IS664 Database Programming
FALL 2022

HOMEWORK

Homework 1

HW1: USER DEFINED FUNCTION CREATION

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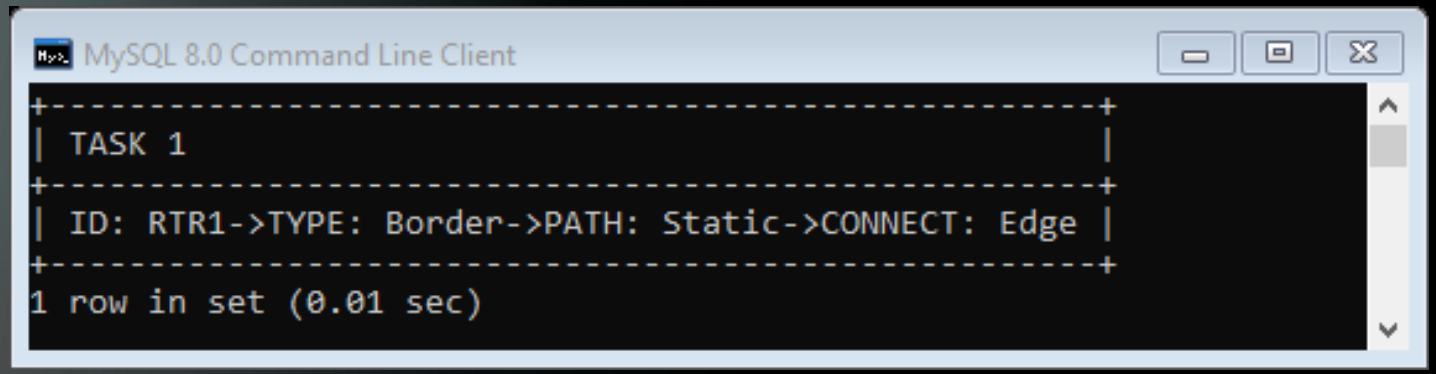
General

- This is your Homework 1 Assignment.
- This assignment utilizes the imperial_defense database.
- This assignment is designed to develop your ability to create user-defined functions that manipulate data.
- Submit this assignment as a single .sql script.
- You may utilize any native MySQL functions in your function definitions, and you may also create any additional helper methods to use in your function definitions.
- Ensure that the output of your function is in the format shown for each task.

Task 1

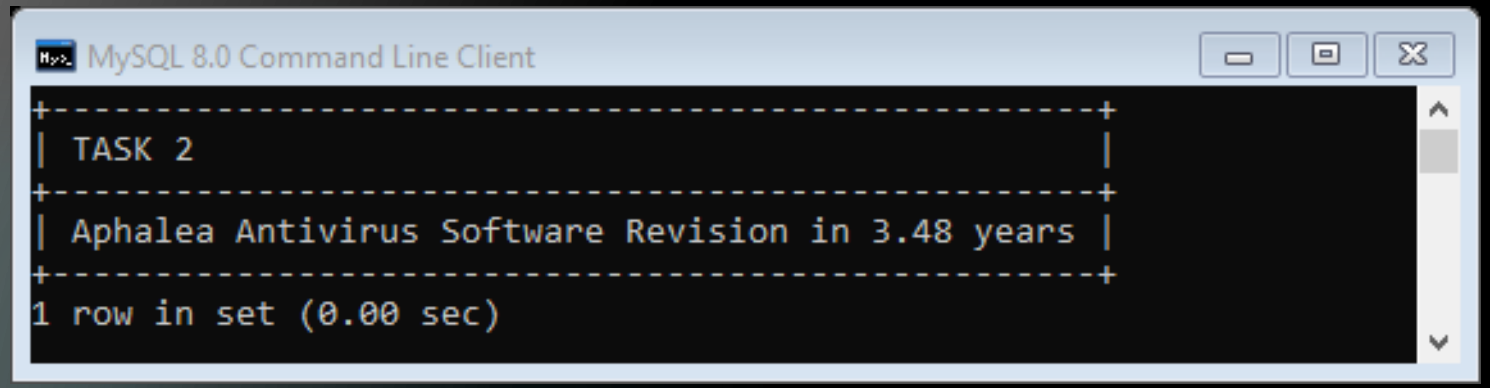
- Create the function **routerDisplay** that accepts a router id number and prints the following information, to the shell, about the router *in the format shown below*.

