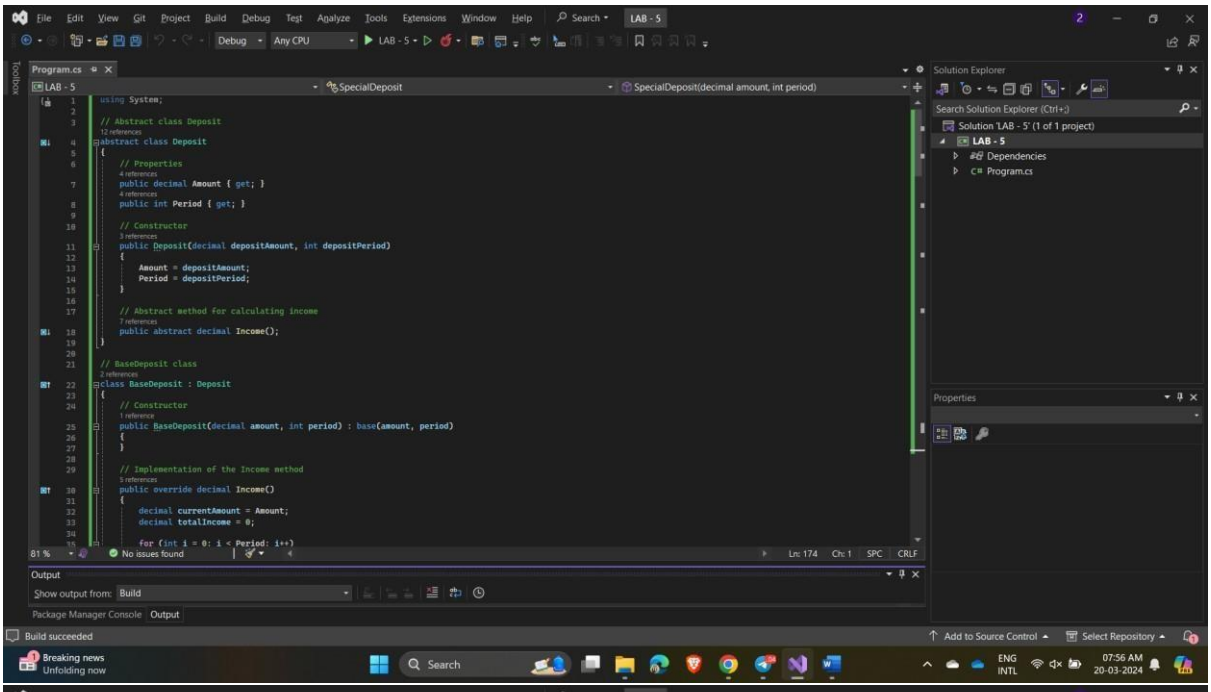
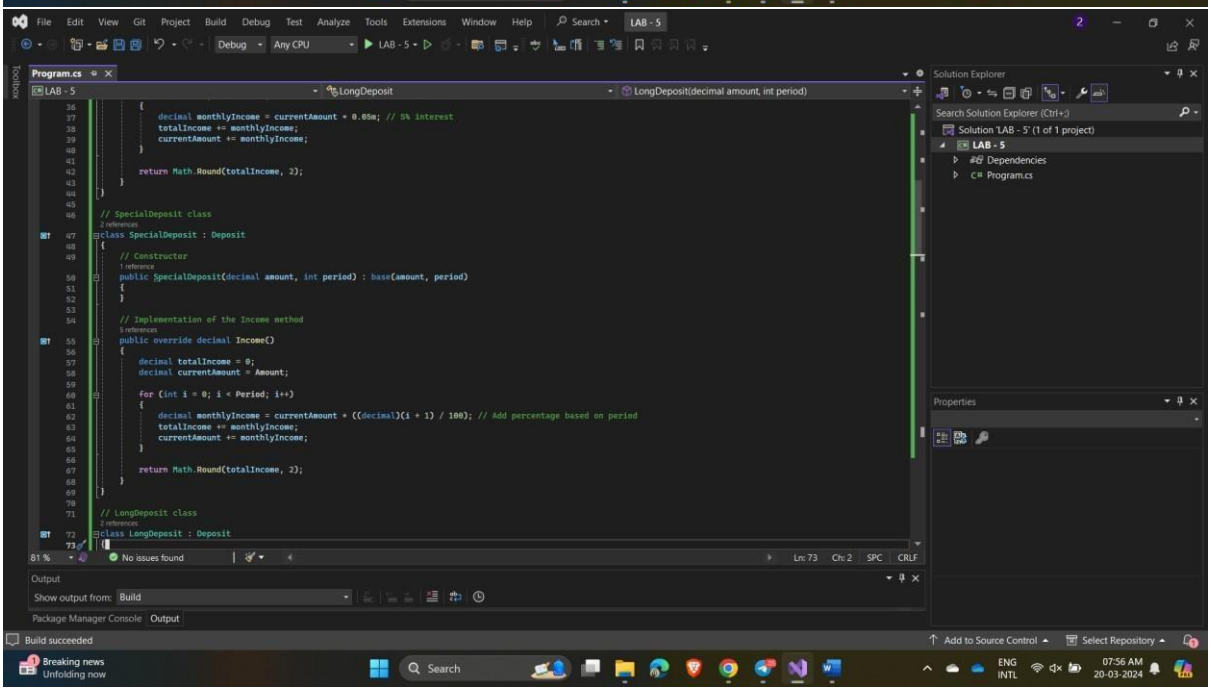
