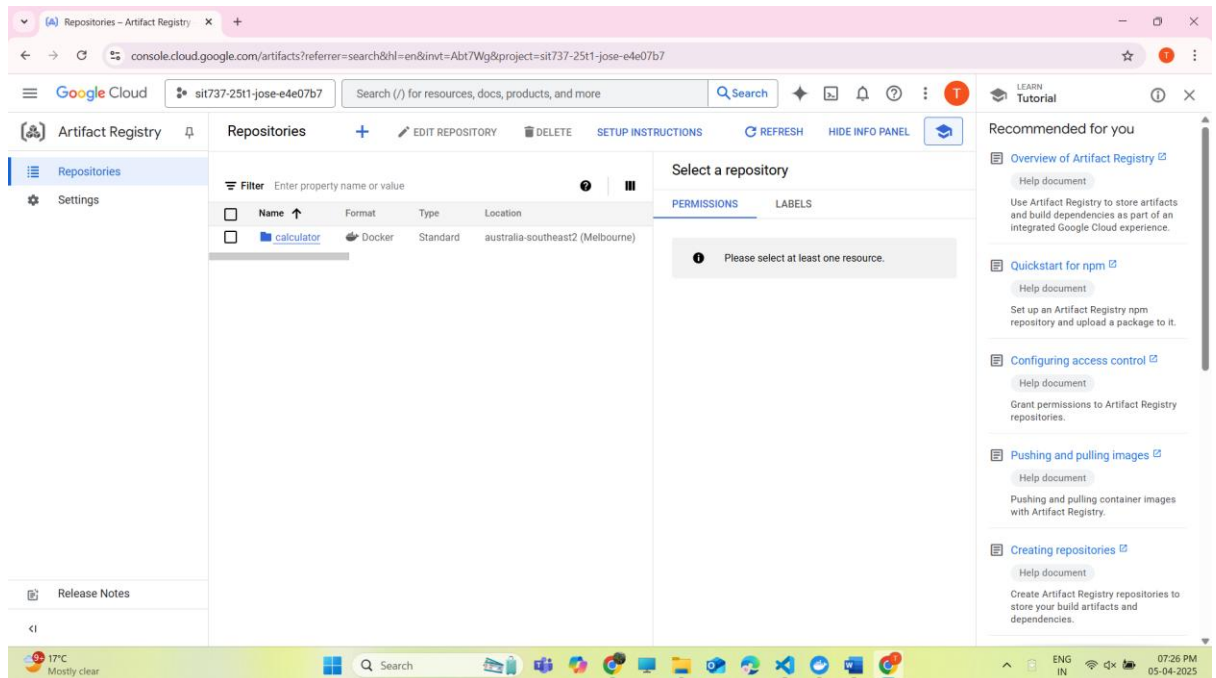
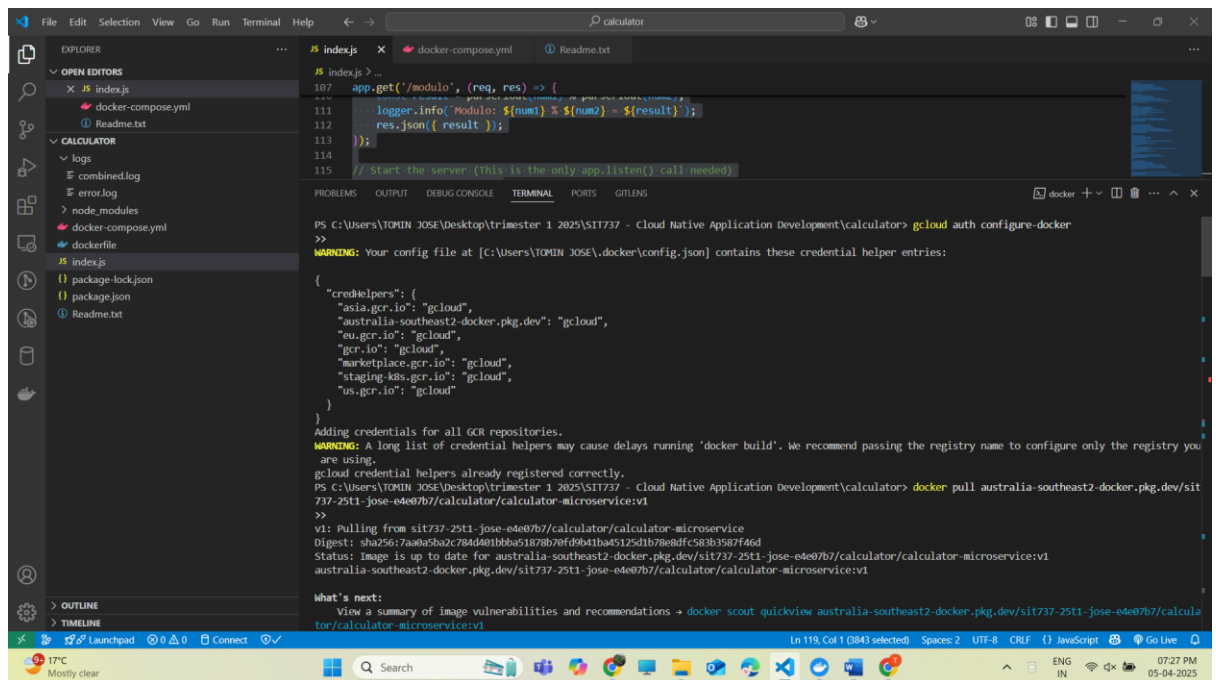


