Module 3:

[GLOBAL INFRASTRUCTURE & RELIABILITY]

Selecting a Region :-

(1) Compliance with data governance and legal requirements :-

→ Depending on your company and location, you might need to run data out of specific areas.

Example :

> If your company requires all of its data to reside within the boundaries of UK, then choose
>
> (London) region.

② <u>Proximity to your customers</u> :-

→ Selecting a region close to your customer will help you to get content to them faster.

:) Eg :-

> Your company is in Washington DC and many of your customer live in Singapore. Instead of running your infrastructure close to company headquaters, run the application from singapere region

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③ <u>Available services within a region :-</u>

→ Sometimes the closest region might not have all the features that you want to offer to customers.

Eg :

Suppose that your developer want to build an application that uses Amazon Braket. Amazon Braket is not available in every region around the world. So, the developer need to run it in one of the region that already offers it

④ <u>Pricing</u> :-

Suppose that your are considering
running application in both the
United States and Brazil.

(X) The Brazil tax structure is 50%
more to run same workload
in the US region.

→ The cost of services can vary from
region to region.

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Availability Zones :-

→ Availability zones in a single data center or a group of data centers within a region.

→ Availability zones are located tens of miles apart from each other.

→ It have low latency [the time between when content requested & received] between availability zones.

→ If a disaster occurs in one part of the region, they are distant enough to reduce the chance that multiple availability zones are affected.
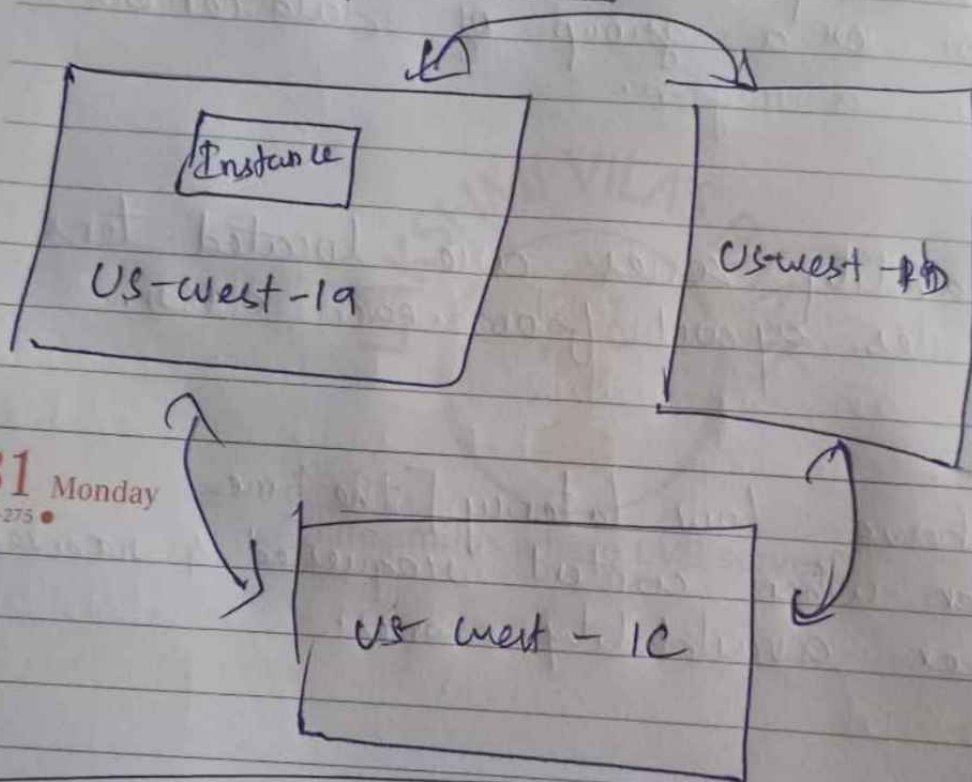
STEP 1

Amazon Ec2 instance in a single availability zone.

Instance

US-west-1a

US-west-1b

US west - 1c

Here if the US -west -1a instance fails, you will lose your instance.

