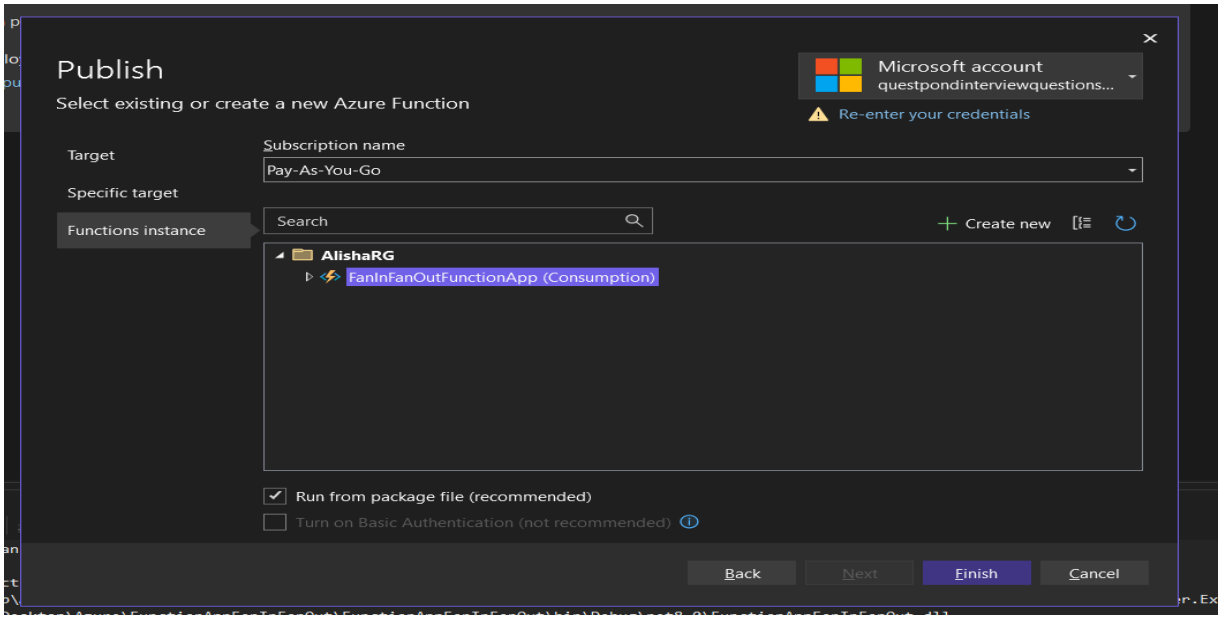
FanOut **FanIn**

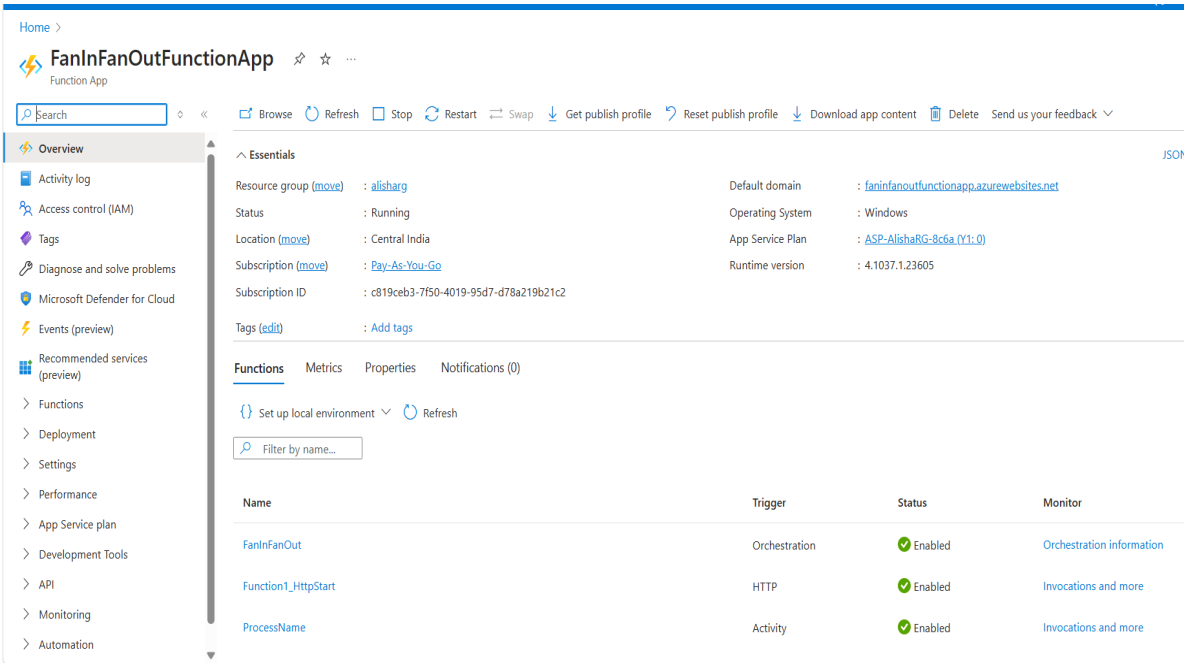
- Create Function App In Azure :



