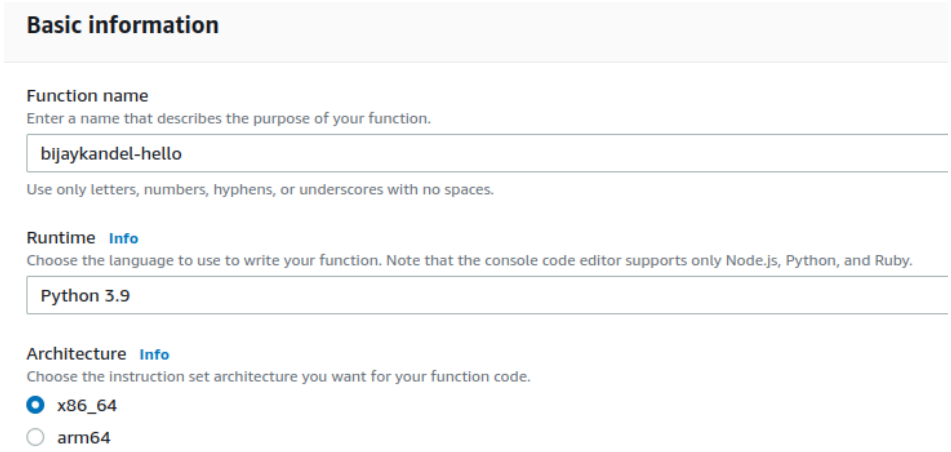
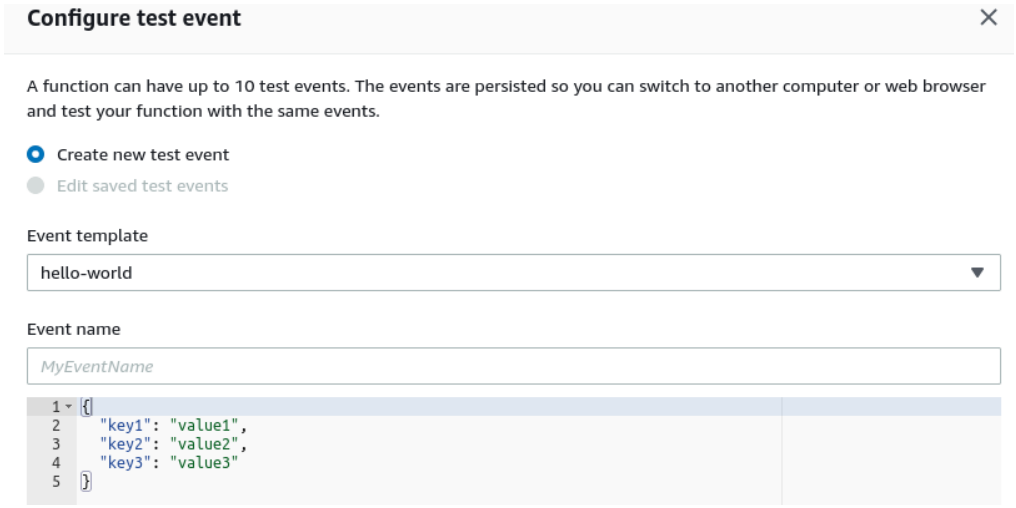
- Create two Lambda Functions
- First Lambda function returns 200 Response as {“Hello”: “Default”}
- Second Lambda function returns 200 Response as {“Hello”: “{Dynamic route name}”}
- Configure API Gateway with that hits first lambda function on / and the second lambda function on /*

Two lambda functions were created for this assignment:

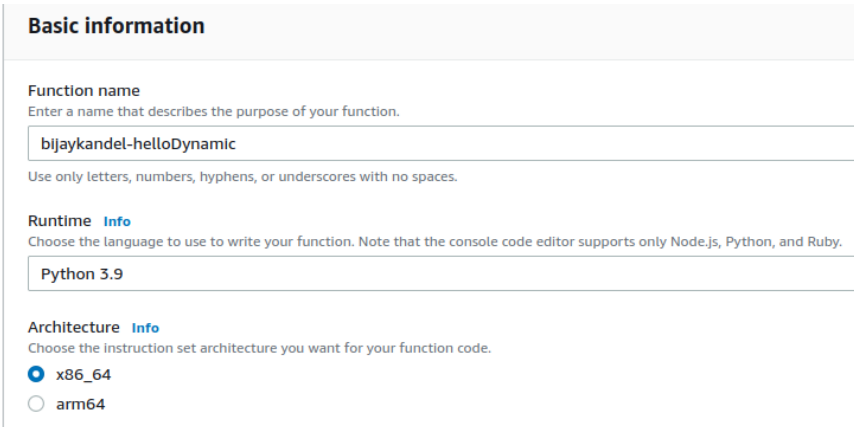
First one is bijaykandel-hello



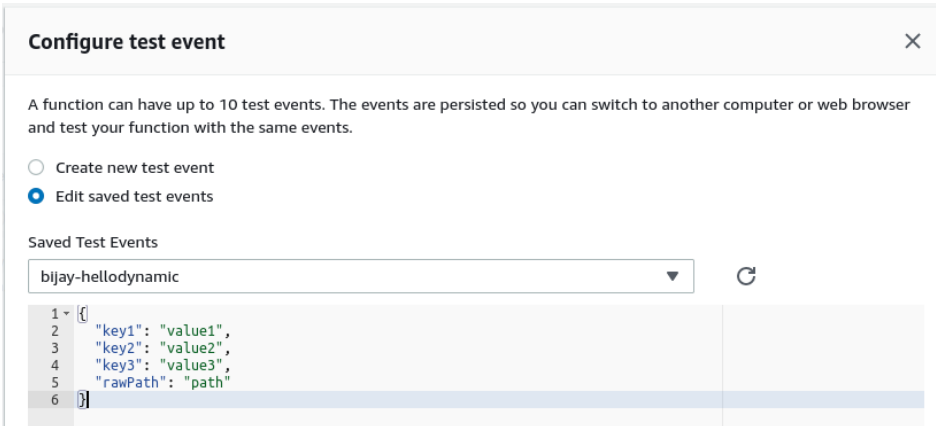
And its test event is configured as default.



The second lambda function is named as bijaykandel-helloDynamic



And its test event is configured as follows: (“rawPath” option is added in the existing default document)



First lambda function is written as:

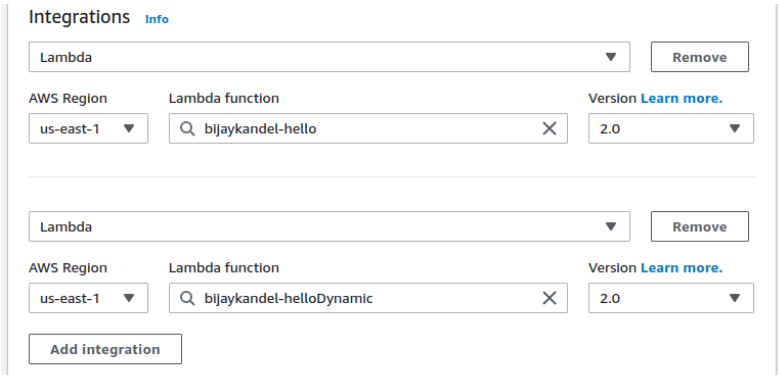
```python
import json

def lambda_handler(event, context):
    # TODO implement
    return {
        'statusCode': 200,
        'body': json.dumps({'Hello': 'General'})
    }
```

And the second lambda function is written as:

