ASSIGNMENT
PING ECHO & REDUNDANCY

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Docker has been used to run services M1 and M2 in containers created using Apache PHP image.

Machine Interface initially checks if Get Header response of Service S1 and S2 are HTTP/1.1 200 OK.
If this is true , this means VM1 and VM2 are also running correctly.

If Header response is not HTTP/1.1 200 OK , status of Vms are checked further using ping command.

Note that IP Address of VMs are found using docker container inspect command.


```
rks": {
ridge": {
  "IPAMConfig": null,
  "Links": null,
  "Aliases": null,
  "NetworkID": "99b1ac137887713185d7cef344af8253ce052f79a3ef1f49c3ce384e1a0dece8",
  "EndpointID": "c21fb2d3cbb428903511043431e5bc8bd641a7b1e50392bee7d47c2dc9899e97",
  "Gateway": "172.17.0.1",
  "IPAddress": "172.17.0.3",
  "IPPrefixLen": 16,
  "IPv6Gateway": "",
  "GlobalIPv6Address": "",
  "GlobalIPv6PrefixLen": 0,
  "MacAddress": "02:42:ac:11:00:03",
  "DriverOpts": null
```


Service address required for Get Address was mentioned during container creation.

If S1 is down , Machine interface calls S2 to perform further operations.

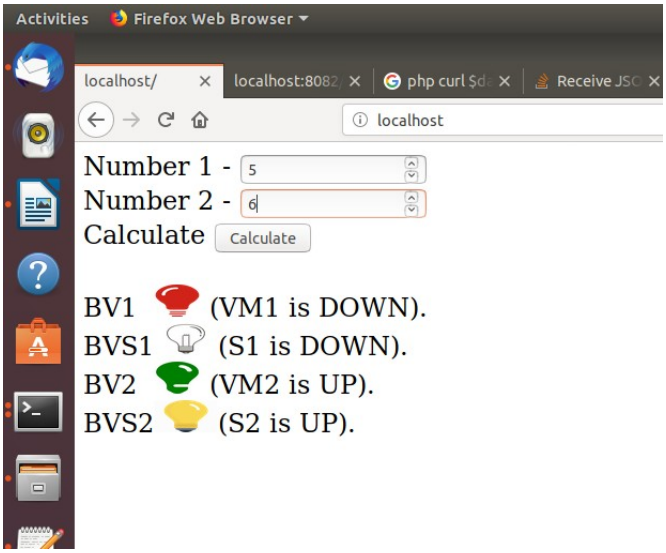
“docker run -d -p **8082:80** --name m2 --mount type=bind,source="$(pwd)/M4",target=/var/www/html php:apache”

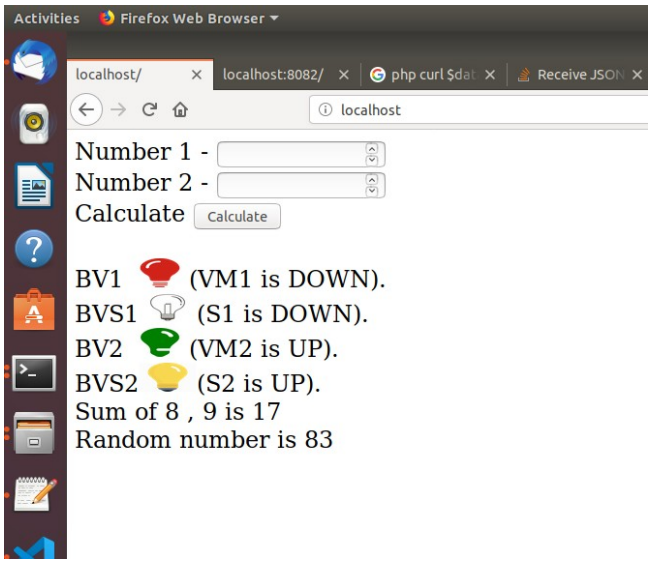
Services S1 and S2 are basically two REST APIs which takes value of num1 and num2 as JSON type passed by machine interface using Curl postfields.
Values are decoded at S1 or S2 , sum and random number is calculated further . Response is then given back to the machine interface which is then decoded and displayed .