Repo: <https://github.com/TOMINJOSE88/-sit737-2025-prac5d.git>

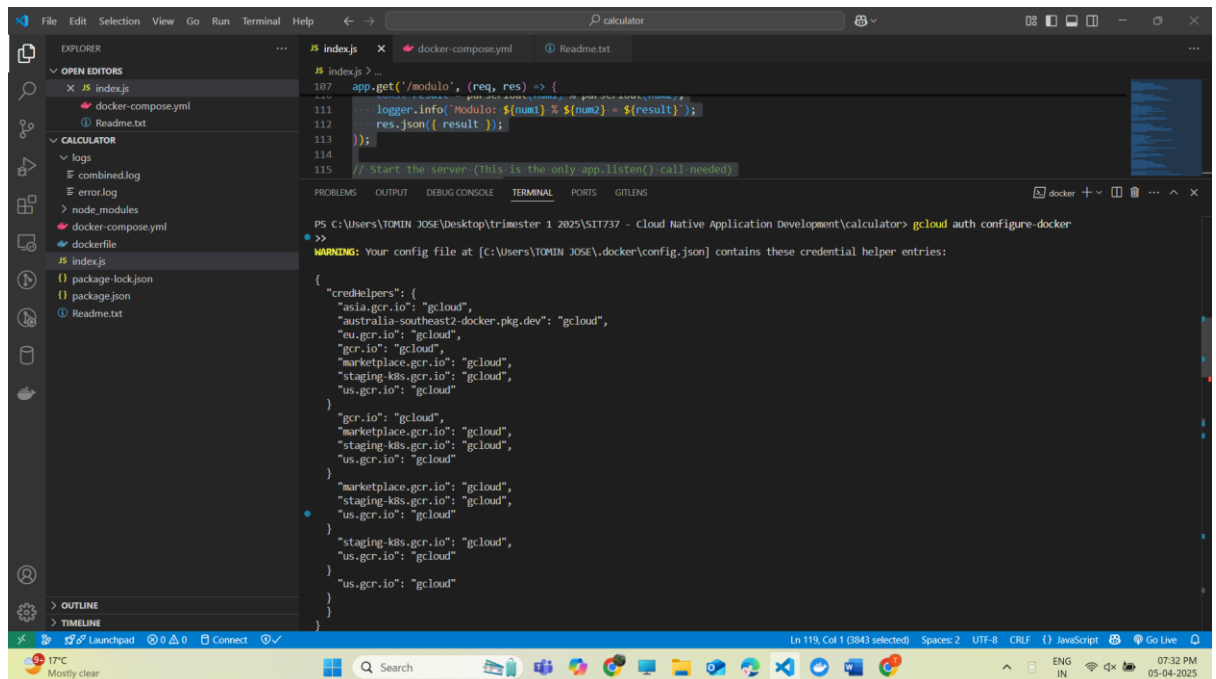
1. Create your own private container registry on google cloud. You only need to do this the first time we publish an image. Later, when publish new versions of the image and images for other microservices, you can simply reuse this same registry.



