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.
   1. Modem
   2. Bluetooth
2. Discuss that why the proposed components are important.
   1. The components mentioned above (among many others), are important because without them, computers would not be able to request, receive, transfer information and share data with other computers. Computers need these devices to be able to do so. For example, on its own, a computer cannot connect to the internet to view a webpage, or send an email, it needs a modem to do that. This, among many other reasons, is why communication devices are important.

**Encoding:**

1. Do a Google search and find the ASCII decimal and binary values for the capitalized first letter of your first name .
2. Write the decimal value: **83** .Write the binary value: **01010011**
3. Write the binary value at the top of the chart. Write a bit between each vertical dotted line.
4. 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.
5. After mapping the value, answer the following questions:
   1. How many characters in total were transmitted? **1 single character**
   2. How many bits in total were transmitted? **8bits were transferred**
   3. How many times did the signal change? (baud rate) **5 times**
   4. What is the bit rate? **8bits/s**

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| **0** | **1** | **0** | **1** | **0** | **0** | **1** | **1** |
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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?
   1. The website address is: https://www.iso.org/home.html
3. What type of standard making body is it and who are its members?
   1. The ISO is an international standard making organization and it’s members are about 165 of the 195 countries in the world.
4. What is an example of an ISO standard?
   1. An example of an ISO standard would be the ISO 9001:2015, which is a standard for quality management.
5. **Institute of the Electrical and Electronic Engineers (IEEE)**
6. What is the web site address for the IEEE?
   1. The IEEE’s website address is: https://www.ieee.org/
7. What type of standard making body is it and who are its members?
   1. The IEEE is an industrial standard making body. People with technical interests such as engineers and scientists are members of the IEEE. It has over 419, 000 members from over 160 countries.
8. What is an example of an IEEE standard?
   1. An IEEE standard is IEEE 802.11, it is a standard responsible for communication on Wireless LAN’s.
9. **International Telecommunications Council (ITU-T) Telecommunications**
10. What is the web site address for the ITU?
    1. The ITU’s website is: https://www.itu.int/en/Pages/default.aspx
11. What is the web site address for the ITU-Telecom?
    1. ITU-Telecom’s website address is : https://www.itu.int/en/itutelecom/Pages/default.aspx
12. What type of standard making body is it ITU-T and who are its members?
    1. The ITU-T is an international standard making body. Its members are companies and organizations in countries that are part of the United Nations (UN).
13. What is an example of an ITU-T standard?
    1. An ITU-T standard is the X.509 standard for cybersecurity.
14. **What is the name of Canada’s standard organization?**
    1. **Canada’s standard organization is called the Standards Council of Canada, or the SCC.**
15. What is its mission or mandate?
    1. Its mission involves working with stakeholders and customers to provide efficient and effective standardization to strengthen Canada’s competitiveness and social well-being.

**Grading:**

* learnname\_Lab2\_StandardBodies.docx

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

Submit using the Lab2 Submission link under MySeneca\Graded Work