ROUTE TABLES

Route Tables:

- A route table contains a set of rules, called routes, that determine where network traffic is directed
- Route tables are created at VPC level
- Route tables are assigned to ("associated with") Subnets
- **Each Subnet has to be associated with exactly one Route Table**
- Each Route Table can be associated with many Subnets
- If no Route Table is explicitly assigned to a Subnet, then that Subnet will be assigned the Main Route Table of the VPC by default
- It's common practice to have at least two route tables in a VPC:
  - **A Route Table for Private Subnets (doesn't route to IGW)**
  - **A Route Table for Public Subnets (routes to IGW)**
- Note: if a NAT GW is used, it needs to be added to the Route Table of the Private Subnet
- **If multiple routes match the traffic, the most specific matching route (longest prefix) will be used. Examples:**
- Traffic from the Public Subnet to 173.24.12.175 will be routed to the Internet Gateway:
  - **0.0.0.0/0 –> Internet Gateway *(match)***
  - 10.0.0.0/16 –> Local *(no match)*
- Traffic from the Public Subnet to 10.0.2.183 will be routed locally:
  - 0.0.0.0/0 –> Internet Gateway *(match)*
  - **10.0.0.0/16 –> Local *(match & longest prefix)***