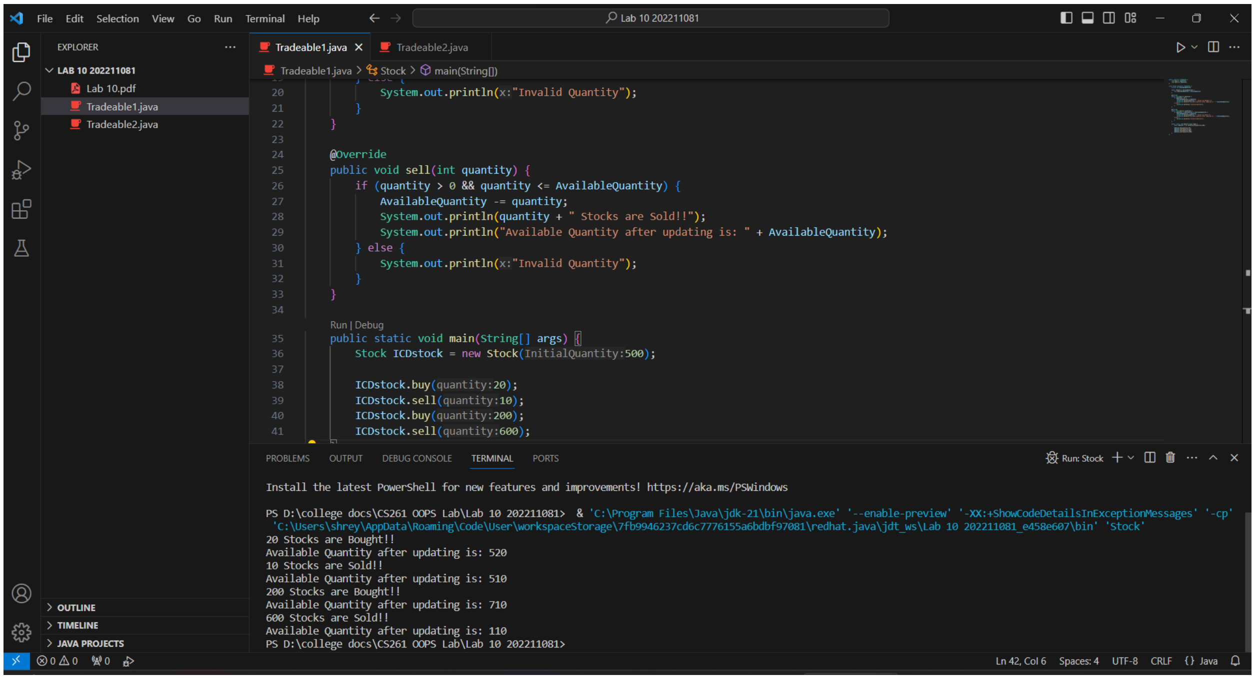
Code:

```
public interface Tradeable1 {
    void buy(int quantity);
    void sell(int quantity);
}

class Stock implements Tradeable1 {
    private int AvailableQuantity;

    public Stock(int InitialQuantity) {
        this.AvailableQuantity = InitialQuantity;
    }

    @Override
    public void buy(int quantity) {
        if (quantity > 0) {
            AvailableQuantity += quantity;
            System.out.println(quantity + " Stocks are Bought!!");
            System.out.println("Available Quantity after updating is: " +
AvailableQuantity);
        } else {
            System.out.println("Invalid Quantity");
        }
    }

    @Override
    public void sell(int quantity) {
        if (quantity > 0 && quantity <= AvailableQuantity) {
            AvailableQuantity -= quantity;
            System.out.println(quantity + " Stocks are Sold!!");
            System.out.println("Available Quantity after updating is: " +
AvailableQuantity);
        } else {
            System.out.println("Invalid Quantity");
        }
    }

    public static void main(String[] args) {
        Stock ICDstock = new Stock(500);
        ICDstock.buy(20);
        ICDstock.sell(10);
        ICDstock.buy(200);
        ICDstock.sell(600);
    }
}
```