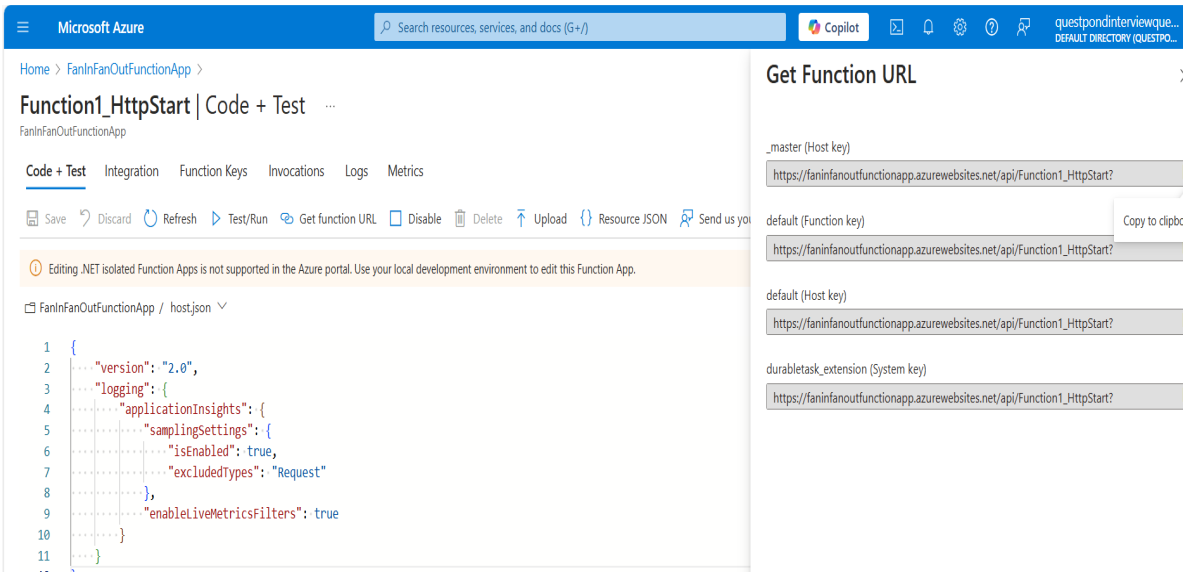
- Create Durable orchestrating Function App in .Net & Publish on Azure:







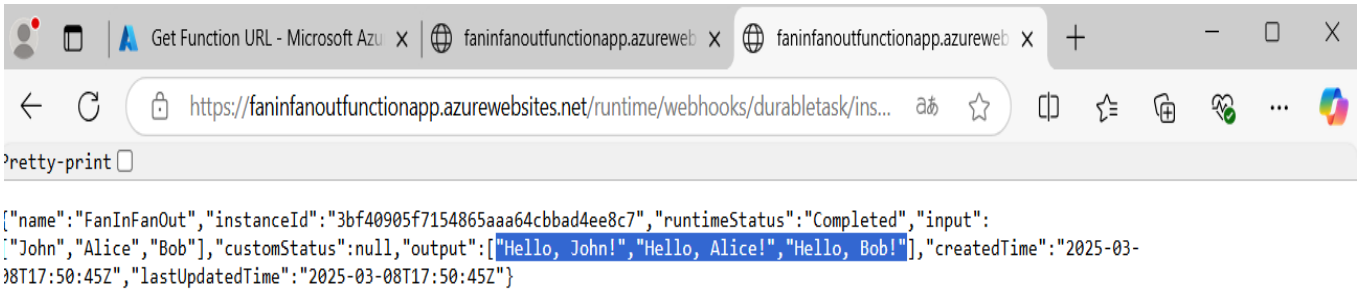
- Navigate to Function1_HttpStart(Client Function):



Test and Run Instructions:

1. Copy the **Master Host Key** and execute the function. This will return a unique **Instance ID** (e.g., 3bf40905f7154865aaa64cbbad4ee8c7).
2. Copy the **Host Function Key** (e.g., gO_FP8_8PJ7qyMMTWJa3DcHQUGdgqVC3AvEC-R-5n9z2AzFu5huhoQ==).
3. Replace the **Instance ID** and **Function Key** in the following URL and open it in a browser to get the output:

https://faninfanoutfunctionapp.azurewebsites.net/runtime/webhooks/durabletask/instances/**3bf40905f7154865aaa64cbbad4ee8c7**?code=**gO_FP8_8PJ7qyMMTWJa3DcHQUGdgqVC3AvEC-R-5n9z2AzFu5huhoQ==**



- Use **Monitor** to track execution and failures: