Lab 2: Standards

Brain Storming Task:

You work for a research company as a member of the **Experimental Research Team**. Presently, the company is growing quickly and to exchange files, users must physically walk a disk or drive over to someone else if they wish to share files; this is inefficient. The company wants your team to develop a new way to exchange files electronically between to two computers using a cable. Today, is the first meeting of the team to discuss the problem. Assume, that due to some reason the team cannot meet, and the team leader has asked all the team members to send their suggestions before having a formal meetup. Being the team member submit your suggestions.

Instructions:

1. Identify the two most important topics or components that are necessary for communication to occur.

   The two most important topics or components that are necessary for communication to occur are :-

i.) LAN (Local Area Network)
ii.) Ethernet cable (Network Cable)

protocal,media, encoding ...

i.) Discuss that why the proposed components are important.

a.) LAN – (Local Area Network) : It is a network comprising of devices which are connected together in a centralized physical location or in a small area. For an instance, home and school. It can be small or large, depends upon the area of the usage of the network. For an example, for personal use (home), LAN can be small, but for business purposes it cannot be the same. The advantages of LAN are that it improves the overall security and also it is used for resource and software sharing. Moreover, the exchange of messages an data are in a convenient way. Hence, LAN is a good resource for communication.

b.) Ethernet Cable : Ethernet Cable connection has an enhanced speed (consistent speed), is more reliable and is more secure than a WiFi. Therefore, Ethernet Cable are necessary for communications to occur.

Encoding:

1. Do a Google search and find the ASCII decimal and binary values for the capitalized first letter of your first name . - D

Write the decimal value _68_. Write the binary value_____1000100_____

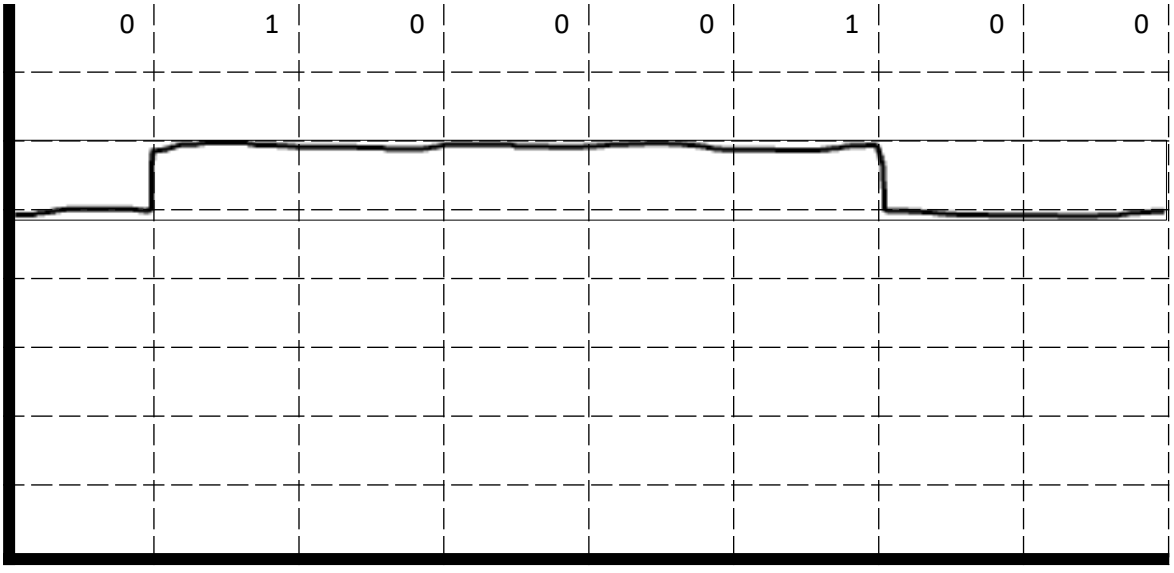
2. Write the binary value at the top of the chart. Write a bit between each vertical dotted line.

