Putra Strata Tandika Setyawan

2311104050
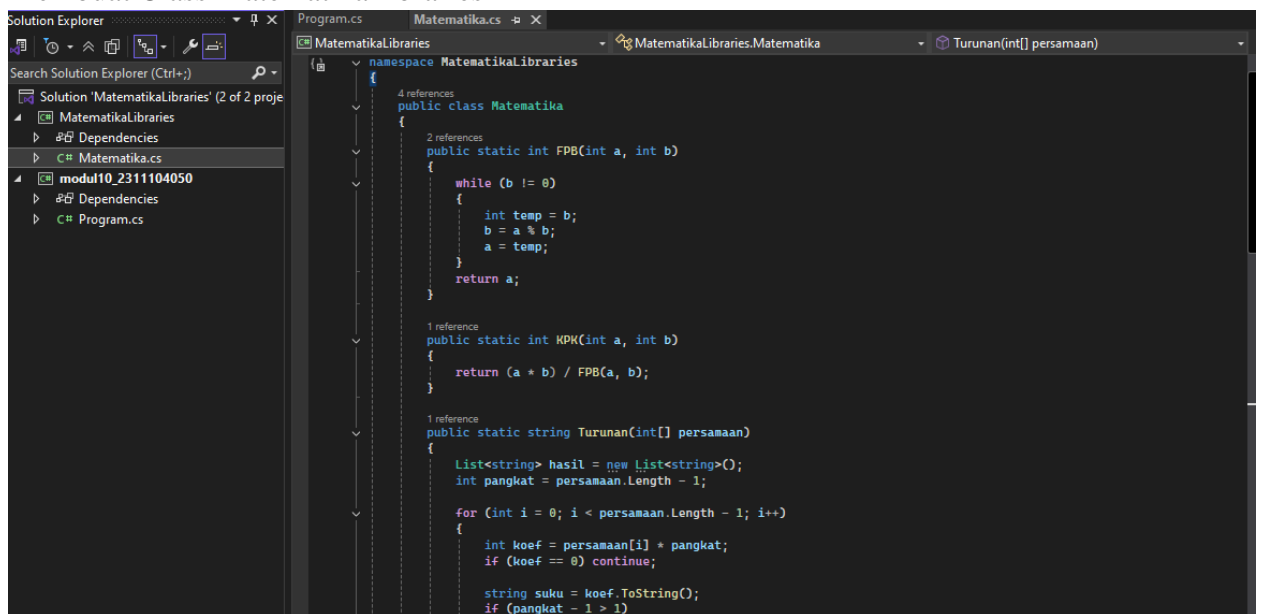
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Jurnal Modul 10

```
FPB: 15
KPK: 24
Turunan: 3x2 + 8x - 12
Integral: x4 + 2x3 - 6x2 + 9x1 + C

D:\Setya\Clone\KPL_Putra-Strata-Tandika-Setyawan_2311104050\10_Library_Construction\Jurnal\MatematikaLibraries\modul10_2
311104050\bin\Debug\net8.0\modul10_2311104050.exe (process 6784) exited with code 0 (0x0).
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the conso
le when debugging stops.
Press any key to close this window . . .
```

1. Membuat Class MatematikaLibraries


```csharp
namespace MatematikaLibraries
{
    public class Matematika
    {
        public static int FPB(int a, int b)
        {
            while (b != 0)
            {
                int temp = b;
                b = a % b;
                a = temp;
            }
            return a;
        }
```

```csharp
        public static int KPK(int a, int b)
        {
            return (a * b) / FPB(a, b);
        }

        public static string Turunan(int[] persamaan)
        {
            List<string> hasil = new List<string>();
            int pangkat = persamaan.Length - 1;

            for (int i = 0; i < persamaan.Length - 1; i++)
            {
                int koef = persamaan[i] * pangkat;
                if (koef == 0) continue;

                string suku = koef.ToString();
                if (pangkat - 1 > 1)
                    suku += $"x{pangkat - 1}";
                else if (pangkat - 1 == 1)
                    suku += "x";

                hasil.Add(suku);
                pangkat--;
            }
            return string.Join(" + ", hasil).Replace("+ -", "- ");
        }

        public static string Integral(int[] persamaan)
        {
            List<string> hasil = new List<string>();
            int pangkat = persamaan.Length;

            for (int i = 0; i < persamaan.Length; i++)
            {
                double koef = (double)persamaan[i] / (pangkat);
                string suku = (koef == 1 ? "" : koef.ToString("0.##")) +
$"x{pangkat}";
                hasil.Add(suku);
                pangkat--;
            }

            hasil.Add("C");
            return string.Join(" + ", hasil).Replace("+ -", "- ");
        }
    }
}
```
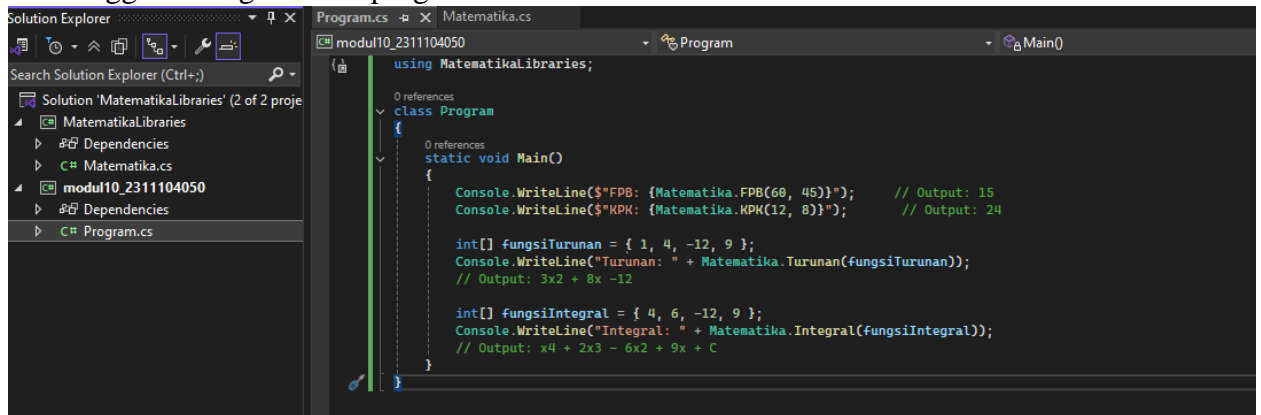
2. Memanggil di fungsi utama program.cs


```csharp
using MatematikaLibraries;

class Program
{
    static void Main()
    {
        Console.WriteLine($"FPB: {Matematika.FPB(60, 45)}");      // Output: 15
        Console.WriteLine($"KPK: {Matematika.KPK(12, 8)}");        // Output: 24

        int[] fungsiTurunan = { 1, 4, -12, 9 };
        Console.WriteLine("Turunan: " + Matematika.Turunan(fungsiTurunan));
        // Output: 3x2 + 8x -12

        int[] fungsiIntegral = { 4, 6, -12, 9 };
        Console.WriteLine("Integral: " + Matematika.Integral(fungsiIntegral));
        // Output: x4 + 2x3 - 6x2 + 9x + C
    }
}
```