2. Before publishing, you must authenticate with the registry using the docker



3. login command.



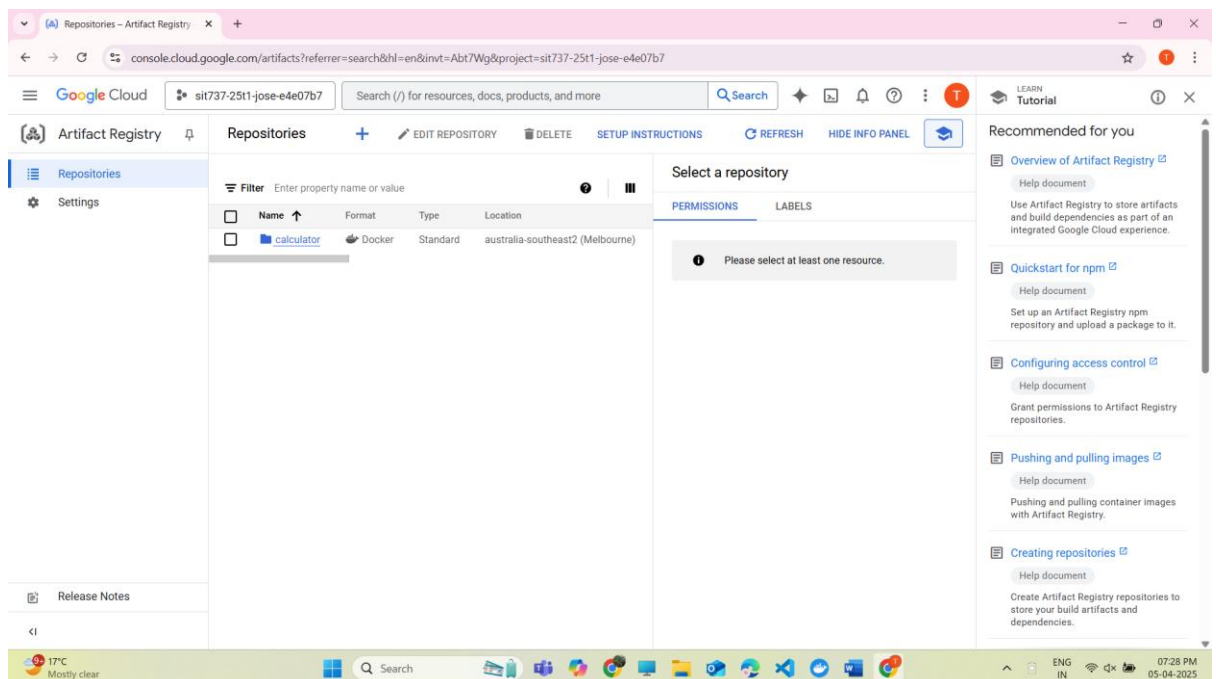
The screenshot shows a Visual Studio Code editor with a project named 'calculator'. The Explorer sidebar on the left shows the file structure: 'index.js', 'docker-compose.yml', 'Readme.txt', 'logs', 'combined.log', 'error.log', 'node_modules', 'docker-compose.yml', 'dockerfile', 'package-lock.json', and 'package.json'. The main editor displays 'index.js' with the following code:

```
107 app.get('/module', (req, res) => {  
108   // ...  
111   logger.info('Module: ${num1} * ${num2} = ${result}');  
112   res.json({ result });  
113 });  
114  
115 // Start the server (this is the only app.listen() call needed)
```

