

Program and Output

Program :

1. *Program.java*

```
public class Program
{
    public static void main(String[] args) {
        WaterJug w = new WaterJug(); // creating object
        w.checkGoal();               //method calling
    }
}
```

2. *WaterJug.java*

```
import java.util.*;
public class WaterJug
{
    int a_max = 4;
    int b_max = 3;
    int a = 0;
    int b = 0;
    int goal = 2;
    void checkGoal()
    {
        int fin = 0;
        while(fin != 1)
        {
            if((this.a == this.goal) || (this.b == this.goal)) { fin = 1; }

            if(this.a==0)
            {
                fillA();
            }

            else if ((this.a > 0) && (this.b != this.b_max))
```

```

        {
            transferAtoB();

        }
    else if ((this.a > 0) && (this.b == this.b_max))
    {
        emptyB();

    }
}

void fillA()
{
    this.a = this.a_max;
    System.out.println "{" + this.a + "," + this.b + "}");
}

void fillB()
{
    this.b = this.b_max;
    System.out.println "{" + this.a + "," + this.b + "}");
}

void transferAtoB()
{
    int fin = 0;
    while(fin != 1) {

        this.b += 1;
        this.a -= 1;

        if((this.b == this.b_max) || (this.a == 0)) { fin = 1;}
    }
    System.out.println "{" + this.a + "," + this.b + "}");
}

void emptyA()
{
    this.a=0;
}

```

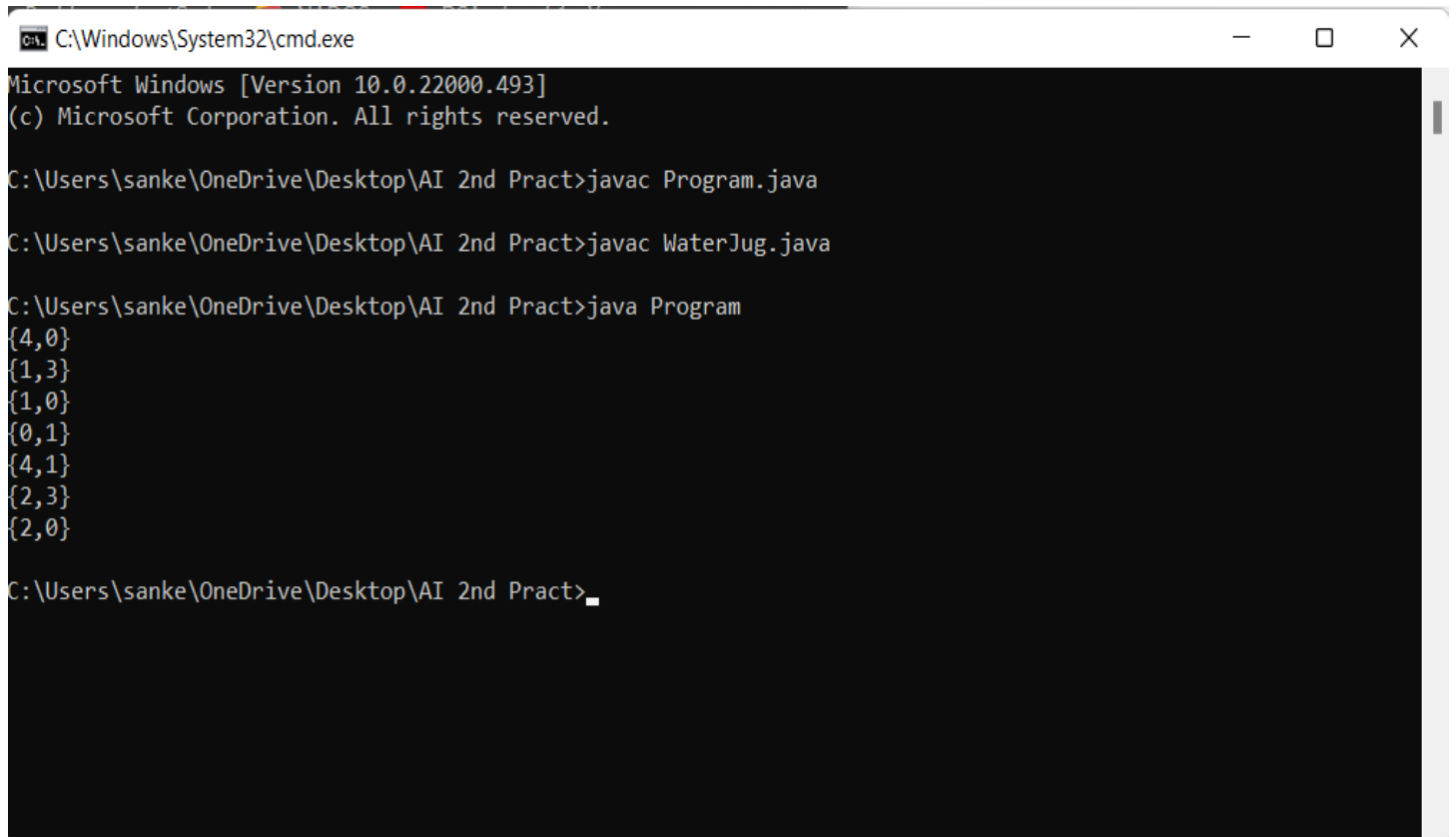
```

        System.out.println("{} + this.a + "," + this.b + "}");
    }
    void emptyB()
    {
        this.b=0;
        System.out.println("{} + this.a + "," + this.b + "}");
    }

}

```

Output :



The screenshot shows a Windows Command Prompt window titled "C:\Windows\System32\cmd.exe". The window displays the following commands and output:

```

Microsoft Windows [Version 10.0.22000.493]
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C:\Users\sanke\OneDrive\Desktop\AI 2nd Pract>javac Program.java

C:\Users\sanke\OneDrive\Desktop\AI 2nd Pract>javac WaterJug.java

C:\Users\sanke\OneDrive\Desktop\AI 2nd Pract>java Program
{4,0}
{1,3}
{1,0}
{0,1}
{4,1}
{2,3}
{2,0}

C:\Users\sanke\OneDrive\Desktop\AI 2nd Pract>

```