1. A virtual machine running under EC2 has several IP addresses. List and explain THREE (3) types of the IP addresses.

* **EC2 private IP address** → the internal address of an instance; it is only used for routing within the EC2 cloud.
* **EC2 public IP address** →network traffic originating outside the AWS network must use the public IP address or the elastic IP address of the instance. The public IP address is translated using the Network Address Translation (NAT) to the private IP address when an instance is launched and it is valid until the instance is terminated. Traffic to the public address is forwarded to the private IP address of the instance.
* **EC2 elastic IP address** → the IP address allocated to an AWS account and used by traffic originated outside AWS. NAT is used to map an elastic IP address to the private IP address. Elastic IP addresses allow a cloud user to mask instance or availability zone failures by programmatically re-mapping a public IP address to any instance associated with the user's account.

1. Identify THREE (3) questions of interest to cloud application developers.

* How easy is it to use the cloud?
* How knowledgeable should an application developer be about networking and security?
* How easy is it to develop a new cloud application?
* How easy is it to port an existing application to the cloud?

1. State ONE (1) importance of a DNS service named Route 53.

* A network of DNS servers is scattered across the globe which enables customers to gain reliable access to AWS and place strict controls over who can manage their DNS system by allowing integration with AWS Identity and Access Management (IAM).