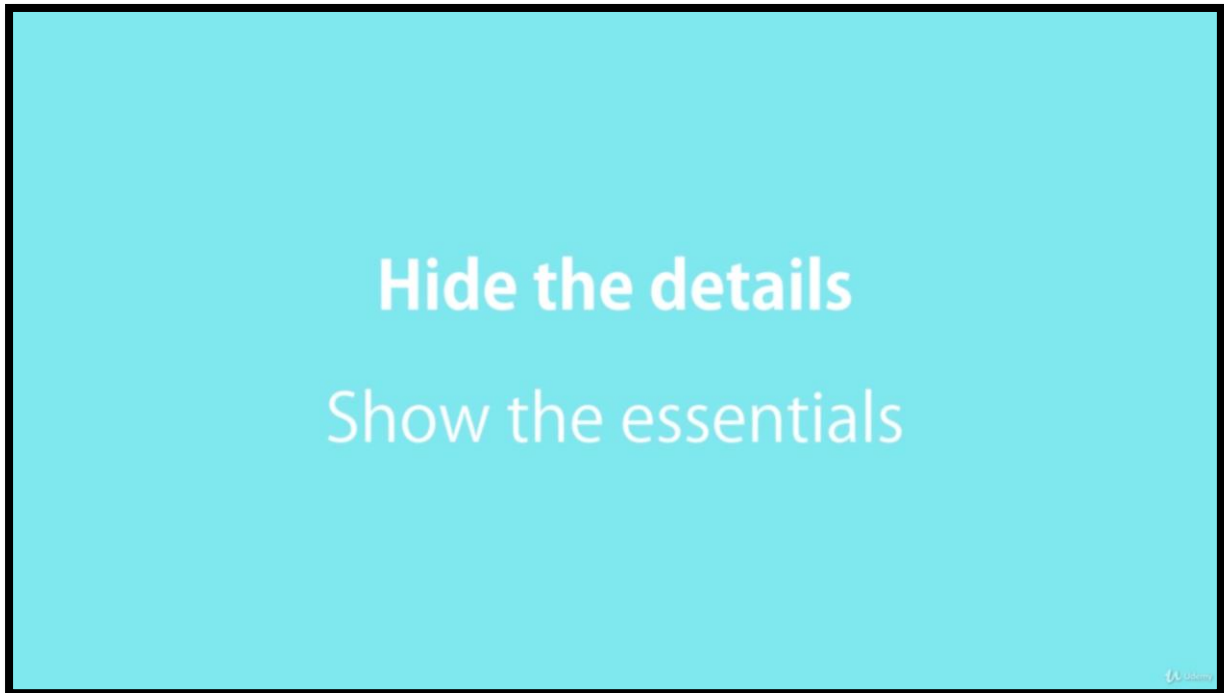


Encapsulation

It refers to the practice of bundling data (attributes or properties) and methods (functions) that operate on that data into a single unit, known as "classes". Encapsulation helps in organizing and managing code by restricting direct access to internal data and providing controlled access through methods.

Abstraction



Abstraction in Constructor Functions

```
function BankAccount(balance)
{
    // Private Property
    let _balance = balance;

    // Private Method
    let checkSufficientBalance = function(amount)
    {
        return amount <= _balance;
    }

    this.withdraw = function(amount)
    {
        const isSufficientBalance = checkSufficientBalance(amount);
        if(isSufficientBalance)
        {
            _balance -= amount;
            return;
        }

        console.log("Insufficient funds");
    }

    this.deposit = function(amount)
    {
        _balance += amount;
    }

    this.getBalance = function()
    {
        return _balance;
    }
}

const account = new BankAccount(1000);
account.deposit(500);
account.withdraw(200);
console.log(account.getBalance()); // Output: 1300
```

Abstraction in Classes

```
const _balance = new WeakMap();
const _checkSufficientBalance = new WeakMap();

class BankAccount
{
  constructor(balance)
  {
    _balance.set(this, balance);
    _checkSufficientBalance.set(this, (amount)=>
    {
      let balance = _balance.get(this);
      return amount <= balance;
    });
  }

  getBalance()
  {
    return _balance.get(this);
  }

  deposit(amount)
  {
    let balance = _balance.get(this);
    _balance.set(this, balance + amount);
  }

  withdraw(amount)
  {
    const isSufficientBalance =
    _checkSufficientBalance.get(this)(amount);
    if(isSufficientBalance)
    {
      let balance = _balance.get(this);
      _balance.set(this, balance - amount);
      return;
    }

    console.log("Insufficient Balance");
  }
}

const account = new BankAccount(1000);
account.deposit(500);
account.withdraw(200);
console.log(account.getBalance()); // Output: 1300
account.withdraw(2000); //Insufficient Balance
```