

Assignment on Hardware for CS50T

Starting in 2021, all assignments in CS50T are out of 10 points. A score of 7 points or better (70%) is required to be considered to have "passed" an assignment in this course. Please do not resubmit an assignment if you have already obtained a passing score. You don't receive a final grade at the end of the course, so it will have no bearing on your certificate, and it will only slow down our graders!

Unlike CS50x, assignments in this course are graded on a set schedule, and depending on when you submitted, it may take up to three weeks for your work to be graded. Do be patient! Project scores and assignment status on cs50.me/cs50t (e.g. "Your submission has been received...") will likely change over time and are not final until the scores have been released.

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What is your GitHub username?

You only need to tell us if you are concerned about checking your progress in the course and/or you want a free CS50 Certificate after you satisfy all of the requirements of the course. If you do not already have a GitHub account, you can sign up for one at <https://github.com/join>. You can then use this account to log in to cs50.me/cs50t to track your progress in the course (your progress will only show up after you have received at least one score release email from CS50 Bot, so do be patient!). Don't worry about seeing a 'No Submissions' message on submit.cs50.io, if you find that. The course collects submissions using Google Forms, and only the gradebook on cs50.me/cs50t is important! If you do decide to provide us with a GitHub username, BE CERTAIN IT IS CORRECT. If you provide the wrong username, you will not be able to see your scores.

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Acknowledgement *

Unlike our course CS50x, grading in this course is not done automatically, and there are human reviewers for each assignment. Grading may, depending on exactly when in our grading cycle you submit, take up to three weeks from the time you submit. Your grade status may change in your gradebook at cs50.me/cs50t in the interim, but grades are never final until you receive a score release email from CS50 Bot (on this first assignment, in fact, your gradebook may not even become active until that score release email). The staff cannot entertain requests for expedited grading under any circumstance. Your patience is appreciated.

☒ I understand.

This course is graded by human graders, and has a ZERO TOLERANCE plagiarism and collaboration policy. If **any** of your answers are copied and pasted from, or obviously based on (a) an online source or (b) another student's work in the course, in **any** of the course's six assignments, you will be reported to edX and removed from the course immediately. There is no opportunity for appeal. There are no warnings or second chances. *

It is far better, we assure you, to leave an answer blank rather than risk it. This may be an online course, but it is offered by Harvard, and we're going to hold you to that standard.

☒ I understand this policy and agree to its terms; I hereby affirm that I will not plagiarize any answers in this course.



What are you hoping to get out of this course?

Know more foundations about computer.

If, like me, you sometimes count using your fingers, odds are you can count up to 5 things on one hand (using 5 fingers). But that's if you're using "unary" notation, whereby you only have a single digit (pun intended) at your disposal, a finger, which you can think of as a 1. Binary, by contrast, allows you to use two digits, 0 and 1. How high could you count on one hand (with 5 fingers) using binary? Assume that a raised finger represents a 1 and a lowered finger represents a 0. 1 point

32

Recall that we looked at ASCII in lecture, which uses just 7 or 8 bits to represent letters of the alphabet. Read up on "Unicode," as via Google, and explain in your own words how Unicode is able to represent many more symbols than can ASCII, which is particularly helpful for written languages with many more characters than English. 1 point

ASCII use 8 bits, so it can only represent 256 characters in limit. The Unicode standard defines Unicode Transformation Formats (UTF). What's more, UTF-8, the dominant encoding on the World Wide Web, and it use 4 bytes(32 bits), which means it can represent 4294967296 characters theoretically.

01000001 01101110 01110011 01110111 01100101 01110010 00100000
01101001 01110011 00100000 00110100 00110010 00101110

1 point

There's a way to make this meaningful; find it!

Answer is 42.



Describe at least one key difference between RAM and hard disk.

1 point

1. Data is preserved when power is off on a hard disk. But RAM is not preserved when power is off.
2. RAM is Fast memory and the hard disk is slower.

Some computers, particularly PCs, come with stickers that say "Intel Inside." What is it that's inside of most computers that's made by Intel? In your own words, what does that hardware do?

1 point

It means most computers have Intel CPU inside, CPU is a brain in computer which can do all the thinking.

Roughly how much RAM might a new laptop come with these days?

1 point

more than 8GB RAM

Roughly how much disk space might a new laptop come with these days?

1 point

more than 256GB SSD

Name a single device that can be connected to a laptop or desktop via "USB".

1 point

USB Flash Drives



What purpose does an operating system serve?

1 point

The operating system serve can make sure all devices work and can intercommunicate. And gives you the graphical interface that you see.

Even though both are wireless, how does Wi-Fi differ from Bluetooth?

1 point

You're welcome to Google as needed, but take care to distinguish the two in your own words.

source: <https://www.geeksforgeeks.org/difference-between-bluetooth-and-wi-fi/>

The difference between Bluetooth and Wi-Fi:

1. Bluetooth requires low bandwidth. While Wi-Fi requires high bandwidth.
2. Bluetooth requires a Bluetooth adapter on all devices for connectivity. While Wi-Fi: requires wireless adaption of all devices and a wireless router for connectivity.
3. Bluetooth consumes low power. While Wi-Fi: consumes high power.
4. The security of Bluetooth is less in comparison to Wi-Fi.
5. Bluetooth is less flexible means a limited number of users are supported. While Wi-Fi supports a large number of users.
6. The radio signal range of Bluetooth is ten meters. While in Wi-Fi this range is a hundred meters.

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