

CLOUD COMPUTING LAB: WEEK 6

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1.) Work Queues

1a) SS of the docker compose output:

The screenshot displays a Windows desktop environment. The primary focus is a terminal window titled "MSYS2/6th Semester-Cloud-Cx" which contains a C++ program output. The program simulates a producer-consumer scenario with 10 producers and 10 consumers. Each producer sends a message to a queue, and each consumer receives a message from the queue. The output shows the sequence of messages being sent and received, with timestamps and process IDs (PIDs) for each action. The messages are numbered from 1 to 14, indicating that the simulation has completed its execution.

At the bottom of the screen, the Windows taskbar is visible, featuring the Start button, a search bar, and several pinned application icons including File Explorer, Microsoft Edge, Google Chrome, and various utility tools. The system clock in the bottom right corner indicates the time as 00:10 on 21-02-2021.

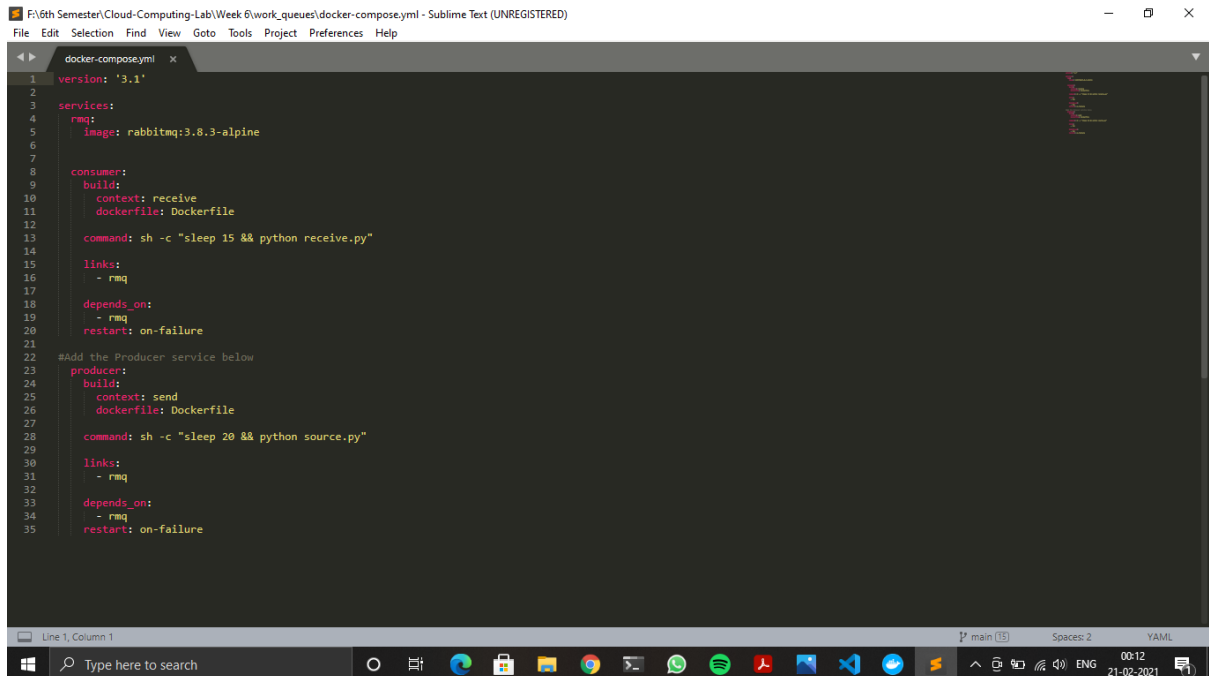
1b) SS of the docker ps output:

```

H:\00ESKTOP-SM37VF7 MSYS ~
$ docker ps -a
CONTAINER ID        IMAGE               COMMAND                  CREATED            STATUS              PORTS              NAMES
75f21027f49d      work_queues_consumer  "sh -c 'sleep 15 && _"  3 minutes ago     Up 3 minutes              work_queues_consumer_4
d5ec71ef97e3      work_queues_producer  "sh -c 'sleep 20 && _"  3 minutes ago     Exited (0) 3 minutes ago  work_queues_producer_1
a19da85771be      work_queues_consumer  "sh -c 'sleep 15 && _"  3 minutes ago     Up 3 minutes              work_queues_consumer_2
c8cb3b141884      work_queues_consumer  "sh -c 'sleep 15 && _"  3 minutes ago     Up 3 minutes              work_queues_consumer_1
1495f9abala6      work_queues_consumer  "sh -c 'sleep 15 && _"  3 minutes ago     Up 3 minutes              work_queues_consumer_3
9e272a510058      rabbitmq:3.8.3-alpine  "docker-entrypoint.s..."  3 minutes ago     Up 3 minutes              4369/tcp, 5671-5672/tcp, 25672/tcp  work_queues_rm_q_1
bae7d61dba70      flask-app             "python app.py"         8 days ago        Exited (137) 8 days ago
H:\00ESKTOP-SM37VF7 MSYS ~
$

