# CSE471: DATA COMMUNICATIONS AND COMPUTER NETWORKS
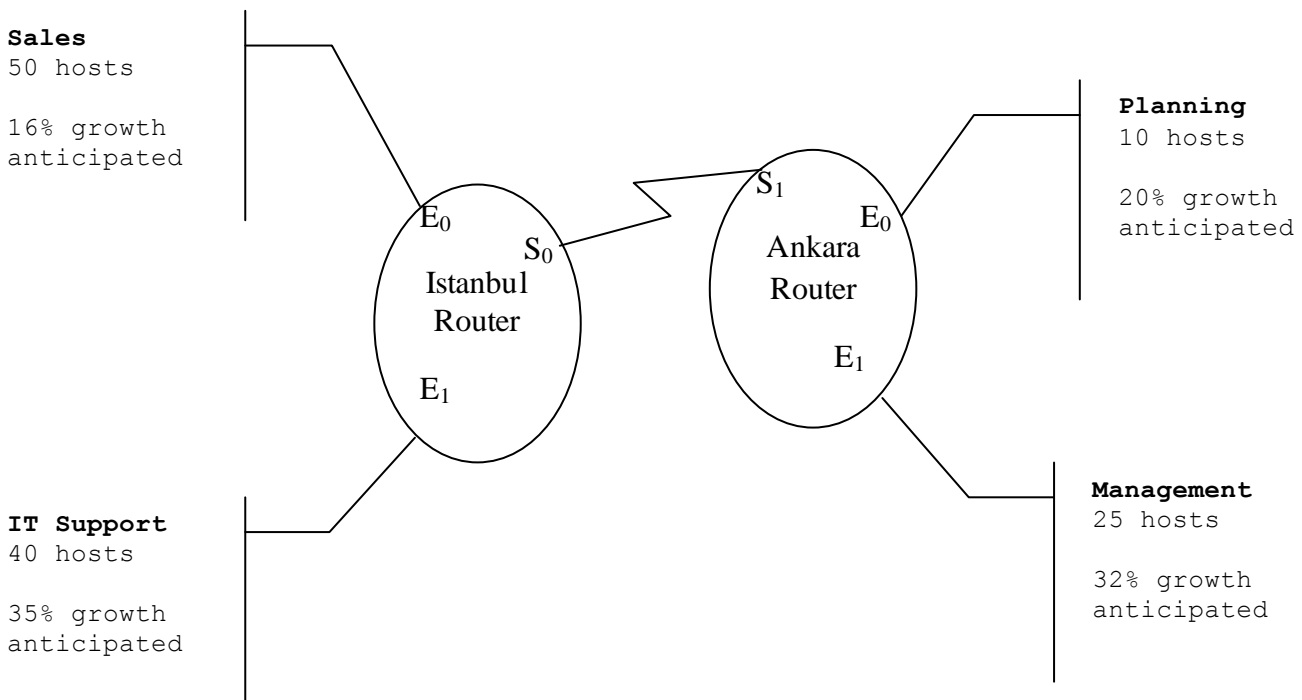
# YEDITEPE UNIVERSITY

## FALL 2021

## ASSIGNMENT 4 – DUE DATE DECEMBER 24$^{TH}$, 2020

1. You are the Network Administrator for Matilda Corporation and are required to subnet the network.

## Matilda Corporation – 200.10.80.0/24

**Sales**
50 hosts

16% growth
anticipated

**Planning**
10 hosts

20% growth
anticipated

$E_0$

$S_0$

Istanbul
Router

$E_1$

$S_1$

$E_0$

Ankara
Router

$E_1$

**IT Support**
40 hosts

35% growth
anticipated

**Management**
25 hosts

32% growth
anticipated

Assume that the $S_0$ and $S_1$ are **not** part of the corporate network and owned by another network operator (Internet Service Provider) when you are answering the questions below. However, please also textually elaborate on the scenario where the link between $S_0$ and $S_1$ **are** part of the corporate network.

1. Into what Class does this address fall?

2. What is the default subnet mask for this Class?

3. The number of bits you borrowed to subnet?

4. What is the new subnet mask?

5. How many subnets have been created?

6. How many useable subnets have been created?

7. How many hosts per subnet will there be?

8. How many useable hosts per subnet will there be?

9. What is the broadcast address for each subnet?

10. State the IP address for each router interface

2. Consider the given following network information; please state the Class above IP address falls into and calculate the subnet mask for the District based on the total number of subnets in the District.

- You have been assigned the task of connecting your school to the School District WAN.
- There are 2048 subnets in the District's addressing scheme.
- The IP for the District is 15.10.0.0

**Submit your assignments in a zip file, which has your student number as name, through the YULEARN ([https://yulearn.yeditepe.edu.tr/](https://yulearn.yeditepe.edu.tr/)) latest by the end of Thursday, December 9th 2021.**