The TERMINAL panel at the bottom shows the command prompt for a PowerShell session. The user has run 'gcloud auth configure-docker', which resulted in a warning about credential helper entries in the config file and a JSON output:

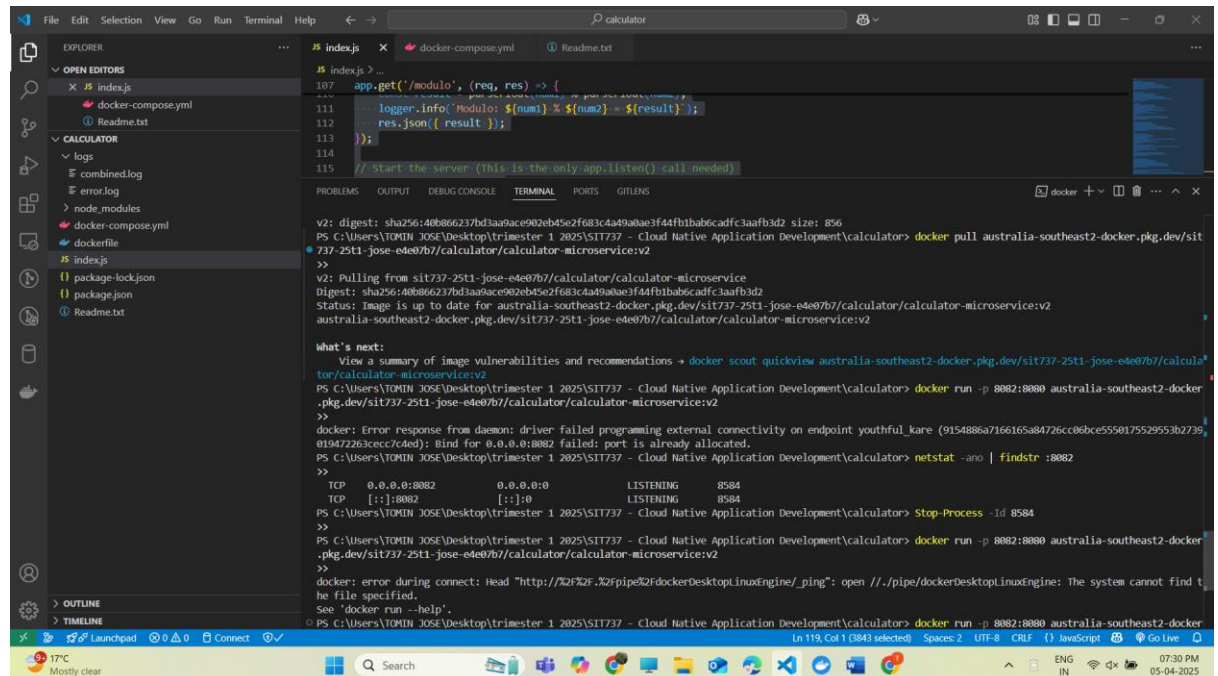
```
PS C:\Users\TOMIN JOSE\Desktop\trimester 1 2025\SIIT737 - Cloud Native Application Development\calculator> gcloud auth configure-docker  
WARNING: Your config file at [c:\Users\TOMIN JOSE\.docker\config.json] contains these credential helper entries:  
{  
  "credHelpers": {  
    "asia.gcr.io": "gcloud",  
    "australia-southeast2-docker.pkg.dev": "gcloud",  
    "eu.gcr.io": "gcloud",  
    "gcr.io": "gcloud",  
    "marketplace.gcr.io": "gcloud",  
    "staging-k8s.gcr.io": "gcloud",  
    "us.gcr.io": "gcloud"  
  },  
  "gcr.io": "gcloud",  
  "marketplace.gcr.io": "gcloud",  
  "staging-k8s.gcr.io": "gcloud",  
  "us.gcr.io": "gcloud"  
},  
"marketplace.gcr.io": "gcloud",  
"staging-k8s.gcr.io": "gcloud",  
"us.gcr.io": "gcloud",  
"staging-k8s.gcr.io": "gcloud",  
"us.gcr.io": "gcloud",  
"us.gcr.io": "gcloud"
```

4. Use the docker push command to upload the image to the registry. (This is the step that actually publishes our microservice.)



