

# CLOUD COMPUTING

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18MCMT17 MTECH-CS

This project mainly focuses to demonstrate the deployment of a service on the cloud based environment.

The cloud environment used for deployment of my services is GOOGLE CLOUD.

Google cloud is PAAS to deploy our services into the cloud area.

Google App Engine, provided with a dashboard, we need to create a new project in Google Cloud Platform Console by creating a new account (if you have no google cloud account).

[NOTE: Check that you have enabled billing with in your account]

## **Creating a new project in gcloud:**

Console->create new project->project name/id->save.

## **Writing the service code:**

The service is implemented using a nodejs for the server side code and html for the front end.

The package.json is a file to specify the node modules we are using. Expressjs is used for the server code for our project.

The server.js is written using the express it uses the get post calls of the rest services to post and get the values parses them and calculates the BMI for the input provided and displays the results.

## **App.yaml:**

Create an app.yaml file to deploy the service in google cloud with the source folder, file provides the information about the environment and the runtime used.

```
runtime: nodejs
env: flex
```

## **BMI-LOGIC:**

BMI is the body mass index, is a measure of body size. It combines a person's weight with their height and give a value to state if a person is having a proper weight according to his/her height.

BMI formula:  $((\text{weight}/\text{height})/\text{height}) * 10000$

The units of height and weight used here are cms and kgs respectively

### **BMI of less than 18.5**

A BMI of less than 18.5 indicates that you are underweight, so you may need to put on some weight. You are recommended to ask your doctor or a dietitian for advice.

### **BMI of 18.5–24.9**

A BMI of 18.5-24.9 indicates that you are at a healthy weight for your height. By maintaining a healthy weight, you lower your risk of developing serious health problems.

### **BMI of 25–29.9**

A BMI of 25-29.9 indicates that you are slightly overweight. You may be advised to lose some weight for health reasons. You are recommended to talk to your doctor or a dietitian for advice.

### **BMI of over 30**

A BMI of over 30 indicates that you are heavily overweight. Your health may be at risk if you do not lose weight. You are recommended to talk to your doctor or a dietitian for advice.

## **Deployment:**

Steps to deploy the service

1. Install the google cloud SDK in your system.
2. Open terminal and go to source folder.
3. Run command "gcloud init".
4. Select the area where you want to deploy your service (selected south Asia here) and select the new project you created.
5. Then run the command "google app deploy".
6. Use the link to see the deployed service

## SCREENSHOTS:

1.

```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows [Version 10.0.17134.706]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\Thashu>cd Desktop\rebmi

C:\Users\Thashu\Desktop\rebmi>dir
Volume in drive C is WIN_10
Volume Serial Number is 9840-D195

Directory of C:\Users\Thashu\Desktop\rebmi

18/04/2019  08:41 PM    <DIR>          .
18/04/2019  08:41 PM    <DIR>          ..
18/04/2019  08:41 PM                25 app.yaml
18/04/2019  11:02 AM            3,410 index.html
18/04/2019  11:05 AM    <DIR>          node_modules
18/04/2019  11:02 AM           96,491 package-lock.json
18/04/2019  04:51 PM             516 package.json
18/04/2019  04:47 PM             789 server.js
               5 File(s)            101,231 bytes
               3 Dir(s)  24,259,448,832 bytes free

C:\Users\Thashu\Desktop\rebmi>gcloud init
Welcome! This command will take you through the configuration of gcloud.

Settings from your current configuration [default] are:
core:
  account: thashutasleem@gmail.com
  disable_usage_reporting: 'False'

Pick configuration to use:
[1] Re-initialize this configuration [default] with new settings
[2] Create a new configuration
Please enter your numeric choice: 1

Your current configuration has been set to: [default]

You can skip diagnostics next time by using the following flag:
  gcloud init --skip-diagnostics

Network diagnostic detects and fixes local network connection issues.
Checking network connection...done.
Reachability Check passed.
Network diagnostic passed (1/1 checks passed).
```

2

C:\WINDOWS\system32\cmd.exe

Network diagnostic detects and fixes local network connection issues.  
Checking network connection...done.  
Reachability Check passed.  
Network diagnostic passed (1/1 checks passed).

Choose the account you would like to use to perform operations for  
this configuration:

[1] thashutasleem@gmail.com  
[2] Log in with a new account  
Please enter your numeric choice: 1

You are logged in as: [thashutasleem@gmail.com].

Pick cloud project to use:

[1] active-valve-238011  
[2] arcane-ion-238014  
[3] bmi-calculation  
[4] calculatebmi  
[5] scenic-dynamo-238014  
[6] silent-grid-238010  
[7] Create a new project

Please enter numeric choice or text value (must exactly match list  
item): 3

Your current project has been set to: [bmi-calculation].

Not setting default zone/region (this feature makes it easier to use  
[gcloud compute] by setting an appropriate default value for the  
--zone and --region flag).

See <https://cloud.google.com/compute/docs/gcloud-compute> section on how to set  
default compute region and zone manually. If you would like [gcloud init] to be  
able to do this for you the next time you run it, make sure the  
Compute Engine API is enabled for your project on the  
<https://console.developers.google.com/apis> page.

Created a default .boto configuration file at [C:\Users\Thashu\.boto]. See this file and  
[<https://cloud.google.com/storage/docs/gsutil/commands/config>] for more  
information about configuring Google Cloud Storage.  
Your Google Cloud SDK is configured and ready to use!

\* Commands that require authentication will use thashutasleem@gmail.com by default  
\* Commands will reference project `bmi-calculation` by default  
Run `gcloud help config` to learn how to change individual settings



3.

```
C:\WINDOWS\system32\cmd.exe

> server@1.0.0 start C:\Users\Thashu\Desktop\rebmi
> node server.js

Server running on port 3000
Terminate batch job (Y/N)?
^C
C:\Users\Thashu\Desktop\rebmi>gcloud app deploy
Services to deploy:

descriptor:      [C:\Users\Thashu\Desktop\rebmi\app.yaml]
source:          [C:\Users\Thashu\Desktop\rebmi]
target project:  [bmi-calculation]
target service:  [default]
target version:  [20190418t210322]
target url:      [https://bmi-calculation.appspot.com]

Do you want to continue (Y/n)? y

Beginning deployment of service [default]...
Building and pushing image for service [default]
Started cloud build [0632b02e-4deb-47c3-9e8c-7b2dd7ed392f].
To see logs in the Cloud Console: https://console.cloud.google.com/gcr/builds/0632b02e-4deb-47c3-9e8c-7b2dd7ed392f?project=880454111962
----- REMOTE BUILD OUTPUT -----

starting build "0632b02e-4deb-47c3-9e8c-7b2dd7ed392f"

FETCHSOURCE
Fetching storage object: gs://staging.bmi-calculation.appspot.com/asia.gcr.io/bmi-calculation/appengine/default.20190418t210322:latest#1555601794845349
Copying gs://staging.bmi-calculation.appspot.com/asia.gcr.io/bmi-calculation/appengine/default.20190418t210322:latest#1555601794845349...
- [1 files][ 22.4 KiB/ 22.4 KiB]
Operation completed over 1 objects/22.4 KiB.
BUILD
Starting Step #0
Step #0: Pulling image: gcr.io/gcp-runtimes/nodejs/gen-dockerfile@sha256:dcc59195afd1ecb8415e1a96294593a8060a7cfd26207eaf475e7e612b4b70fd
Step #0: sha256:dcc59195afd1ecb8415e1a96294593a8060a7cfd26207eaf475e7e612b4b70fd: Pulling from gcp-runtimes/nodejs/gen-dockerfile
Step #0: e297e9f843a4: Already exists
Step #0: f0efa83c9481: Already exists
Step #0: 3c2cba919283: Already exists
Step #0: ea7eea6f85f6: Pulling fs layer
Step #0: bb893edbd52e: Pulling fs layer
Step #0: f534fc3a5914: Pulling fs layer
Step #0: 9dee9ad2f12a: Pulling fs layer
Step #0: e32c223b2f5d: Pulling fs layer
```

#### 4.

C:\WINDOWS\system32\cmd.exe

```
Step #1: [36mINFO[0m[0025] Taking snapshot of files...
Step #1: [36mINFO[0m[0025] RUN npm install --unsafe-perm || ((if [ -f npm-debug.log ]; then      cat npm-debug.log;      fi) && false)
Step #1: [36mINFO[0m[0025] cmd: /bin/sh
Step #1: [36mINFO[0m[0025] args: [-c npm install --unsafe-perm || ((if [ -f npm-debug.log ]; then      cat npm-debug.log;      fi) && false)]
Step #1: npm WARN server@1.0.0 No repository field.
Step #1:
Step #1: added 51 packages from 38 contributors and audited 2391 packages in 2.675s
Step #1: found 0 vulnerabilities
Step #1:
Step #1: [36mINFO[0m[0030] Taking snapshot of full filesystem...
Step #1: [36mINFO[0m[0038] CMD npm start
Step #1: 2019/04/18 15:37:49 existing blob: sha256:a2b48c99666aa5a5a3ce103a92f732315cc8c6068a96dc0a44dbcd68168a109
Step #1: 2019/04/18 15:37:49 existing blob: sha256:965f09661298db9b9c5f92ecab11f31ed7abc9acf5d8da18c22dbfe4e21ee49d
Step #1: 2019/04/18 15:37:49 existing blob: sha256:79684cbacd3d4916ed4354add3ae35774e5d416e79e663bf5f962cd2192b7a89
Step #1: 2019/04/18 15:37:49 existing blob: sha256:e297e9f843a4fb5066315e09880bfe009d72cf7074703c84b503ac4051c27170
Step #1: 2019/04/18 15:37:49 existing blob: sha256:677b602e52e5402bc567cdec78fc98db6df0c4721a04b921821cdf2351a32bc0
Step #1: 2019/04/18 15:37:49 existing blob: sha256:3c2cba919283a210665e480bcfb943eaaaf4ed87a83f02e81bb286b8bdead0e75
Step #1: 2019/04/18 15:37:49 existing blob: sha256:08781d1c1fbfc4fd34fa80b356a31d76c73f4732300d102a59af39dc7e5ab1f03
Step #1: 2019/04/18 15:37:49 existing blob: sha256:f0efa83c94817e10b719c8893ce216d74980f21bad9c32c708538d72a83b9ec0
Step #1: 2019/04/18 15:37:49 existing blob: sha256:5c5aaaf0f730224fd4c6f2d40ef0cf298e5cf9821979e86b17632925f9f780df
Step #1: 2019/04/18 15:37:49 existing blob: sha256:411ccdae4c24aa242a98543ec50b1e4a761e181779c4b6131470ddf9f2e3fece
Step #1: 2019/04/18 15:37:53 pushed blob sha256:4940b24e50bd99da774b518d268751f0a98a3c5e1457f4098b2c0dd29783c9f6
Step #1: 2019/04/18 15:37:53 pushed blob sha256:9912c352ded4e2e510baa29601d35ef6ad7e8a5bd36db308a40276b73e479e1e
Step #1: 2019/04/18 15:37:53 pushed blob sha256:721296e32ad83143cbaf934db784af2ee54fff37cccd8b3fb37f40831e118c91
Step #1: 2019/04/18 15:37:55 asia.gcr.io/bmi-calculation/appengine/default.20190418t210322:latest: digest: sha256:d5a35fd4e553a273d5fee274ffe09eec0b83793db1898e01a8f06ad188cd44f4 siz
Finished Step #1
PUSH
DONE
-----
Updating service [default] (this may take several minutes)...done.
Setting traffic split for service [default]...done.
Deployed service [default] to [https://bmi-calculation.appspot.com]

You can stream logs from the command line by running:
  $ gcloud app logs tail -s default

To view your application in the web browser run:
  $ gcloud app browse

C:\Users\Thashu\Desktop\rebmi>
```

THERE FORE SERVICE GOT SUCCESFULLY DEPLOYED

OPEN THE LINK TO USE THE DEPLOYED SERVICE: <https://bmi-calculation.appspot.com>