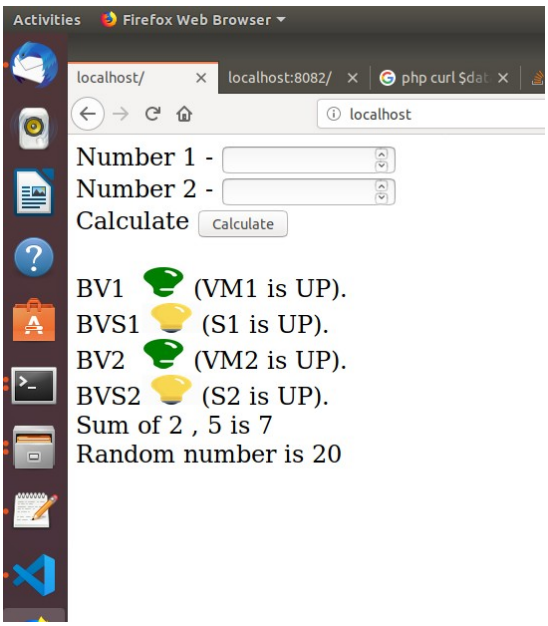
The monitor interface also contains four bulbs namely BV1, BVS1, BV2 and BVS2 as was mentioned in the assignment .

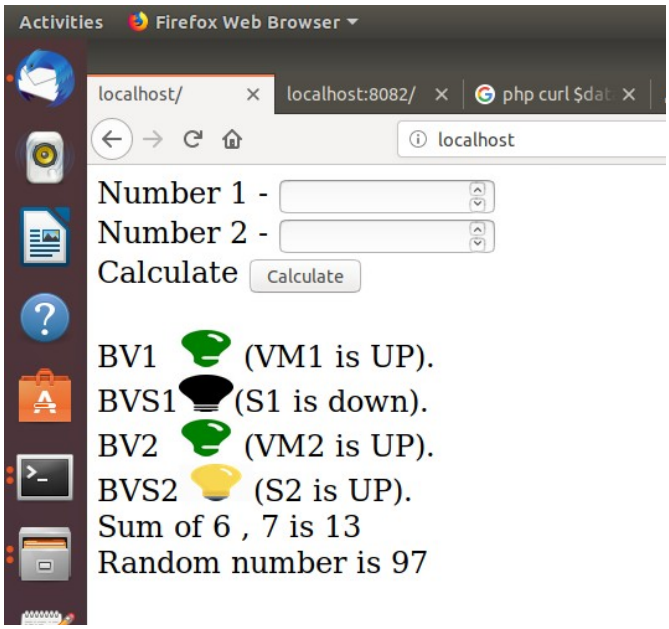
The Zip folder contains three folders containig required files for machine interface , VM1 S1 and VM2 S2.

Folder containg machine interface also have image pngs for bulbs.


Activities
Firefox Web Browser
localhost/
localhost:8082/
php curl $dat
Receive JSON
localhost
Number 1 - 5
Number 2 - 6
Calculate
Calculate
BV1 (VM1 is DOWN).
BVS1 (S1 is DOWN).
BV2 (VM2 is UP).
BVS2 (S2 is UP).


Activities
Firefox Web Browser
localhost/
localhost:8082/
php curl $dat
Receive JSON
localhost
Number 1 -
Number 2 -
Calculate
Calculate
BV1 (VM1 is DOWN).
BVS1 (S1 is DOWN).
BV2 (VM2 is UP).
BVS2 (S2 is UP).
Sum of 8 , 9 is 17
Random number is 83


Activities
Firefox Web Browser
localhost/
localhost:8082/
php curl $dat
localhost
Number 1 -
Number 2 -
Calculate
Calculate
BV1 (VM1 is UP).
BVS1 (S1 is UP).
BV2 (VM2 is UP).
BVS2 (S2 is UP).
Sum of 2 , 5 is 7
Random number is 20


Activities
Firefox Web Browser
localhost/
localhost:8082/
php curl $dat
localhost
Number 1 -
Number 2 -
Calculate
Calculate
BV1 (VM1 is UP).
BVS1 (S1 is down).
BV2 (VM2 is UP).
BVS2 (S2 is UP).
Sum of 6 , 7 is 13
Random number is 97