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Q:- What are Content Delivery Networks? What is cloud flare. Write a code for CDN?

Ans: CDN: A content delivery network (CDN) refers to a geographically distributed group of servers which work together to provide fast delivery of Internet content.

A CDN allows for the quick transfer of assets. CDN brings content closer to the user. This improves the performance of a web service as percieved by the user.

IDEA Behind CDN: Before CDN if any person living in Pakistan asks for a file that is Placed in USA server will going to take a lot of time and website response time will be slower. What CDN does is that it deploys servers at hundreds of locations all around the world to bring content closer to the user.

Now if the user requests for any file "First time it will have to bring the file from orignal server but next time it donot need to". It will place that file in CDN cache and the next time user requests a file it will be served easily from CDN cache

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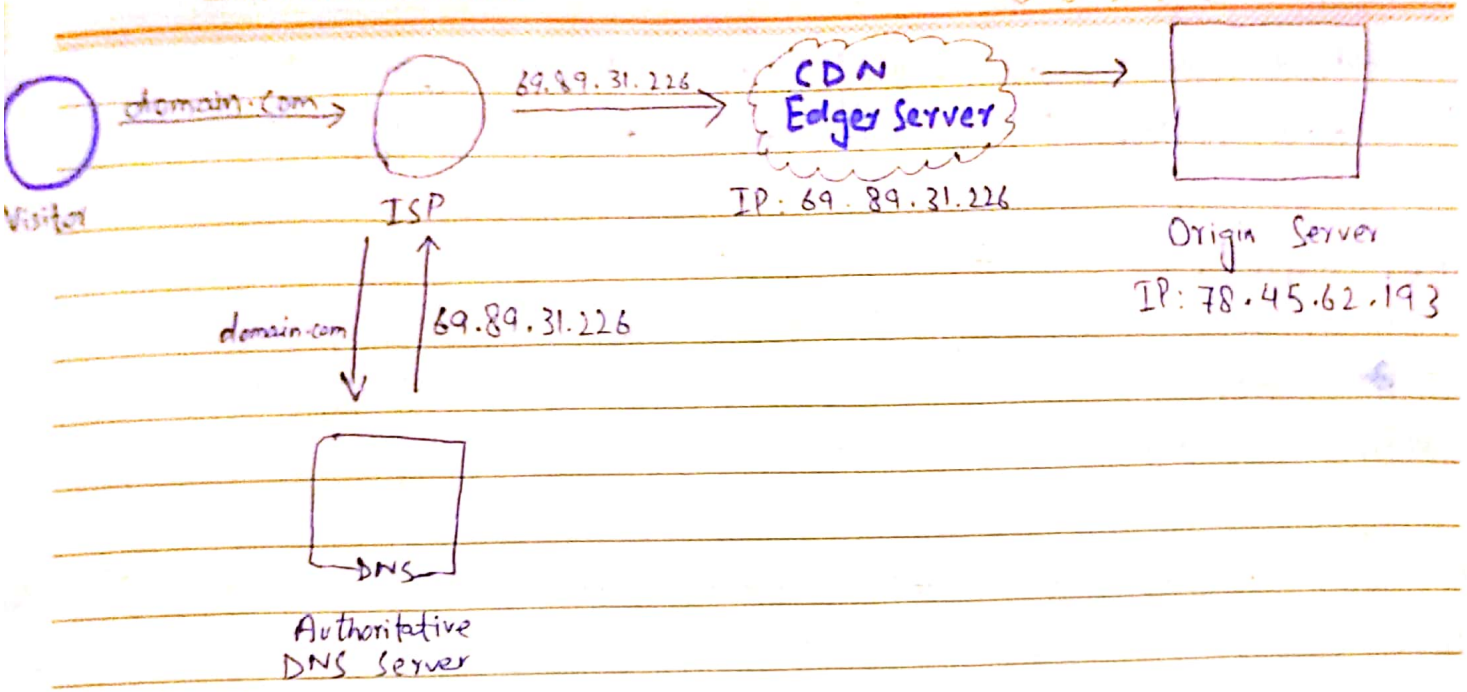

Benefits of using a CDN:

1. Improving website load times: By distributing content closer to website visitor by using a nearby CDN server, visitor experience. The faster page loading time. User Experience will be improved. Faster the website response more visitors will stay and stick around longer.

2. Reduce Bandwidth costs: Without a CDN every time we have to get the file from the main server but ~~whi~~ with CDN "First time PULL Then after that subsequent requests will be served from CDN cache".

3. Increasing Content Availability: Large amount of traffic can effect the website to not behave normal. But with the help of CDN it handles traffic easily and content is available to all users with no lack in response time.

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4. **Improving website security:** CDN prevents different attacks like DDOS attacks, improvements to security certificates.

Best CDN Providers

1. Stack Path
2. Sucuri
3. Cloudflare
4. Key CDN
5. Rackspace
6. Google Cloud CDN
7. CacheFly
8. Amazon Cloud Front

Simple CDN in Python:

```
import requests
impro
class CDN:
    def __init__(self, servers):
        self.servers = servers

    def get_content(self, url):
        for server in self.servers:
            try:
                response = requests.get(f"{server}/{url}")
                if response.status_code == 200:
                    return response.content
            except:
                continue
        return None
```

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```
servers = [
        "http://localhost:3000",
        "http://server1.example.com",
        "http://server2.example.com",
        "http://server3.example.com",
        "http://localhost:3001"
    ]
cdn = CDN(servers)
content = cdn.get_content("path/to/student_names").

if content:
    print(content)

else:
    print("content Not Found").
```

Explanation: This code will check ~~check~~ these given servers are providing the content. If the response is 200 that means "OK" content provided otherwise it will give error.

~~I have used POSTMAN to~~