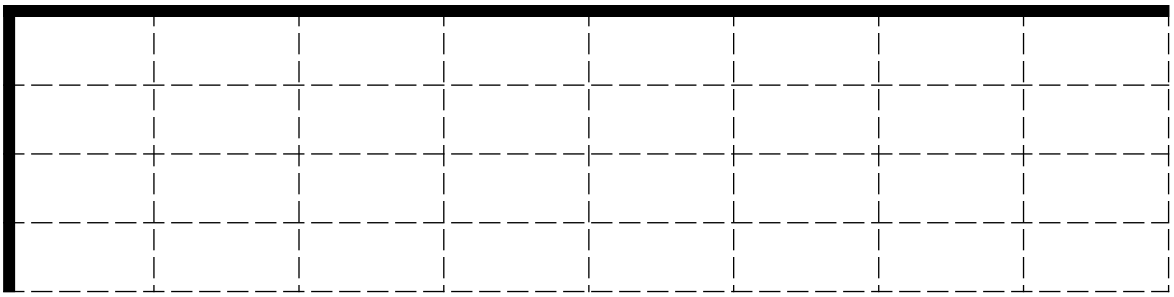
3. Use the chart to map the binary value using NRZI encoding (Non-Return to Zero Inverted). A change in voltage at the beginning of a clock cycle (vertical dotted lines) is a "1". No change in voltage at the beginning of a clock cycle is a "0". The horizontal dotted lines represent voltage 0.5 voltage levels. Map each letter to 6th horizontal line which represents +3 volts. Do not go below the hortizontal axis in mapping your value.

one letter which is D

4. After mapping the value, answer the following questions:
   a. How many characters in total were transmitted? _____2_____
   b. How many bits in total were transmitted? _____8 bits_____
   c. How many times did the signal change? (baud rate) ____4 baud/sec_____
   d. What is the bit rate? __8 bps_____

two changes as per below and aboove





Standard Making Bodies

Do a Google search and write the answers in the space below. Use your own words. DO NOT copy and paste the answers. The answers are all one line of text.

1. International Organization for Standardization (ISO)

1. What is the web site address for the ISO?

   ➔ https://www.iso.org/home.html

2. What type of standard making body is it and who are its members?

   ➔ ISO is an international non-governmental organization, a group of some national standard bodies, consisting of 164 countries (one member per country).

3. What is an example of an ISO standard?

   ➔ A prime example of an ISO standard is ISO 80601- It ensures that the thermometers, used in different hospitals, are calibrated in the similar way or not.

2. Institute of the Electrical and Electronic Engineers (IEEE)

a) What is the web site address for the IEEE?

   ➔ https://www.ieee.org

b) What type of standard making body is it and who are its members?

➔ IEEE is the world's largest technical professional organization, dedicated to advancing technology, for the betterment of humanity. There are in total, 400,000 members, thus making the IEEE body, from more than 160 countries (more than 60% are outside of United States).

c) What is an example of an IEEE standard?

➔ An example of IEEE standard is IEEE 802.14, refers to cable television broadband connection.

3. International Telecommunications Council (ITU-T) Telecommunications

a) What is the web site address for the ITU?

➔ https://www.itu.int/en/Pages/default.aspx

b) What is the web site address for the ITU-Telecom?

➔ https://www.itu.int/en/ITUTELECOM/Pages/default.aspx

c) What type of standard making body is it ITU-T and who are its members?

➔ ITU-T coordinates and combines the standards for telecommunications and Information Communication Technology. There are in total, 193 members from different nations.

d) What is an example of an ITU-T standard?

➔ Example - X. 509 for cybersecurity purposes.

4. What is the name of Canada's standard organization?

➔ **SSC (Standards Council of Canada).**

a) What is its mission or mandate?

➔ The mission of SSC is to coordinate and oversee the efforts of the persons and the organizations involved in the National Standards System.

Grading:

- learnname_Lab2_StandardBodies.docx

Remember replacing **learnname** with **your name** for submission.

Submit using the Lab2 Submission link under MySeneca\Graded Work