OpenCerts

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OVERVIEW / INTRODUCTION

OpenCerts is a platform using blockchain to provide an easy and reliable way to issue and validate tamper-proof certificates

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How it works hash issuance....

```
},
"privacy": {},
"signature": {
  "type": "SHA3MerkleProof",
  "targetHash": "cbd224a72af5e0050bd58ab2264094cbacac0f19f7f430e347cad451ae8c590d",
  "proof": [],
  "merkleRoot": "cbd224a72af5e0050bd58ab2264094cbacac0f19f7f430e347cad451ae8c590d"
}
```

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One way hash

- Simplified hashing algorithm
  - Sum all numbers
  - Extract the Ones value
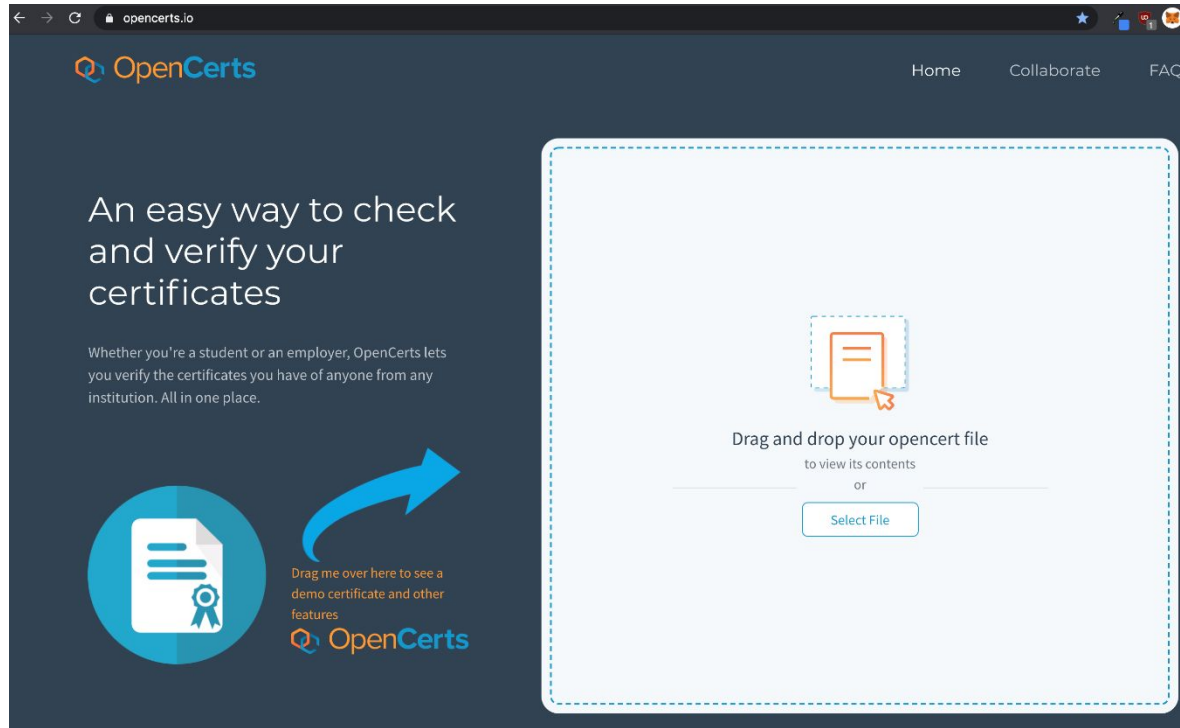
- Digit 1:   100
- Digit 2:   28

- 100 + 28 = 128

- Hash value = 8

- Given Hash value = 8
- Cannot reverse to original numbers

Digit 1	Digit 2
1000000	256448
111111	777
123	345

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OpenCerts.io

Verification

Additional Info

CERTIFICATE   **TRANSCRIPT**   MEDIA   View another

OpenCerts Privacy Filter Enabled
Edit this certificate by removing sensitive information by clicking on the edit button. Downloaded certificate remains valid!