5. Use docker run again to check that it can boot your microservice from the published image.

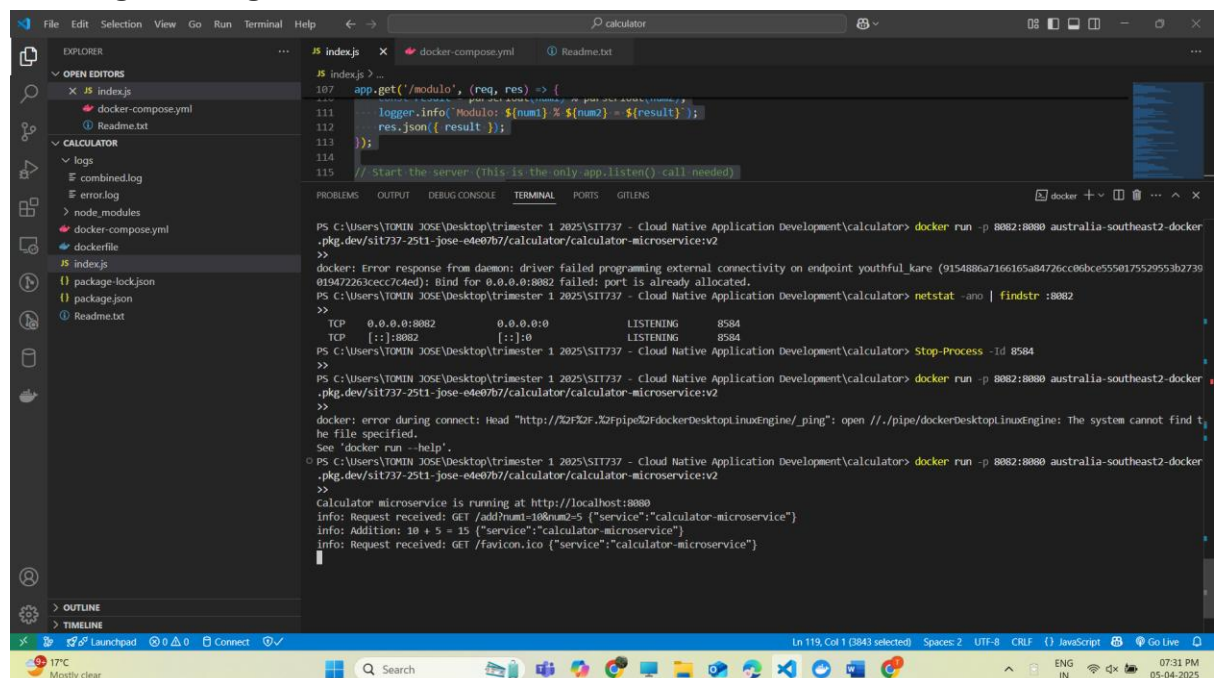
Pulling the image from cloud:



```
PS C:\Users\TOMIN JOSE\Desktop\trimester 1 2025\SIT737 - Cloud Native Application Development\calculator> docker pull australia-southeast2-docker.pkg.dev/sit737-25t1-jose-e4e07b7/calculator-microservice:v2
v2: Pulling from sit737-25t1-jose-e4e07b7/calculator/calculator-microservice
Digest: sha256:40b866237bd3aa9ace902eb45e2f683c4a49a8ae3f44fb1bab6cadfc3aafb3d2
Status: Image is up to date for australia-southeast2-docker.pkg.dev/sit737-25t1-jose-e4e07b7/calculator/calculator-microservice:v2
australia-southeast2-docker.pkg.dev/sit737-25t1-jose-e4e07b7/calculator/calculator-microservice:v2

What's next:
View a summary of image vulnerabilities and recommendations > docker scout quickview australia-southeast2-docker.pkg.dev/sit737-25t1-jose-e4e07b7/calculator/calculator-microservice:v2
PS C:\Users\TOMIN JOSE\Desktop\trimester 1 2025\SIT737 - Cloud Native Application Development\calculator> docker run -p 8082:8080 australia-southeast2-docker.pkg.dev/sit737-25t1-jose-e4e07b7/calculator/calculator-microservice:v2
>>
docker: Error response from daemon: driver failed programming external connectivity on endpoint youthful_kare (9154886a7166165a84726cc0bce555017529553b2739019472263ecc7c4ed): Bind for 0.0.0.0:8082 failed: port is already allocated.
PS C:\Users\TOMIN JOSE\Desktop\trimester 1 2025\SIT737 - Cloud Native Application Development\calculator> netstat -ano | findstr :8082
TCP        0.0.0.0:8082           0.0.0.0:0              LISTENING   8584
TCP        [::]:8082              [::]:0                  LISTENING   8584
PS C:\Users\TOMIN JOSE\Desktop\trimester 1 2025\SIT737 - Cloud Native Application Development\calculator> Stop-Process -ld 8584
PS C:\Users\TOMIN JOSE\Desktop\trimester 1 2025\SIT737 - Cloud Native Application Development\calculator> docker run -p 8082:8080 australia-southeast2-docker.pkg.dev/sit737-25t1-jose-e4e07b7/calculator/calculator-microservice:v2
>>
docker: error during connect: Head "http://2f2f2f.32fpipe2f2f.dockerDesktopLinuxEngine/_ping": open //.pipe/dockerDesktopLinuxEngine: The system cannot find the file specified.
See 'docker run --help'.
PS C:\Users\TOMIN JOSE\Desktop\trimester 1 2025\SIT737 - Cloud Native Application Development\calculator> docker run -p 8082:8080 australia-southeast2-docker.pkg.dev/sit737-25t1-jose-e4e07b7/calculator/calculator-microservice:v2
>>
calculator microservice is running at http://localhost:8080
info: Request received: GET /add?num1=10&num2=5 ("service":"calculator-microservice")
info: Addition: 10 + 5 = 15 ("service":"calculator-microservice")
info: Request received: GET /favicon.ico ("service":"calculator-microservice")
```