Output:

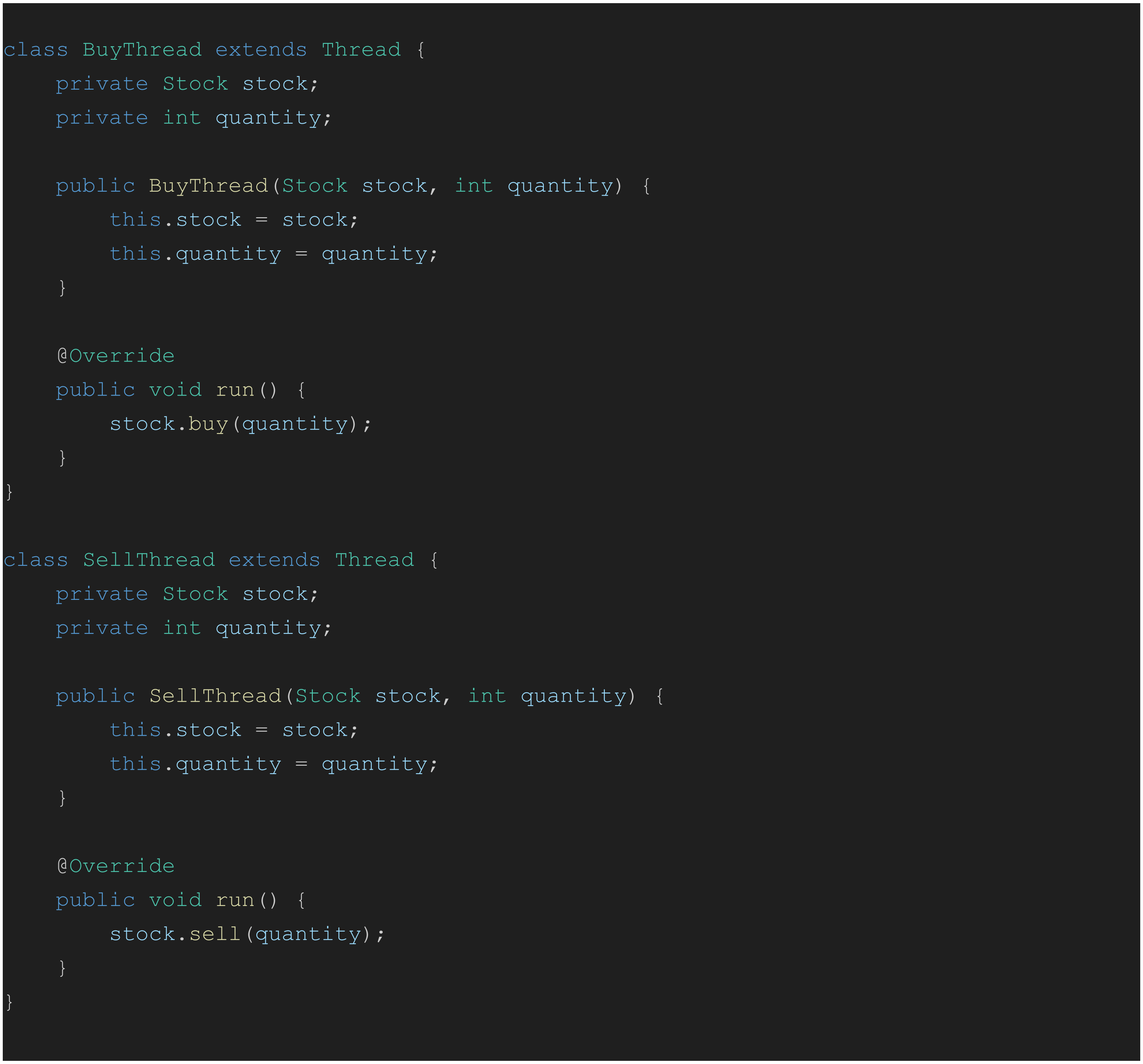


```
            System.out.println(x:"Invalid Quantity");
        }
    }

    @Override
    public void sell(int quantity) {
        if (quantity > 0 && quantity <= AvailableQuantity) {
            AvailableQuantity -= quantity;
            System.out.println(quantity + " Stocks are Sold!!");
            System.out.println("Available Quantity after updating is: " + AvailableQuantity);
        } else {
            System.out.println(x:"Invalid Quantity");
        }
    }

    Run | Debug
    public static void main(String[] args) {
        Stock ICDstock = new Stock(InitialQuantity:500);

        ICDstock.buy(quantity:20);
        ICDstock.sell(quantity:10);
        ICDstock.buy(quantity:200);
        ICDstock.sell(quantity:600);
```

```
Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS D:\college docs\CS261 OOPS Lab\Lab 10 202211081>  & 'C:\Program Files\Java\jdk-21\bin\java.exe' '--enable-preview' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp'
 'C:\Users\shrey\AppData\Roaming\Code\User\workspaceStorage\7fb9946237cd6c7776155a6bdbf97081\redhat.java\jdt_ws\Lab 10 202211081_e458e607\bin' 'Stock'
20 Stocks are Bought!!
Available Quantity after updating is: 520
10 Stocks are Sold!!
Available Quantity after updating is: 510
200 Stocks are Bought!!
Available Quantity after updating is: 710
600 Stocks are Sold!!
Available Quantity after updating is: 110
PS D:\college docs\CS261 OOPS Lab\Lab 10 202211081>
```