Govtech Demo Certificate

NAME   : Your Name   DOCUMENT ID   : 53b75bbe
COURSE   : Govtech Demo   DATE OF   : MAY 2019
NRIC/FIN   : SXXXXXXXY   ISSUANCE
STUDENT ID : 123456   DATE OF   : AUG 2017
                              ADMISSION
                              DATE OF   : AUG 2022
                              GRADUATION

Transcript

Course Code	Name	Grade	Units	Semester
CS 1110	Introduction to Programming	A+	3	1
CS 2110	Object Oriented Programming in Java	A+	4	1
ECON 3030	Microeconomics	A+	4	2
ECON 3040	Macroeconomics	A	4	2
ECON 3120	Econometrics	A-	4	2

DemoSignature

John Demo
Dean of Demos, Govtech

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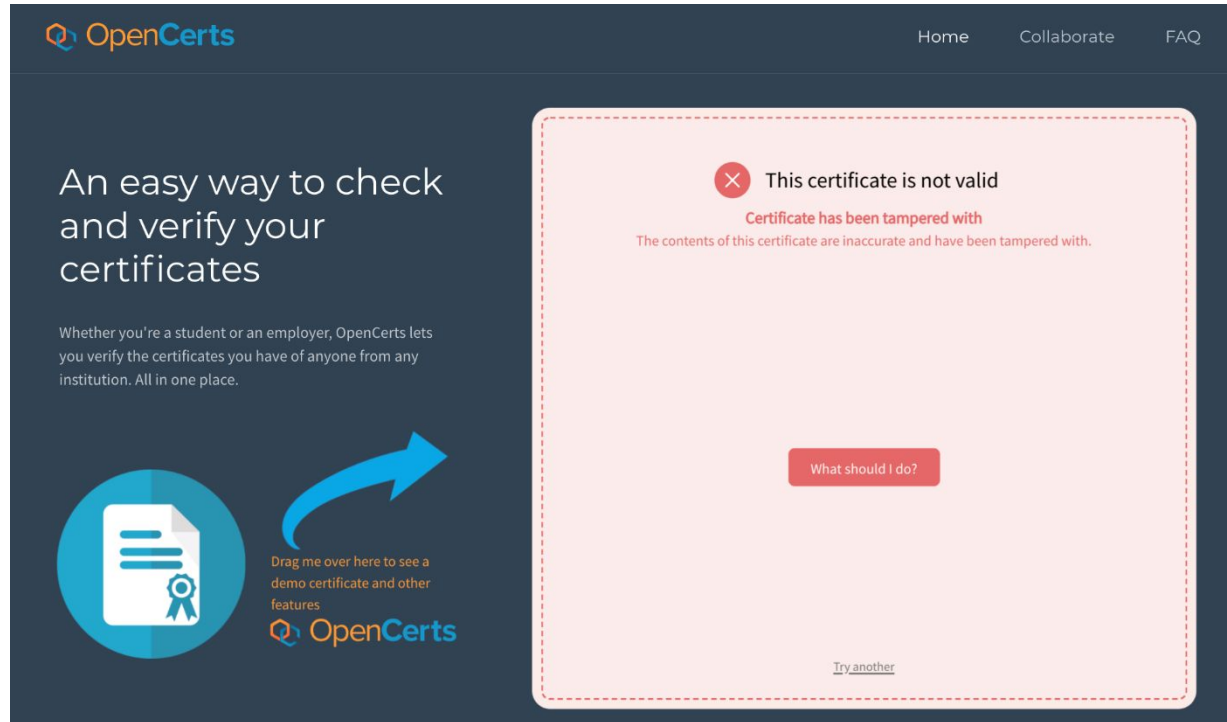GOVTECH
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Tampering (1)

```
{
  "name": "d50239be-963e-48d4-ba5f-c9bbc096eb9d:string:Econometrics",
  "grade": "cbc52f57-b54a-4a22-90f5-3da13500c099:string:A-",
  "courseCredit": "74d5d074-859a-472f-91a6-cd2807ae44a8:string:4",
  "courseCode": "a098f8d1-db6c-436d-918b-4c0bbd4d9f1b:string:ECON 3120",
  "examinationDate": "46e564b2-12e1-4ee6-b44a-9127130a029c:string:2018-05-01T00:00:00+08:00",
  "semester": "25b73bc3-87e9-42d4-8c92-6e6a0f58e962:string:2"
}
```

Original version

```
{
  "name": "d50239be-963e-48d4-ba5f-c9bbc096eb9d:string:Econometrics",
  "grade": "cbc52f57-b54a-4a22-90f5-3da13500c099:string:A+",
  "courseCredit": "74d5d074-859a-472f-91a6-cd2807ae44a8:string:4",
  "courseCode": "a098f8d1-db6c-436d-918b-4c0bbd4d9f1b:string:ECON 3120",
  "examinationDate": "46e564b2-12e1-4ee6-b44a-9127130a029c:string:2018-05-01T00:00:00+08:00",
  "semester": "25b73bc3-87e9-42d4-8c92-6e6a0f58e962:string:2"
}
```

Tampered version

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Tampering (2)

Resources

- Document Verification   https://opencerts.io

- Documentation   https://docs.opencerts.io

- Github Repository   https://github.com/OpenCerts

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Q&A

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Thank you

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