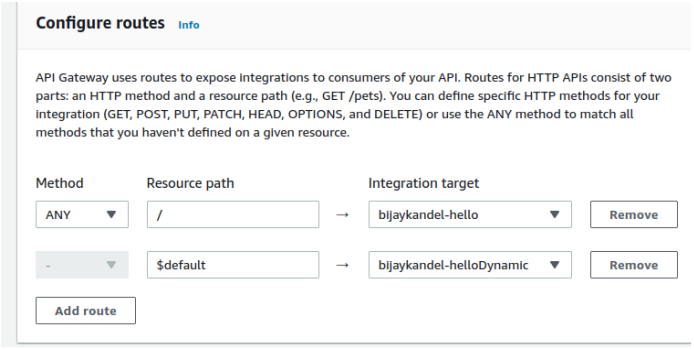
```python
import json

def lambda_handler(event, context):
    # TODO implement
    return {
        'statusCode': 200,
        'body': json.dumps(event['rawPath'])
    }
```

Now API gateway is created: **API Gateway >> Create API gateway:**

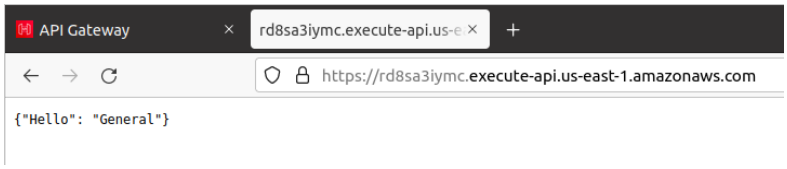
We added two integrations for two lambda functions as follows:



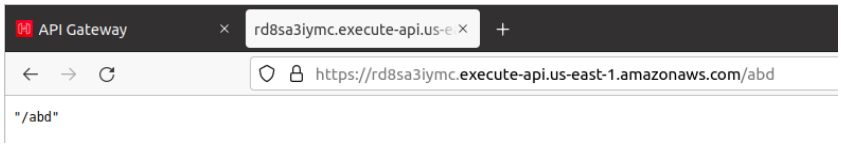
And Routes are configured so that accessing the URL triggers first lambda function and accessing URL/* triggers the second lambda function.



After creating the API gateway, we can click on the link inside our API gateway. With no path specified, the url returns the following value:



And if path is provided with url, it returns the given path as shown below:



- Create a bash script to deploy your lambda functions
- Create a bash script to deploy your react app to S3
- Integrate both these scripts with one of Jenkins, Github Actions, CircleCI or TravisCI

To deploy react app to s3, following bash script file is created:

Sudo nano reactcicd.sh

```
#to create a bucket
aws s3 mb s3://bijay-reactbucket --region us-east-1

#to enable public access into the bucket
aws s3api put-public-access-block --bucket bijay-reactbucket --public-access-block-configuration
"BlockPublicPolicy=false,BlockPublicAcls=false,IgnorePublicAcls=false,RestrictPublicBuckets=false"

aws s3api put-bucket-policy --bucket bijay-reactbucket --policy file://bucketpolicy.json

echo 'Public access enabled and Bucket objects are now set public'
echo 'inside reactapp building static files'

#to build static files of the react application
npm run build

echo 'Build completed'
echo 'uploading static files of build folder to aws via cli'

#to copy the content of build files to the bucket
aws s3 cp build s3://bijay-reactbucket --recursive

echo 'uploading static files completed'
echo 'Now you can go to s3 bucket and see the static url link in index.js object'
echo 'OR'
echo 'click on the link below to see the hosted app'
echo ' '
#to get the public link of index.html where our static build is hosted
aws s3 presign s3://bijay-reactbucket/index.html
```

And bucket policy should be updated from a json file. So we created a json file and following part is saved to the file:

Sudo nano bucketpolicy.json

```
{
    "Version": "2012-10-17",
    "Statement": [
        {
            "Sid": "PublicReadGetObject",
            "Effect": "Allow",
            "Principal": "*",
            "Action": "s3:GetObject",
            "Resource": "arn:aws:s3:::bijay-reactbucket/*"
        }
    ]
}
```