```

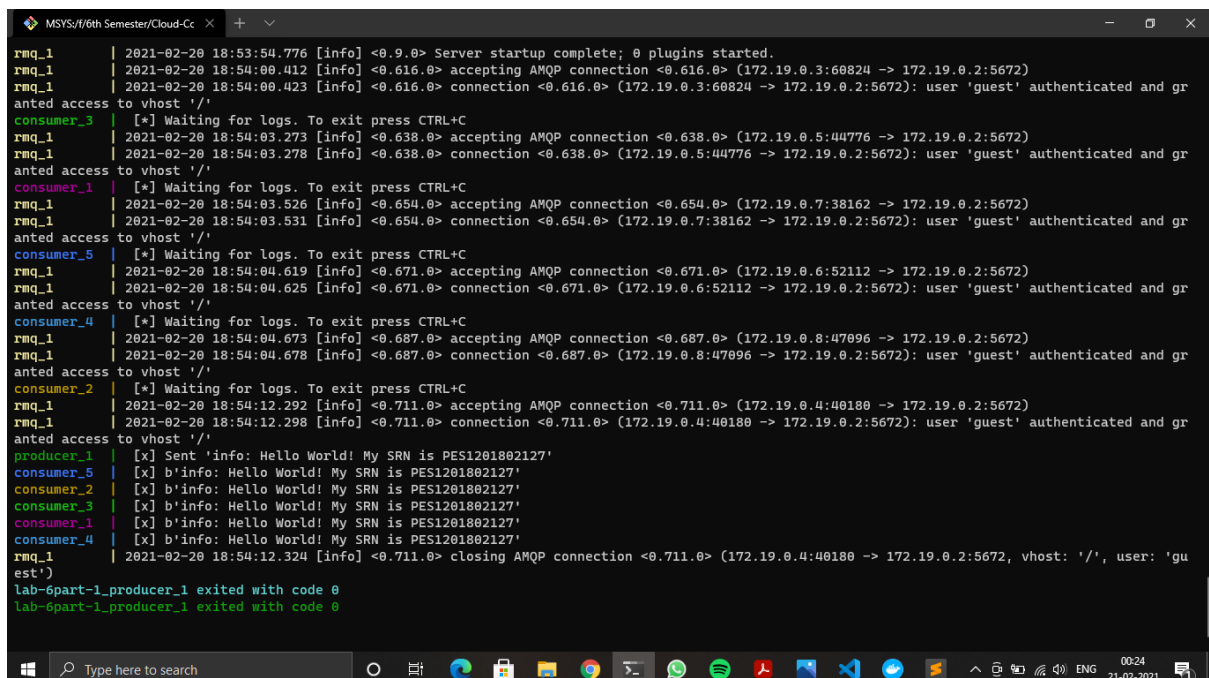
1c) SS of the YAML File:



```
1 version: '3.1'
2
3 services:
4   rmq:
5     image: rabbitmq:3.8.3-alpine
6
7   consumer:
8     build:
9       context: receive
10      dockerfile: Dockerfile
11
12     command: sh -c "sleep 15 && python receive.py"
13
14     links:
15       - rmq
16
17     depends_on:
18       - rmq
19
20     restart: on-failure
21
22 #Add the Producer service below
23 producer:
24   build:
25     context: send
26     dockerfile: Dockerfile
27
28   command: sh -c "sleep 20 && python source.py"
29
30   links:
31     - rmq
32
33   depends_on:
34     - rmq
35
36   restart: on-failure
```