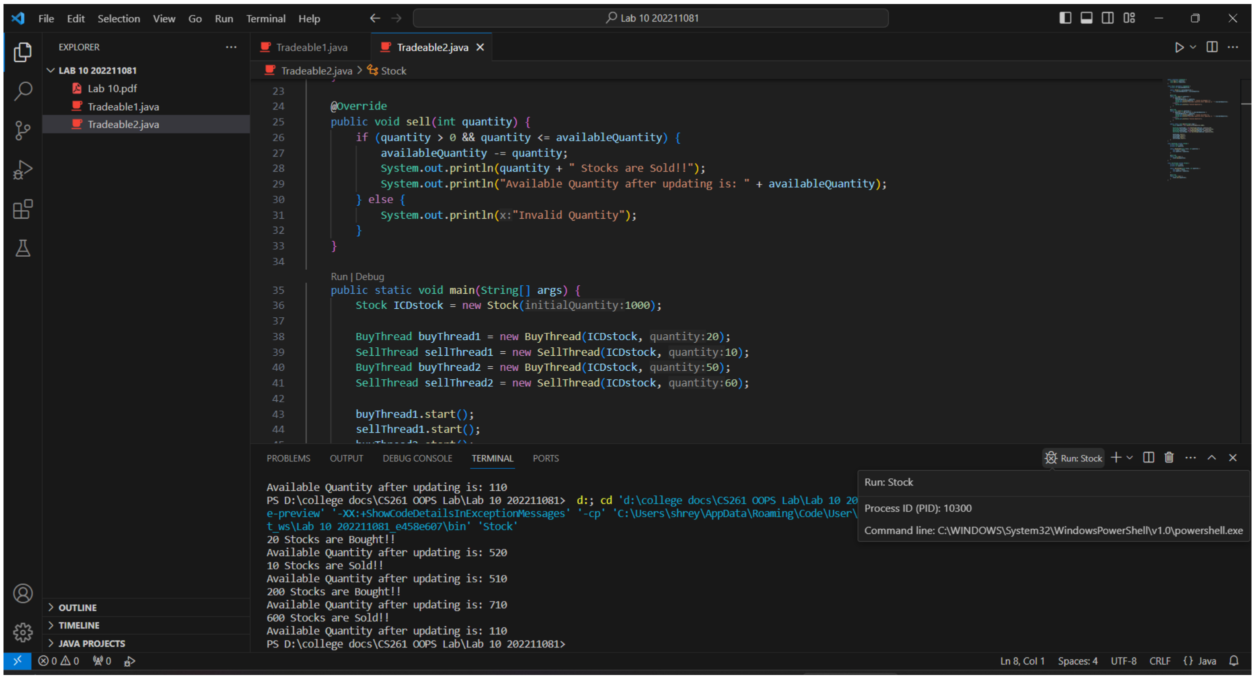
Code:

```
public interface Tradeable2 {
    void buy(int quantity);
    void sell(int quantity);
}

class Stock implements Tradeable2 {
    private int availableQuantity;

    public Stock(int initialQuantity) {
        this.availableQuantity = initialQuantity;
    }

    @Override
    public void buy(int quantity) {
        if (quantity > 0) {
            availableQuantity += quantity;
            System.out.println(quantity + " Stocks are Bought!!");
            System.out.println("Available Quantity after updating is: " +
availableQuantity);
        } else {
            System.out.println("Invalid Quantity");
        }
    }

    @Override
    public void sell(int quantity) {
        if (quantity > 0 && quantity <= availableQuantity) {
            availableQuantity -= quantity;
            System.out.println(quantity + " Stocks are Sold!!");
            System.out.println("Available Quantity after updating is: " +
availableQuantity);
        } else {
            System.out.println("Invalid Quantity");
        }
    }

    public static void main(String[] args) {
        Stock ICDstock = new Stock(1000);

        BuyThread buyThread1 = new BuyThread(ICDstock, 20);
        SellThread sellThread1 = new SellThread(ICDstock, 10);
        BuyThread buyThread2 = new BuyThread(ICDstock, 50);
        SellThread sellThread2 = new SellThread(ICDstock, 60);

        buyThread1.start();
        sellThread1.start();
        buyThread2.start();
        sellThread2.start();
    }
}
```



```java
class BuyThread extends Thread {
    private Stock stock;
    private int quantity;

    public BuyThread(Stock stock, int quantity) {
        this.stock = stock;
        this.quantity = quantity;
    }

    @Override
    public void run() {
        stock.buy(quantity);
    }
}

class SellThread extends Thread {
    private Stock stock;
    private int quantity;

    public SellThread(Stock stock, int quantity) {
        this.stock = stock;
        this.quantity = quantity;
    }

    @Override
    public void run() {
        stock.sell(quantity);
    }
}
```

Output:



```java

    @Override
    public void sell(int quantity) {
        if (quantity > 0 && quantity <= availableQuantity) {
            availableQuantity -= quantity;
            System.out.println(quantity + " Stocks are Sold!!");
            System.out.println("Available Quantity after updating is: " + availableQuantity);
        } else {
            System.out.println(x:"Invalid Quantity");
        }
    }

    Run | Debug
    public static void main(String[] args) {
        Stock ICDstock = new Stock(initialQuantity:1000);

        BuyThread buyThread1 = new BuyThread(ICDstock, quantity:20);
        SellThread sellThread1 = new SellThread(ICDstock, quantity:10);
        BuyThread buyThread2 = new BuyThread(ICDstock, quantity:50);
        SellThread sellThread2 = new SellThread(ICDstock, quantity:60);

        buyThread1.start();
        sellThread1.start();
```

```
Available Quantity after updating is: 110
PS D:\college docs\CS261 OOPS Lab\Lab 10 202211081>  d:; cd 'd:\college docs\CS261 OOPS Lab\Lab 10 20
e-preview' '-XX:+ShowCodeDetailsInExceptionMessages' '-cp' 'C:\Users\shrey\AppData\Roaming\Code\User\
t_ws\Lab 10 202211081_e458e607\bin' 'Stock'
20 Stocks are Bought!!
Available Quantity after updating is: 520
10 Stocks are Sold!!
Available Quantity after updating is: 510
200 Stocks are Bought!!
Available Quantity after updating is: 710
600 Stocks are Sold!!
Available Quantity after updating is: 110
PS D:\college docs\CS261 OOPS Lab\Lab 10 202211081>
```

Run: Stock

Process ID (PID): 10300

Command line: C:\WINDOWS\System32\WindowsPowerShell\v1.0\powershell.exe