

```
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```

```
using System;
using System.Collections.Generic;
using System.Text;

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namespace NXTBlocks.Blockchain.Demo05
{
    public class Blockchain
    {
        public IList<Block> Chain { set; get; }
        public int Difficulty { set; get; } = 2;

        public Blockchain()
        {
            InitializeChain();
            AddGenesisBlock();
        }

        public void InitializeChain()
        {
            Chain = new List<Block>();
        }
    }
}
```

```
public Block CreateGenesisBlock()
{
    return new Block(DateTime.Now, null, "{}");
}

public void AddGenesisBlock()
{
    Chain.Add(CreateGenesisBlock());
}

public Block GetLatestBlock()
{
    return Chain[Chain.Count - 1];
}

public void AddBlock(Block block)
{
    Block latestBlock = GetLatestBlock();
    block.Index = latestBlock.Index + 1;
    block.PreviousHash = latestBlock.Hash;
    block.Mine(this.Difficulty);
    Chain.Add(block);
}

public bool IsValid()
{
    for (int i = 1; i < Chain.Count; i++)
    {
        Block currentBlock = Chain[i];
        Block previousBlock = Chain[i - 1];

        if (currentBlock.Hash != currentBlock.CalculateHash())
        {
            return false;
        }

        if (currentBlock.PreviousHash != previousBlock.Hash)
        {
```

```
        return false;
    }
}
return true;
}
```