- RID
- RType
- RouteFinding
- Connectivity



Task 2

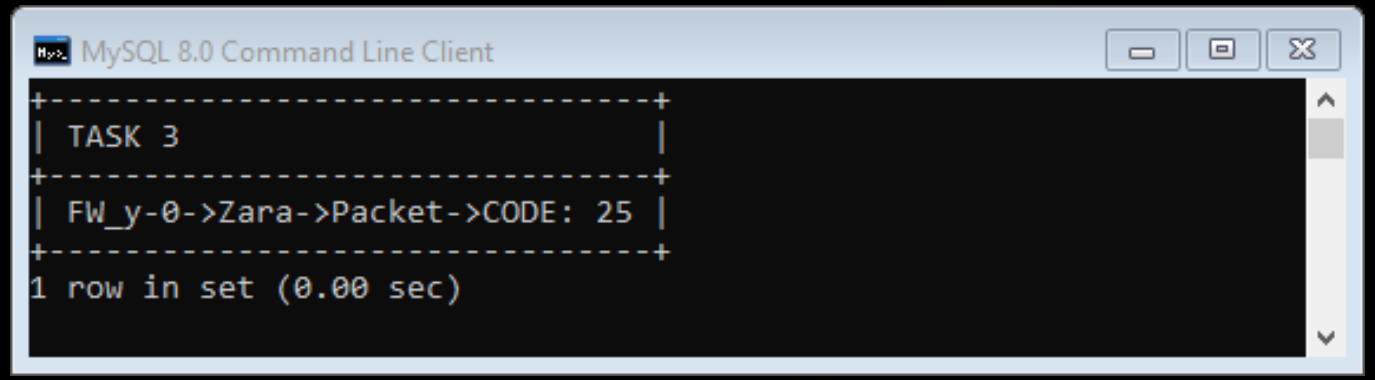
- Create the function **timeTillRevise** that accepts the name of an antivirus software and prints to the shell the software's name and the number of years from February 10, 2022, until the software's revise date *in the format shown below*.



Task 3

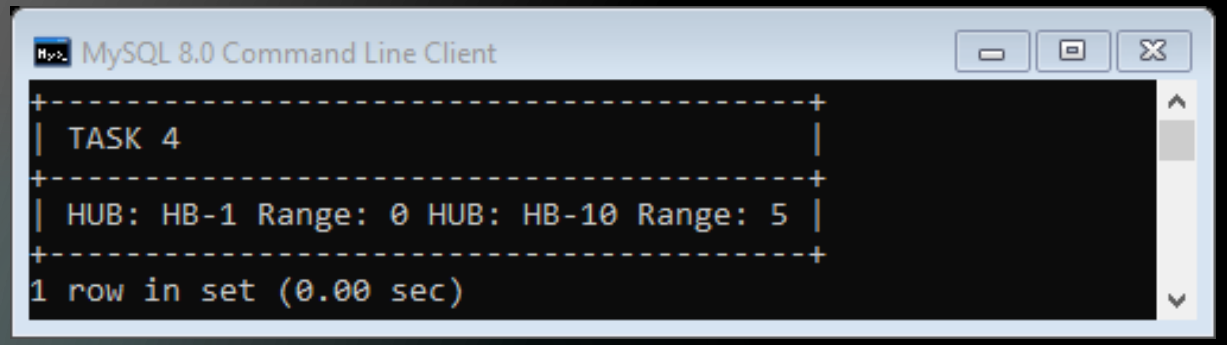
- Create the function **getFirewallCode** that accepts the ID number of a firewall system and prints to the shell, a firewall code based on the following scheme, *in the format shown below*.

System Name	System Filter	Code
Zara	Packet	25
Zara	Frame	30
Etis	Frame	35
Etis	Packet	40
Ecoria	Packet	45
Cheirus	Frame	50



