# MODULE 2 UNIT 4

**Assignment:**

**Achieving scale without centralization?**

Learning outcomes:

LO7: Investigate the role of mining in bootstrapping Bitcoin's infrastructure.

LO8: Evaluate current issues with scaling the Bitcoin blockchain and how they can be addressed.

### Name:

#### Instructions and guidelines (Read carefully)

##### Instructions

1. Insert your first and last names in the space provided above, as well as in the **file name.** Save the file as: **First name Last name M2 U4 Assignment – e.g., Zadie Smith M2 U4 Assignment**. **NB:** *Please ensure that you use the name that appears in your participant profile on the Online Campus.*

2. Write all your answers in this document. There is an instruction that says, “Start writing here” under the question. Please type your answer there.

3. Submit your assignment in **Microsoft Word only**. No other file types will be accepted.

4. **Do** **not delete the plagiarism declaration** or the **assignment instructions and guidelines**. They must remain in your assignment when you submit.

**PLEASE NOTE**: **Plagiarism cases will be investigated in line with the terms and conditions for participants.**

IMPORTANT NOTICE: Please ensure that you have checked the Online Campus for the due date for this assignment.

##### Guidelines

1. There are 4 pages and 1 question in this assignment.

2. Make sure that you have carefully read and fully understood the question before answering it. Answer the question fully but concisely and as directly as possible. Follow all specific instructions for individual parts of the question (e.g., “list”, “in point form”).

3. Answer the question in your own words. Do not copy any text from the video sets, readings or other sources. **The assignment must be your own work only.**

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| **Plagiarism declaration:** |
| **1. I know that plagiarism is wrong. Plagiarism is to use another’s work and pretend that it is one’s own.**  **2. This assignment is my own work.**  **3. I have not allowed, and will not allow, anyone to copy my work with the intention of passing it off as his or her own work.**  **4. I acknowledge that copying someone else’s assignment (or part of it) is wrong, and declare that my assignments are my own work.** |

Review guidelines:

Your assignment will be reviewed according to your insight into how blockchain technology could scale while remaining decentralized, as well as the structure and logic of your writing. View the detailed rubric on the Online Campus.

### Question 1

The article “[The promise of blockchain](https://www.mckinsey.com/industries/financial-services/our-insights/the-promise-of-blockchain)” addresses the challenge of scaling blockchain technology:

The technology’s consensus-based validation mechanism, its continuous replication, and the ever-growing amount of stored data means that the larger the blockchain grows, the greater become the requirements for storage, bandwidth, and computational power. That leads to a risk of centralization if the blockchain becomes so large that only a few nodes are able to process a block.

(Higginson et al. 2017)

Drawing on what you have learned about consensus algorithms and Bitcoin transactions, as well as the issues with scaling covered so far in this unit, write a clear and coherent report in which you address the following twoquestions:

1. Would a centralized blockchain undermine the technology’s purpose as a shared public ledger? And if so, why?
2. How could blockchain technology achieve scale while remaining decentralized?

(400-800 words)

Note:

We highly recommend that you avoid disclosing any confidential information in your assignments. Although you are encouraged to draw on real-world experience during the program, we would urge you to use pseudonyms (false names) wherever possible. You are entirely responsible for ensuring that you do not disclose any information that is protected by confidentiality undertakings – we will ensure that all information is treated in accordance with our privacy policy.

Please read Section 4 of the Honor Code in the Orientation Module course handbook for more guidance.

Start writing here: