

Practical No. 2

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Title: Block Structure

Aim: Write a program to implement a block structure in java.

Source Code:

```
import java.util.Date;
```

```
class Block {
```

```
    public int index;
```

```
    public String data;
```

```
    public String previousHash;
```

```
    public String hash;
```

```
    public long timestamp;
```

```
    public Block(String data, String previousHash) {
```

```
        this.index = 0;
```

```
        this.timestamp = new Date().getTime();
```

```
        this.data = data;
```

```
        this.previousHash = previousHash;
```

```
        this.hash = calculateHash();
```

```
    }
```

```
    public String calculateHash() {
```

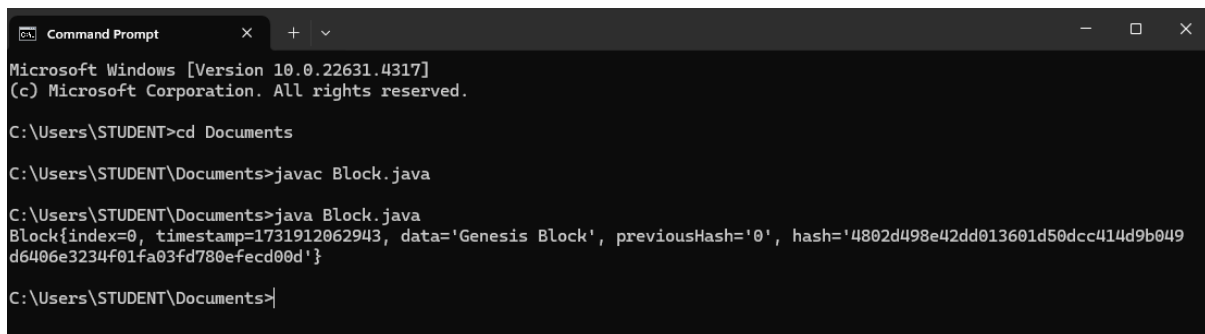
```
        return HashUtil.applySHA256(previousHash + Long.toString(timestamp) + data);
```

```
    }
```

@Override

```
public String toString() {  
    return "Block{" +  
        "index=" + index +  
        ", timestamp=" + timestamp +  
        ", data=" + data + "\" +  
        ", previousHash=" + previousHash + "\" +  
        ", hash=" + hash + "\" +  
        '}'";  
}  
  
public static void main(String[] args) {  
    Block genesisBlock = new Block("Genesis Block", "0");  
    System.out.println(genesisBlock);  
}  
}
```

Output:



```
Microsoft Windows [Version 10.0.22631.4317]  
(c) Microsoft Corporation. All rights reserved.  
  
C:\Users\STUDENT>cd Documents  
  
C:\Users\STUDENT\Documents>javac Block.java  
  
C:\Users\STUDENT\Documents>java Block.java  
Block{index=0, timestamp=1731912062943, data='Genesis Block', previousHash='0', hash='4802d498e42dd013601d50dcc414d9b049d6406e3234f01fa03fd780efecd00d'}  
  
C:\Users\STUDENT\Documents>
```