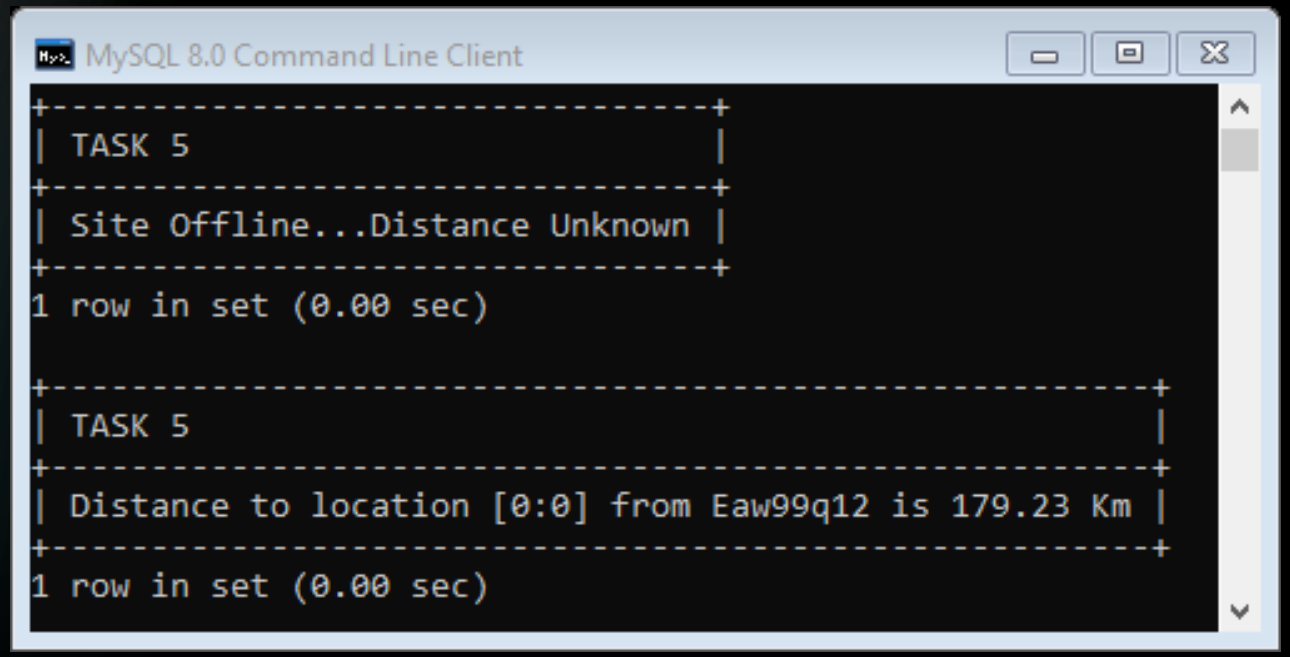
Task 4

- Create the function **hubPortDifference** that accepts the ID number of two hubs and prints to the shell the difference (absolute value) between their entry and exit port numbers, *in the format shown below*.



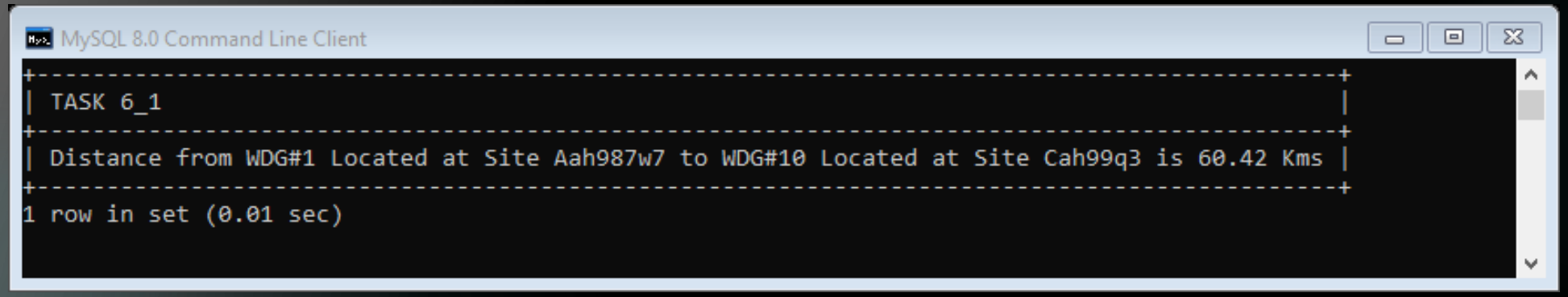
Task 5

- Create the function **distanceToSite** that accepts the name of a site and the x and y coordinates of another location and prints to the shell the 2D Euclidean distance from the site to the other location, *in the format shown below*.
- Special Instructions:
- If the status of the site is 'OFFLINE' then the function prints 'Site Offline…Distance Unknown' to the shell.



