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.

**Ans.** The two most important components that are necessary are as follows:

* Signals
* Communication Channels

1. Discuss that why the proposed components are important.

**Ans. Signals: -**

The communication is done with the transmission of the analog and digital electromagnetic signals. The digital signals transmit data in the form of 0 and 1 i.e. in binary form. The communication cannot occur without sending or receiving signals. If the computer has to translate the signals from digital to analog or vice versa. It needs a modem to translate it.

**Communications Networks: -**

The networks are the transmission systems that transmit the signals between devices by electromagnetic or optical signals. The information can be of any type. The network uses IP(internet protocol) to transmit.

**Encoding:**

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



1. Write the decimal value **068** . Write the binary value **01000100**.
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.
4. After mapping the value, answer the following questions:
   1. How many characters in total were transmitted? **2**
   2. How many bits in total were transmitted? **8**
   3. How many times did the signal change? (baud rate) **4**
   4. What is the bit rate? **8**

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| 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 |
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**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)**
2. What is the web site address for the ISO?

**Ans.** https://www.iso.org/home.html

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

**Ans.** It is a global network of national standards bodies. Their members includes the foremost standards organizations in their countries and there is only one member per country.

1. What is an example of an ISO standard?

**Ans.** ISO 9000 Family is the world’s best-known quality management standard for companies and organization of any size.

1. **Institute of the Electrical and Electronic Engineers (IEEE)**
2. What is the web site address for the IEEE?  
   **Ans.** https://www.ieee.org/
3. What type of standard making body is it and who are its members?  
   **Ans.** It’s the largest professional association for the advancement of technology. Their members include the national committees of many countries.
4. What is an example of an IEEE standard?  
   **Ans.** IEEE 802 LAN/MAN group of standards is widely used in computer networking standards for both wired and wireless networks.
5. **International Telecommunications Council (ITU-T) Telecommunications**
6. What is the web site address for the ITU?  
     
   **Ans.** https://www.itu.int/en/Pages/default.aspx
7. What is the web site address for the ITU-Telecom?  
   **Ans.** https://www.itu.int/en/ITUTELECOM/Pages/default.aspx
8. What type of standard making body is it ITU-T and who are its members?  
   **Ans.** ITU-T is generally publishes the standards as recommendations. IT-T has 193 sovereign states who are the members of the ITU.
9. What is an example of an ITU-T standard?

**Ans.** Coding of still images JPEG T.80 and JPEG 2000 T.800 series is one of the key standards published by ITU-T

1. **What is the name of Canada’s standard organization?**
2. What is its mission or mandate?

**Ans.** The mandate of the council is to promote efficient and effective voluntary standardization in Canada, where standardization is not expressly provided for by law.

**Grading:**

* learnname\_Lab2\_StandardBodies.docx

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

Submit using the Lab2 Submission link under MySeneca\Graded Work