STEP2

Amazon EC2 instance in a multiple availability zone

Instance

US-west-1a

Instance
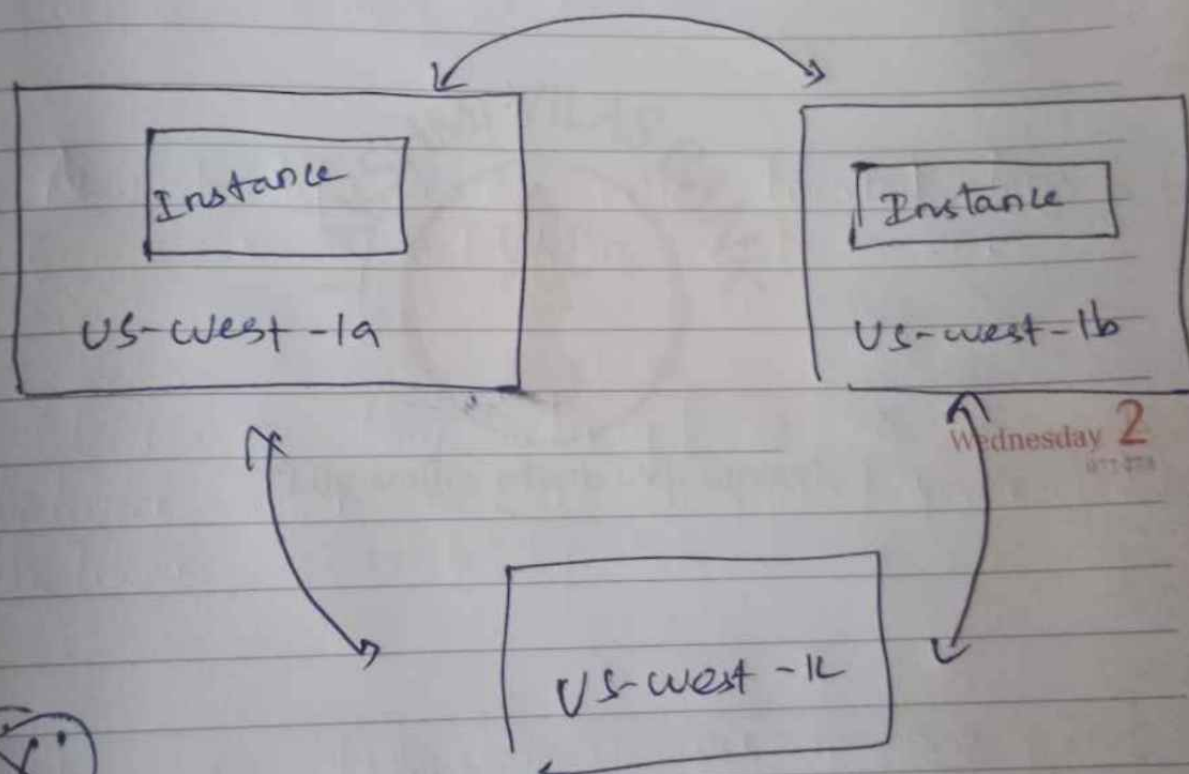
US-west-1b

US-west-1c

If us-west-1a were to fail, your application would still be running in us-west-1b.
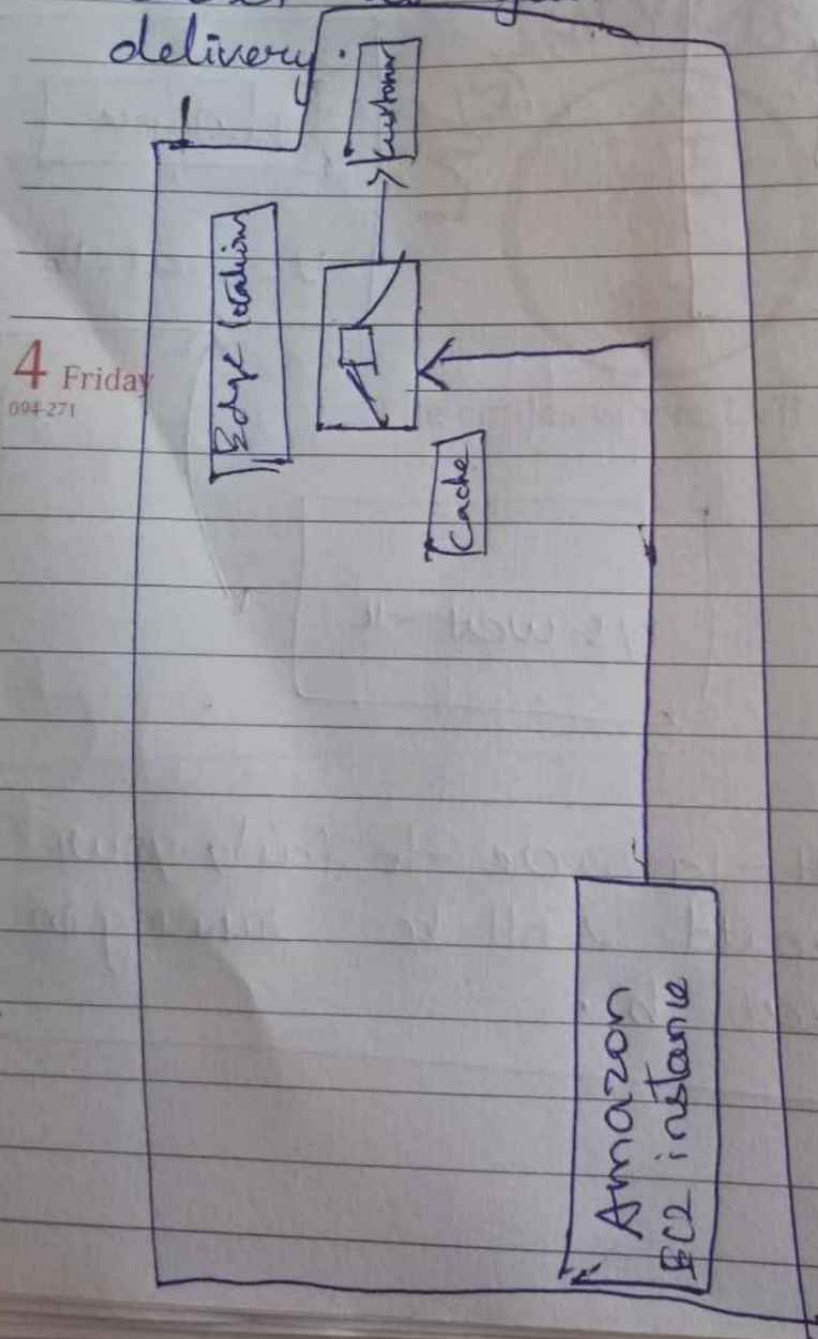
Edge location :-

1) Edge location is a site that amazon cloud front uses to store cached copies of your content closer to your customers for faster delivery.

Edge location

Customer

Cache

Amazon EC2 instance

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(-X)

Here lets consider that data in

in [Brazil] and the customer lives

in [chim] . To provide the content

to the customer, instead of getting
data from brazil, you can get a
coppy locally at edge location that
is close to your customers in china.

↑

BY DOING THIS

↓

(X)

the when customer requests one of your
files → The [Amazon cloud front] retrives
the file from the cache copy in
edge location and delivers to customer.
The file in delivered faster.

Ways to interact with Aws Service :-

AWS MANAGEMENT CONSOLE :-

① It is a web based interface for accessing and managing Aws services.

② You can quickly access recently used services by name, keyword or acronym.

③ You can use Aws console mobile application perform tasks like monitoring resource, viewing alarms and accessing billing information.

④ Multiple identities can login to Aws console mobile at same time.

AWS Command line interface :-

→ AWS CLI is available for users on windows, mac os & linux.

→ AWS CLI controls multiple AWS service directly from the command line within one tool,

→ By using AWS CLI you can use commands to launch Amazon EC2 Instance.

<u>Software development kit</u>

→ It is also used to access and manage AWS services.

→ SDK enables use to AWS service with your existing applications or create entirely new applications that will run on aws.

→ SDK supports programming language like C++, java, .NET.

Aws Elastic Beanstalk.

→ Using EBs you can provide

① code

② Configuration setting

→ It deploys resources to perform

→ ① Adjust capacity

② Load balancing

③ Automatic scaling

④ Application health monitoring

Aws Cloud Formation :

→ Using Aws cloud formation, you can treat your [infrastructure as code].

⇓

It Means

You can build an environment by writing lines of codes instead of using Aws management console to individually provide resources.

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→ It gives right operations to perform and also roll back changes automatically if it detects errors.