2.) Publish/Subscribe

2a) SS of the docker compose output:



```
rmq_1 | 2021-02-20 18:53:54.776 [info] <0.9.0> Server startup complete; 0 plugins started.
rmq_1 | 2021-02-20 18:54:00.412 [info] <0.616.0> accepting AMQP connection <0.616.0> (172.19.0.3:60824 -> 172.19.0.2:5672)
rmq_1 | 2021-02-20 18:54:00.423 [info] <0.616.0> connection <0.616.0> (172.19.0.3:60824 -> 172.19.0.2:5672): user 'guest' authenticated and granted access to vhost '/'
consumer_3 | [*] Waiting for logs. To exit press CTRL+C
rmq_1 | 2021-02-20 18:54:03.273 [info] <0.638.0> accepting AMQP connection <0.638.0> (172.19.0.5:44776 -> 172.19.0.2:5672)
rmq_1 | 2021-02-20 18:54:03.278 [info] <0.638.0> connection <0.638.0> (172.19.0.5:44776 -> 172.19.0.2:5672): user 'guest' authenticated and granted access to vhost '/'
consumer_1 | [*] Waiting for logs. To exit press CTRL+C
rmq_1 | 2021-02-20 18:54:03.526 [info] <0.654.0> accepting AMQP connection <0.654.0> (172.19.0.7:38162 -> 172.19.0.2:5672)
rmq_1 | 2021-02-20 18:54:03.531 [info] <0.654.0> connection <0.654.0> (172.19.0.7:38162 -> 172.19.0.2:5672): user 'guest' authenticated and granted access to vhost '/'
consumer_5 | [*] Waiting for logs. To exit press CTRL+C
rmq_1 | 2021-02-20 18:54:04.619 [info] <0.671.0> accepting AMQP connection <0.671.0> (172.19.0.6:52112 -> 172.19.0.2:5672)
rmq_1 | 2021-02-20 18:54:04.625 [info] <0.671.0> connection <0.671.0> (172.19.0.6:52112 -> 172.19.0.2:5672): user 'guest' authenticated and granted access to vhost '/'
consumer_4 | [*] Waiting for logs. To exit press CTRL+C
rmq_1 | 2021-02-20 18:54:04.673 [info] <0.687.0> accepting AMQP connection <0.687.0> (172.19.0.8:47096 -> 172.19.0.2:5672)
rmq_1 | 2021-02-20 18:54:04.678 [info] <0.687.0> connection <0.687.0> (172.19.0.8:47096 -> 172.19.0.2:5672): user 'guest' authenticated and granted access to vhost '/'
consumer_2 | [*] Waiting for logs. To exit press CTRL+C
rmq_1 | 2021-02-20 18:54:12.292 [info] <0.711.0> accepting AMQP connection <0.711.0> (172.19.0.4:40180 -> 172.19.0.2:5672)
rmq_1 | 2021-02-20 18:54:12.298 [info] <0.711.0> connection <0.711.0> (172.19.0.4:40180 -> 172.19.0.2:5672): user 'guest' authenticated and granted access to vhost '/'
producer_1 | [x] Sent 'info: Hello World! My SRN is PES1201802127'
consumer_5 | [x] b'info: Hello World! My SRN is PES1201802127'
consumer_2 | [x] b'info: Hello World! My SRN is PES1201802127'
consumer_3 | [x] b'info: Hello World! My SRN is PES1201802127'
consumer_1 | [x] b'info: Hello World! My SRN is PES1201802127'
consumer_4 | [x] b'info: Hello World! My SRN is PES1201802127'
rmq_1 | 2021-02-20 18:54:12.324 [info] <0.711.0> closing AMQP connection <0.711.0> (172.19.0.4:40180 -> 172.19.0.2:5672, vhost: '/', user: 'guest')
lab-6part-1_producer_1 exited with code 0
lab-6part-1_producer_1 exited with code 0
```

2b) SS of the docker ps output:

```
MSYS/6th Semester/Cloud-Cc x MSYS/c/Users/Hp x + v
Hp@DESKTOP-SM37VF7 MSYS ~
$ docker ps -a
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS          NAMES
d4b722bc3c14   lab-6part-1_consumer  "sh -c 'sleep 15 && _"  About a minute ago  Up About a minute              lab-6part-1_cons
umer_5
c4961e32f867   lab-6part-1_consumer  "sh -c 'sleep 15 && _"  About a minute ago  Up About a minute              lab-6part-1_cons
umer_2
07896d45d30c   lab-6part-1_consumer  "sh -c 'sleep 15 && _"  About a minute ago  Up About a minute              lab-6part-1_cons
umer_1
11964b319004   lab-6part-1_consumer  "sh -c 'sleep 15 && _"  About a minute ago  Up About a minute              lab-6part-1_cons
umer_4
f396685752d7   lab-6part-1_producer  "sh -c 'sleep 20 && _"  About a minute ago  Exited (0) 51 seconds ago      lab-6part-1_prod
ucer_1
658cce5789d5   lab-6part-1_consumer  "sh -c 'sleep 15 && _"  About a minute ago  Up About a minute              lab-6part-1_cons
umer_3
b250f5492a9d   rabbitmq:3.8.3-alpine  "docker-entrypoint.s..."  About a minute ago  Up About a minute              4369/tcp, 5671-5672/tcp, 25672/tcp lab-6part-1_rm
q_1

Hp@DESKTOP-SM37VF7 MSYS ~
$
```