



Network Design and Cabling Plan Proposal

Introduction

Nerdify Enterprises has acquired a new client, Smiles for Miles, with a mission to provide dental services in small towns across the US. They are opening up a new dentist office in Hell, Michigan. You have been given the opportunity to create a proposal on behalf of your company to wire and plan the network infrastructure for this office. They use Electronic Medical Records so all computers need internet connectivity to serve patients. The reception desk needs to be able to print customer receipts so the printer will need to be on the network as well.



Objectives

In this project/lab the student will:

- Create a wiring diagram.
- Create a rack diagram.
- Create a bill of materials.
- Create a presentation using a slide desk software such as PowerPoint or Google slides.
- Create an audio/visual file using screen capture software such as Google extension Screencastify.
- Upload the video file to your Google Drive account and share it with your instructor.

Resources

- Microphone for recording
- Microsoft Visio
- Google Sheets
- Google Slides
- Smiles for Miles floorplan downloaded from [HERE](#)

Procedure

1. For the wiring diagram:
 - a. Open the Smiles for Miles Visio Document to see the floorplan of the Hell office.
 - b. Determine where your network drops will be and denote them in the drawing.
 - c. Determine where your telecommunications closet will reside as well as your router, switch, wireless antenna(s), and domain controller will be housed.
 - d. Denote this as a wiring diagram on your Visio floor plan. All drops and equipment should be labelled and numbered where appropriate.
2. For the rack diagram:
 - a. Create another Visio document that includes a rack diagram of all of the equipment you will need to house in your telecommunications room. All equipment should be labelled where appropriate.
3. For the bill of materials:
 - a. Create a spreadsheet that's a bill of materials for all of the cabling, networking, and infrastructure equipment required for the Hell office. BOM should include item, quantity needed, price, and a total cost.

4. For the presentation:

- a. Your electronic documents contain technical details; it's important that you explain your proposal items for the business. Since you aren't able to meet with the owner, create a video to pitch your plan for the business - help the decision maker understand the rationale behind what you are proposing to understand the costs, what you will do, and how it will help their business. Create a presentation using Google slides that details your network infrastructure plan. Record a voiceover as you go through the slides and describe the network infrastructure plan.

The slides should include the following:

- Title Slide with your name
- Recap of the Hell Office Scenario
- Screenshot of Wiring Diagram
- Screenshot of equipment rack
- Screenshot of bill of materials

Reflection

1. What was the most difficult part of planning out this network?
2. Is Smiles for Miles' Hell office a good candidate to be completely wireless? Why or why not?
3. What is the estimated cost you will quote this customer? How could you reduce the cost by 10% to win the contract?

Rubric

Standards	EXEMPLARY	ACCOMPLISHED	DEVELOPING	BEGINNING
Presentation	Student submitted audio/visual presentation highlighting aspects of BOM, Wiring Diagram, and Rack Diagram & thorough rationale behind choices. 10 pt	Student submitted audio/visual presentation highlighting aspects of BOM, Wiring Diagram, and Rack Diagram and satisfactory rationale behind choices. 8 pt	Student submitted audio/visual presentation highlighting some aspects of the network plan and unsatisfactory rationale behind choices. 5 pt	Student did not submit audio/visual presentation 0 pt
Bill of Materials	Student submitted a document that completely described materials needed for the given scenario in correct format. 20 pt	Student submitted a document that mostly described materials needed for the given scenario in correct format. 16 pt	Student submitted a document that did not describe materials needed for a given scenario and/or were not in correct format. 10 pt	Student did not submit a document and/or the document did not show thorough materials and/or was not in the correct format. 0 pt
Wiring Diagram	Student submitted a Visio document which clearly labelled all appropriate network drops for a given scenario. 30 pt	Student submitted a Visio document which clearly labelled most appropriate network drops for a given scenario. 25 pt	Student submitted a Visio doc which somewhat labelled most appropriate network drops for given scenario. 15 pt	Student did not submit a Visio document and/or were improperly labelled and/or did not have appropriate network drops. 0 pt
Rack Diagram	Student submitted a Visio document that contains a labelled rack diagram with all appropriate equipment for the given scenario. 20 pt	Student submitted a Visio document that contains a labelled rack diagram with some appropriate equipment for the given scenario. 16 pt	Student submitted a Visio document that contains an unlabelled rack diagram and/or with inappropriate equipment for a given scenario. 10 pt	Student did not submit a Visio document and/or were improperly labeled and/or did not have appropriate equipment for a given scenario. 0 pt
Reflection Question #1	Student provided a thorough answer to the question in three or more sentences. 7 pt	Student provided a complete answer to the question in two or more sentences. 5 pt	Student provided an incomplete answer to the question. 3 pt	Student did not answer the question 0 pt
Reflection Question #2	Student provided a thorough answer to the question in three or more sentences. 7 pt	Student provided a complete answer to the question in two or more sentences. 5 pt	Student provided an incomplete answer to the question. 3 pt	Student did not answer the question 0 pt

Reflection Question #3	Student provided a thorough answer to the question in three or more sentences. 6 pt	Student provided a complete answer to the question in two or more sentences. 4 pt	Student provided an incomplete answer to the question. 2 pt	Student did not answer the question 0 pt
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