Making the script executable: ***sudo chmod +x reactcicd.sh***

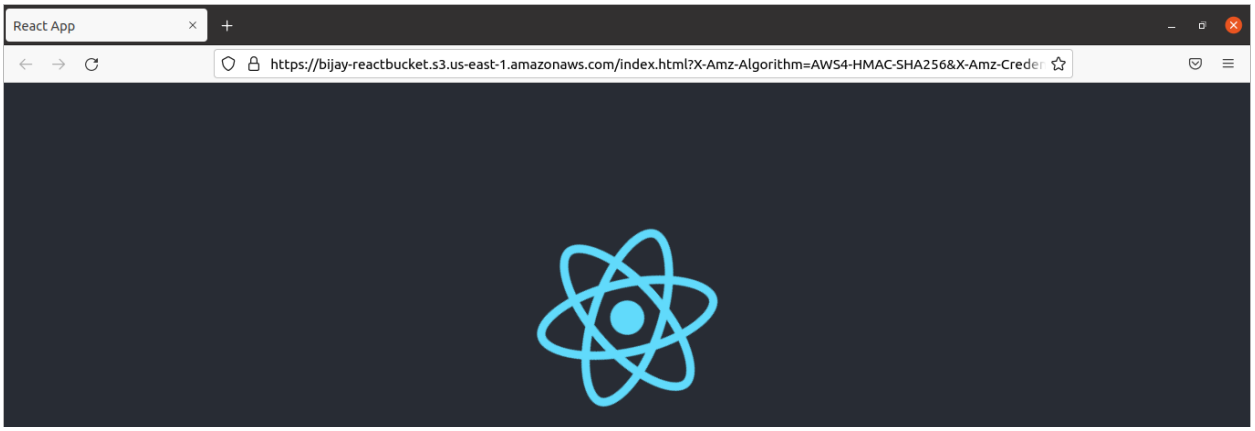
Running the script file with command: ***./reactcicd.sh***

```
bj@batman:~/react/react-bijay$ nano reactcicd.sh
bj@batman:~/react/react-bijay$ ./reactcicd.sh
make_bucket: bijay-reactbucket
Public access enabled and Bucket objects are now set public
inside reactapp building static files

> react-bijay@0.1.0 build /home/bj/react/react-bijay
> react-scripts build

Creating an optimized production build...
Compiled successfully.
```

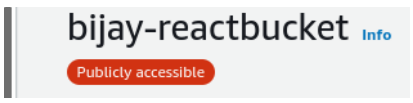
After uploading the static files, we can get the link of index.html file as shown:

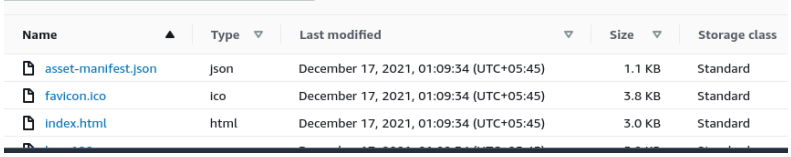
```
uploading static files completed
Now you can go to s3 bucket and see the static url link in index.js object
OR
click on the link below to see the hosted app

https://bijay-reactbucket.s3.us-east-1.amazonaws.com/index.html?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=AKIA52BEGI3BCCP6PEYC%2F20211216%2Fus
-east-1%2Fs3%2Faws4_request&X-Amz-Date=20211216T193634Z&X-Amz-Expires=3600&X-Amz-SignedHeaders=host&X-Amz-Signature=cb4dff90ed3d579bd0c800001658e71003
b2380cb440e069ffa680b68c71bb7c
```

When we go to the link, we can see our page being hosted statically from s3.



We can also see the bucket being publicly accessible and also the files uploaded in our s3 console.





Name	Type	Last modified	Size	Storage class
asset-manifest.json	json	December 17, 2021, 01:09:34 (UTC+05:45)	1.1 KB	Standard
favicon.ico	ico	December 17, 2021, 01:09:34 (UTC+05:45)	3.8 KB	Standard
index.html	html	December 17, 2021, 01:09:34 (UTC+05:45)	3.0 KB	Standard