Running the image:



```
PS C:\Users\TOMIN JOSE\Desktop\trimester 1 2025\SIT737 - Cloud Native Application Development\calculator> docker run -p 8082:8080 australia-southeast2-docker.pkg.dev/sit737-25t1-jose-e4e07b7/calculator/calculator-microservice:v2
>>
docker: Error response from daemon: driver failed programming external connectivity on endpoint youthful_kare (9154886a7166165a84726cc0bce555017529553b2739019472263ecc7c4ed): Bind for 0.0.0.0:8082 failed: port is already allocated.
PS C:\Users\TOMIN JOSE\Desktop\trimester 1 2025\SIT737 - Cloud Native Application Development\calculator> netstat -ano | findstr :8082
TCP        0.0.0.0:8082           0.0.0.0:0              LISTENING   8584
TCP        [::]:8082              [::]:0                  LISTENING   8584
PS C:\Users\TOMIN JOSE\Desktop\trimester 1 2025\SIT737 - Cloud Native Application Development\calculator> Stop-Process -ld 8584
PS C:\Users\TOMIN JOSE\Desktop\trimester 1 2025\SIT737 - Cloud Native Application Development\calculator> docker run -p 8082:8080 australia-southeast2-docker.pkg.dev/sit737-25t1-jose-e4e07b7/calculator/calculator-microservice:v2
>>
calculator microservice is running at http://localhost:8080
info: Request received: GET /add?num1=10&num2=5 ("service":"calculator-microservice")
info: Addition: 10 + 5 = 15 ("service":"calculator-microservice")
info: Request received: GET /favicon.ico ("service":"calculator-microservice")
```

output:

