**COS 20007**

**Task 3.1**

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1. **Code**
2. Counter.cs

using System;

namespace ClockClass

{

public class Counter

{

private int \_count;

private string \_name;

public string Name

{

get

{

return \_name;

}

set

{

\_name = value;

}

}

public int Ticks

{

get

{

return \_count;

}

}

public Counter(string name)

{

\_name = name;

\_count = 0;

}

public void Increment()

{

\_count ++;

}

public void Reset()

{

\_count = 0;

}

}

}

1. Clock.cs

using System;

namespace ClockClass

{

public class Clock

{

private Counter \_seconds;

private Counter \_minutes;

private Counter \_hours;

public Clock()

{

\_seconds = new Counter("seconds");

\_minutes = new Counter("minutes");

\_hours = new Counter("hours");

}

public void Tick()

{

\_seconds.Increment();

if (\_seconds.Ticks == 60)

{

\_seconds.Reset();

\_minutes.Increment();

if (\_minutes.Ticks == 60)

{

\_minutes.Reset();

\_hours.Increment();

if (\_hours.Ticks == 24)

{

\_hours.Reset();

}

}

}

}

public void Reset()

{

\_seconds.Reset();

\_minutes.Reset();

\_hours.Reset();

}

public string DisplayTime()

{

return string.Format("{0:D2}:{1:D2}:{2:D2}", \_hours.Ticks, \_minutes.Ticks, \_seconds.Ticks);

}

}

}

1. Program.cs

namespace ClockClass;

class Program

{

static void Main(string[] args)

{

Clock clock = new Clock();

while (true)

{

Console.Clear();

Console.WriteLine("Clock Time: " + clock.DisplayTime());

clock.Tick();

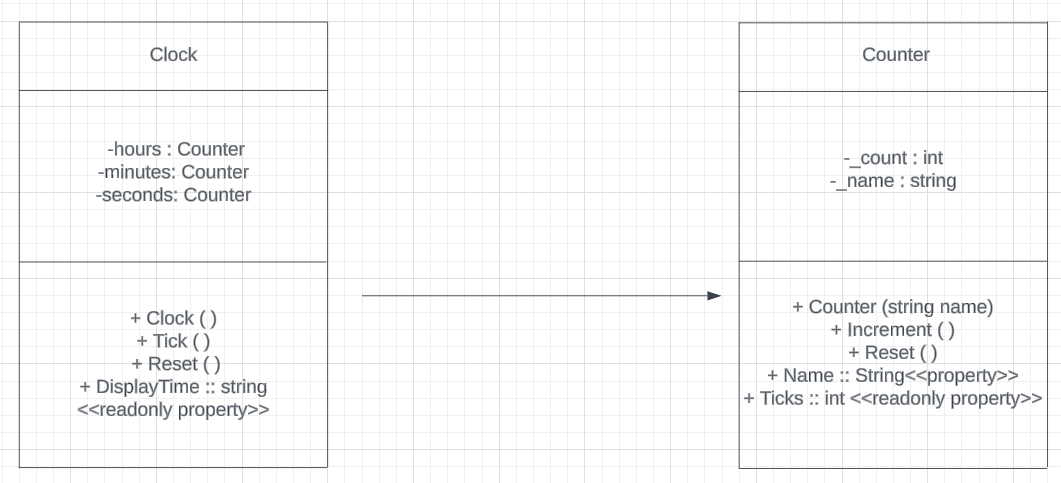
Thread.Sleep(1000);

}

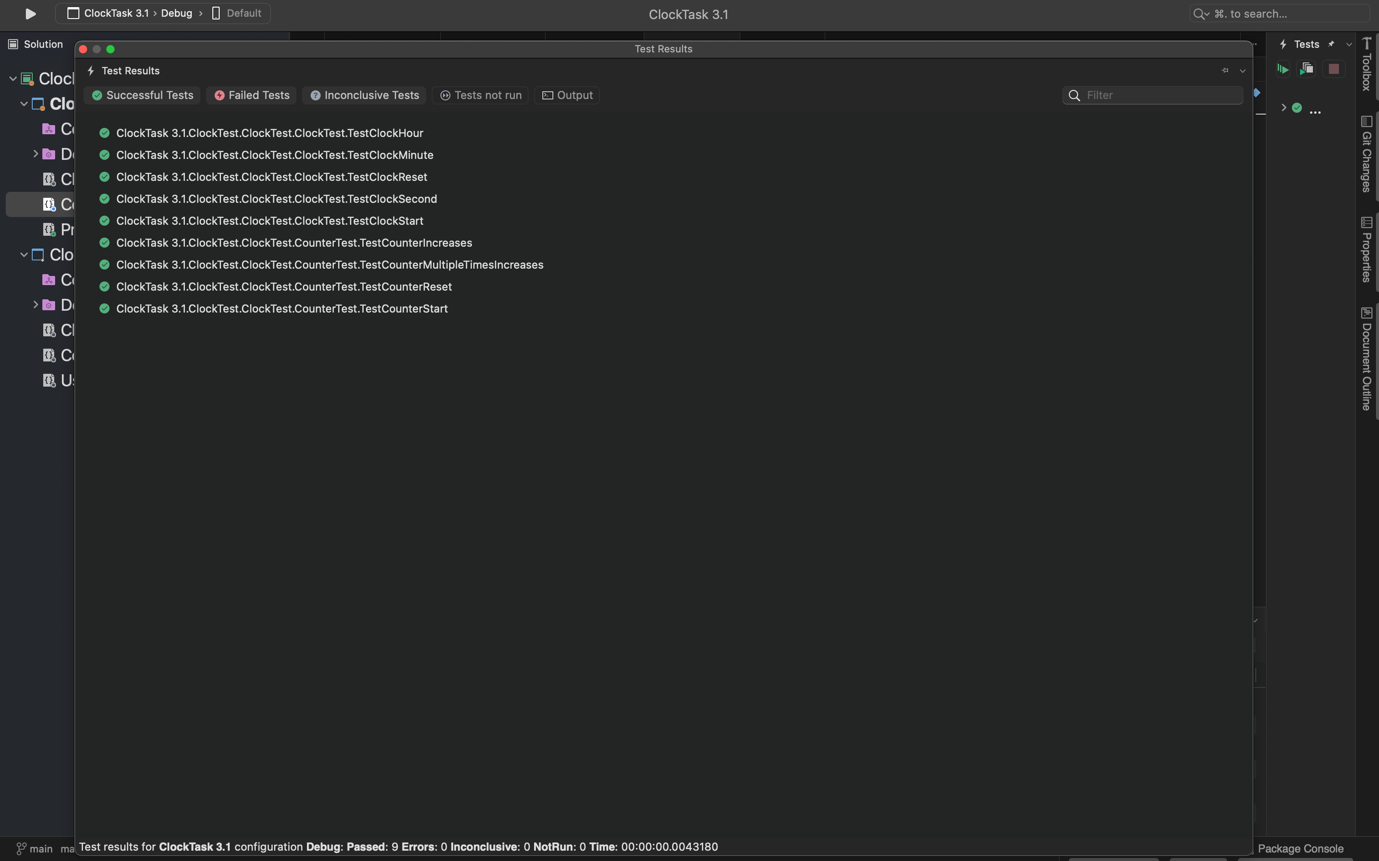
}

}

1. **Image**
2. UML Diagram



1. NUnit Test



1. Program’s output

A screenshot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated

