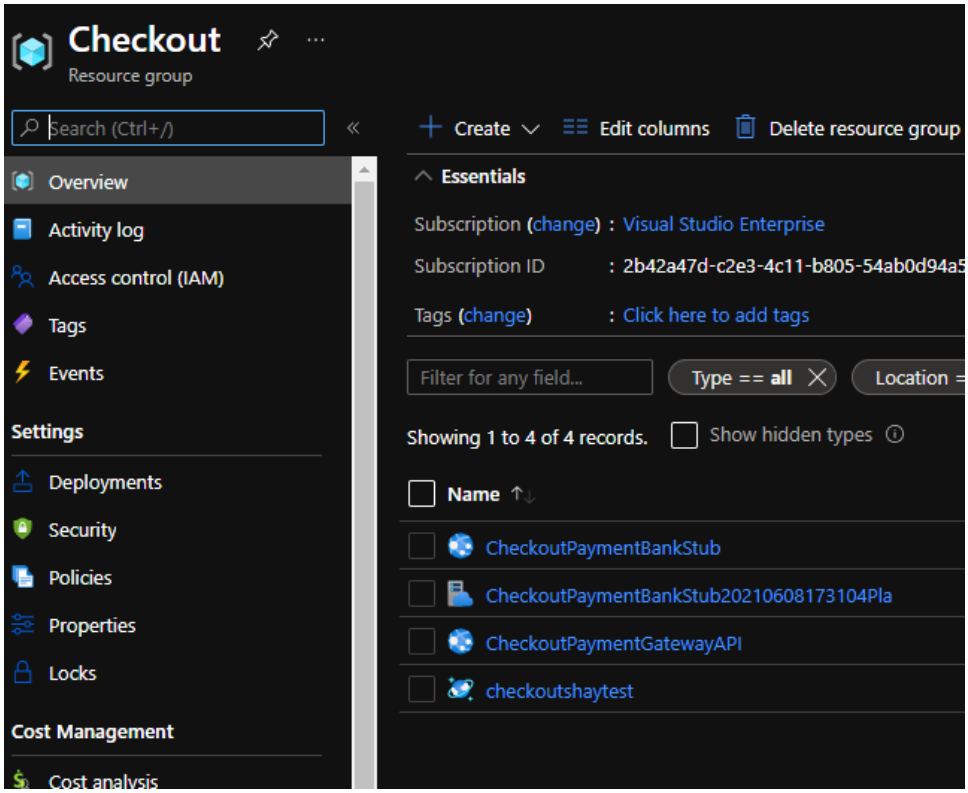
Shahzad Emambaccus Payment Gateway Checkout Tests

Technologies used:

- Cosmos DB
- Azure app services
- Azure hosting plan

The image shown below is a resource group of the services deployed in Azure. There are two apps' services one that holds the API itself and the second one holds the stub for mimicking bank response.



Example API Call without running locally:

Make Payment Endpoint:
https://checkoutpaymentgatewayapi.azurewebsites.net/Payment/ProcessPayment?CardNumber=1111111111111111&NameOnCard=wqeq&Expiry=02%2F21&Amount=213&Currency=gbp&Cvv=123&postcode=n8djs

Get Payment Endpoint:
https://checkoutpaymentgatewayapi.azurewebsites.net/Payment/GetPaymentDetails?identifer=258b4708-289c-4c6a-b885-27ddb188f684

Bank Stub:

Within the bank stub it returns either a successful or unsuccessful response dependant on a random number this is to generate a few unsuccessful bank transactions. The bank stub also returns the unique identifier.

Assumptions made:

- The Gateway API makes a call to the Bank API, if the bank does not respond or throw an error then we do not save the response in the database.
- The fields that are needed for a payment are: name on card, card number, expiry date, cvv, post code, currency, amount and identifier. The identifier is used to identify the purchase in the other end point for the API.
- Card number is 14 digits long.
- There is a maximum transaction amount.
- Post code is 6 characters long.
- Added a health check not wrong for deployment.
- Since there were no acceptance tests, I created wrappers for dependencies so that classes can be unit tested.
- All object models have been created in a separate project but it within the solution called contracts this could be used to create an SDK and used in other projects.
- The bank creates the unique identifier.

Other Notes:

- Using appsettings to store the connection string to the bank, this could be swapped out at for a productionized bank URL.
- Using dependency injection for interfaces.
- Using nunit for unit test.
- Using Polly retry to retry calling the bank API in case there's an error.