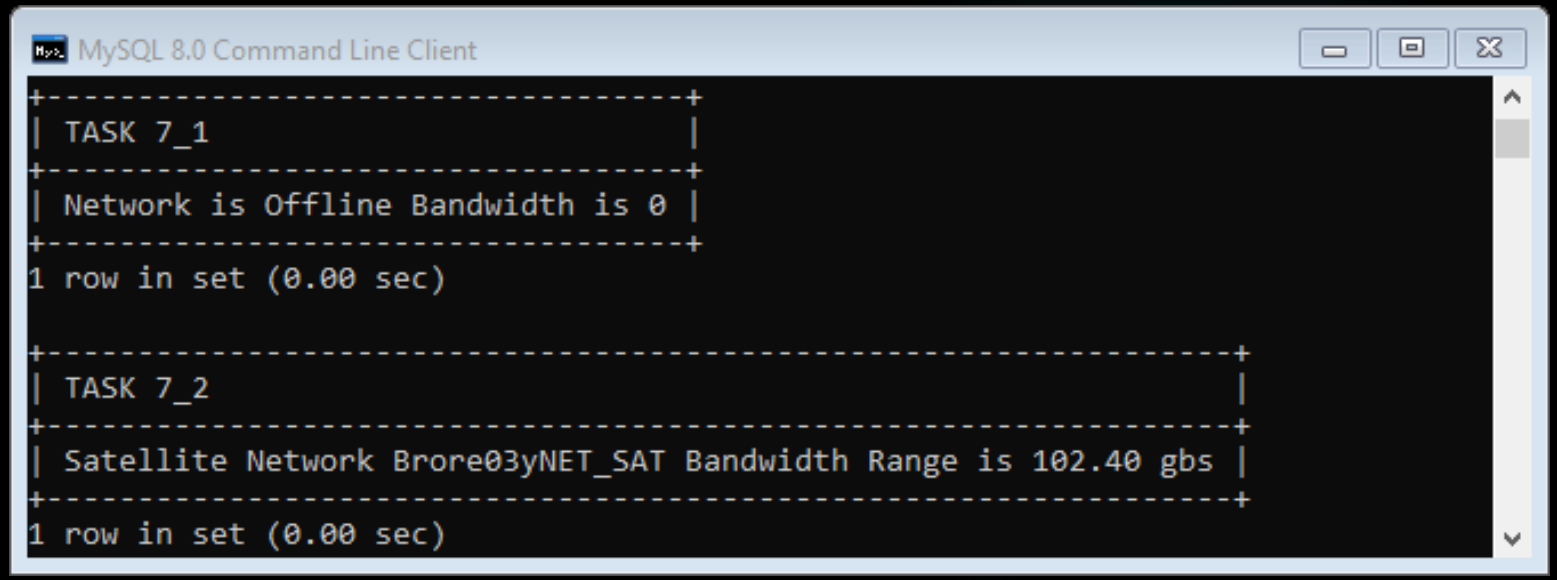
Task 6

- Create the function **distanceBetweenWidgets** that accepts the ID number of two widgets and prints to the shell the 2D Euclidean distance between them, *in the format shown below*.



Task 7

- Create the function **networkBWRange** that accepts the name of a network and prints the following information to the shell about the network *in the format shown below*.
- Name of Network, Expanded Suffix Description, and the Bandwidth Range of the network (MaxBW – MinBW)
- Special Instructions:
- If the status of the network is 'OFFLINE' then the function prints 'Network is Offline Bandwidth is 0' to the shell.
- Expanded Suffix Description
- _SAT = Satellite Network
- _DEF = Defense Network
- _CIV = Civilian Network
- _SURV = Surveillance Network
- _TRACK = Tracking Network



Task 8

- Create the function **switchConfiguration** that accepts the ID number of a switch and prints to the shell information about the switch, *in the format shown on slide 11*.
- Special Instructions:
- If the status of the network the switch is assigned to is 'OFFLINE' then the function prints 'The Switch is Currently Unavailable' to the shell.
- A switch has a Primary Port based on its ID number and whether it is stackable.
  - If number (digits) is even and Stackable is 0 Primary Port is EntryPort … otherwise Primary Port is ExitPort
- A switch has a security rating based on:
  - If Primary Port is EntryPort switch is 'Secure Switch' … otherwise switch is 'Unsecure Switch'
- A switch has a power source based on its PoE:
  - If PoE is 1 then power source is AC otherwise it is DC

Task 8 Format