Red Dead Redemption (The Civilization)

It's the year 1999, the era of the outlaws is long gone. Civilization is at its peak, it is expanding beyond the boundaries, there is not much open country available these days. Mr Edmund Cornwall is handling the Cornwall Industries these days. Cornwall business empire is involved in may major industries such as oil, keosene, tar, cotton, sugar etc. Although the west is tamed and is not that "wild" like before, but in terms of technological advancement the west is still progressing but they are not in the same page as the east, the north and the south. Internet is still one utility that is considered as luxury in the west. Mr Cornwall sees this unavailability of high-speed internet in the west as an opportunity to open a series of Cyber Cafes to provide internet to the rural areas of the west where it may still not be available anymore. Now, Cornwall Industries will initially construct one Cyber Cafe in Six Cities of the West, aside from these 6 Cyber Cafes their will be two corporate offices in Rhodes and Saint Dennis which will be situated in the same building and network as the respective Cyber Cafes. Cornwall Industries are unwilling to is establish Cyber Cafes in the remaining two cities as they want to assess the progress first for the already established Cyber Cafes. Now they have selected you as their network engineer so, your task is to design and implement a network connection to connect The Branches/Cyber Cafes according to their requirements.

The number of hosts for each router will be:

Rhodes (312)

Saint Denis (526)

Valentine (128)

Strawberry (156)

Annesburg (30)

Limpany (238)

Router Connection Information:

- Mr Cornwall decides **Annesburg** to become the absolute center of the operations as Cornwall Coal Industries has their main office set up there and he spends most of his times there
- He decides that **Annesburg** will be directly connected to **Saint Denis** and **Strawberry** as it will maintain balance between the north and south region of the greater west
- **Valentine** will be directly connected to **Strawberry** as they both falls under the same region hence there will be less cost setting up a direct connection between them
- **Saint Denis** will be directly connected with **Rhodes** on the request of Mr Cillian Gray, the now head of the Gray family who invested heavily into the Cornwall Industry of Tar
- **Limpany,** the lost city which once faced the wrath of Leviticus Cornwall is revived again by Jimmy Downes, descendant from The Downes family who owns the Braithwaite Cotton Plantation now. Considering him as a valuable ally, Mr Cornwall decides that **Limpany** will be directly connected to **Saint Denis**

While creating the network infrastrcture there are certain restrictions and rules that you need to follow:

- Choose an appropriate network address and create subnets to assign to each of the branches with the least amount of waste
- Rhodes and Saint Denis branch has corporate offices so, to ensure security they will use static addressing while the other branches will get their IP addresses through DHCP
- Rhodes and Saint Denis branch will be communicating via email so, set up an email server for sending and receiving emails among Rhodes and Saint Denis branch.
- Rhodes and Saint Denis branch will have printers for the corporate activities
- Valentine and Limpany will have laptops for the shortage of desktop computers in their branches
- Strawberry has a web server and a DNS server. When someone connects to the web server it will show "Remembering Arthur Morgan! That's the way it is!" in the homepage www.rockstar.com
- Limpany has a web server and a DNS server. When someone connects to the web server it will show "John Marston! We will always remember you!" in the homepage www.johnmarston.com
- Establish connections among all the branches as mentioned
    - Must have at least one floating route.
    - You have to remember the default route cannot be used while exchanging packets. Data will be delivered using static or dynamic routes only. For an ISP router you can use the default route but for communicating among the given networks in the above table you have to use static or dynamic routing
    - Configure half of the network to be routed dynamically
- Showing 2 end devices per network is good enough to represent the whole population
- You need to be able to ping each branch from another after all the setups are complete

Deliverables

- The network mentioned above should be implemented in packet tracer, with necessary devices and full configuration.
- After completion you should be able to test the conditions imposed.
- You will have to submit the followings:
    - Network topology diagram with proper labels
    - The configuration commands of all the routers that you have implemented.
    - VLSM tree
    - IP address table