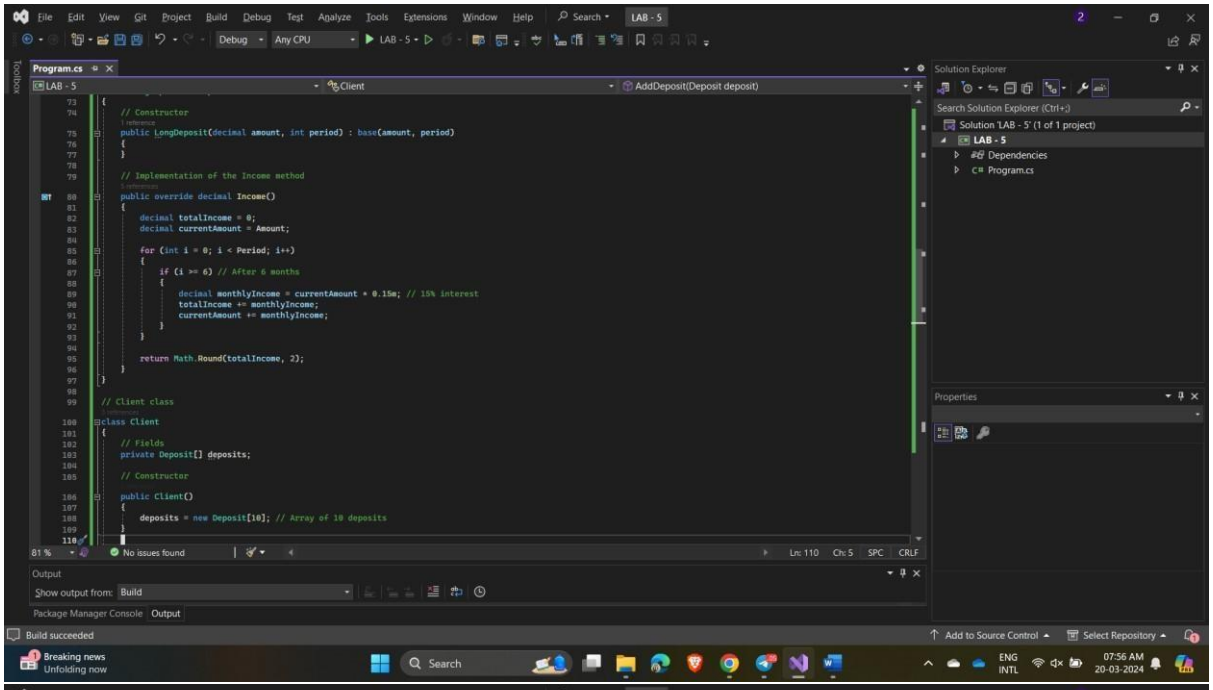
2100090166

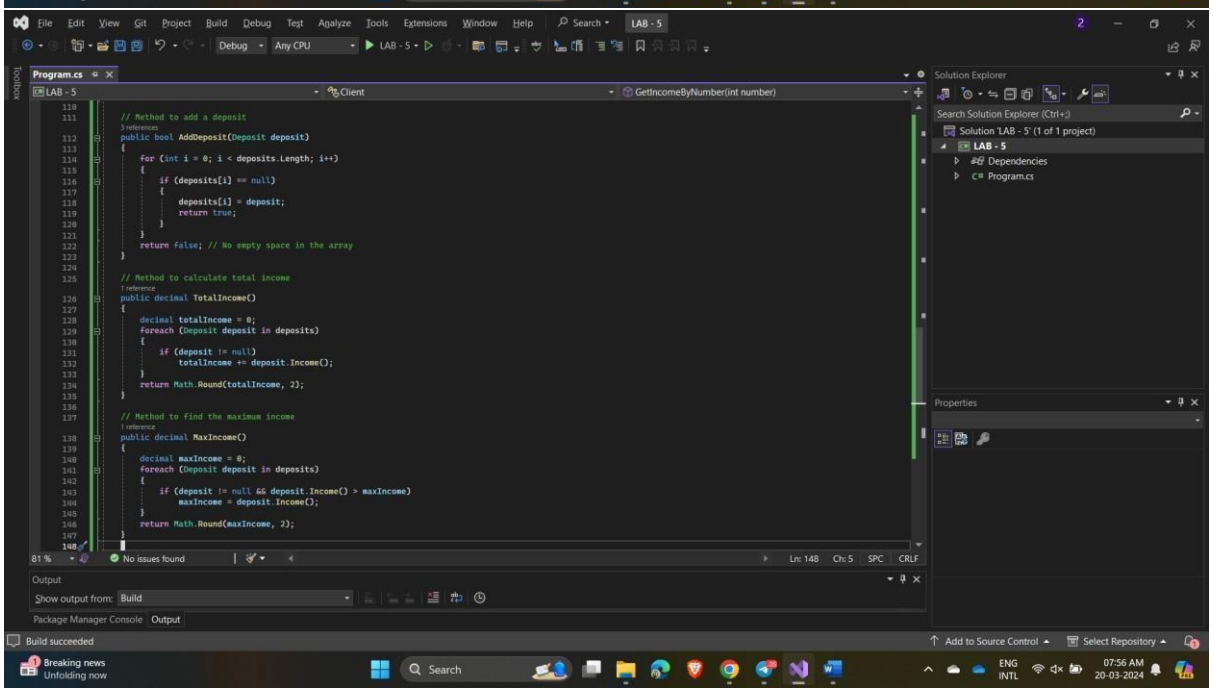
J.KASAIAH

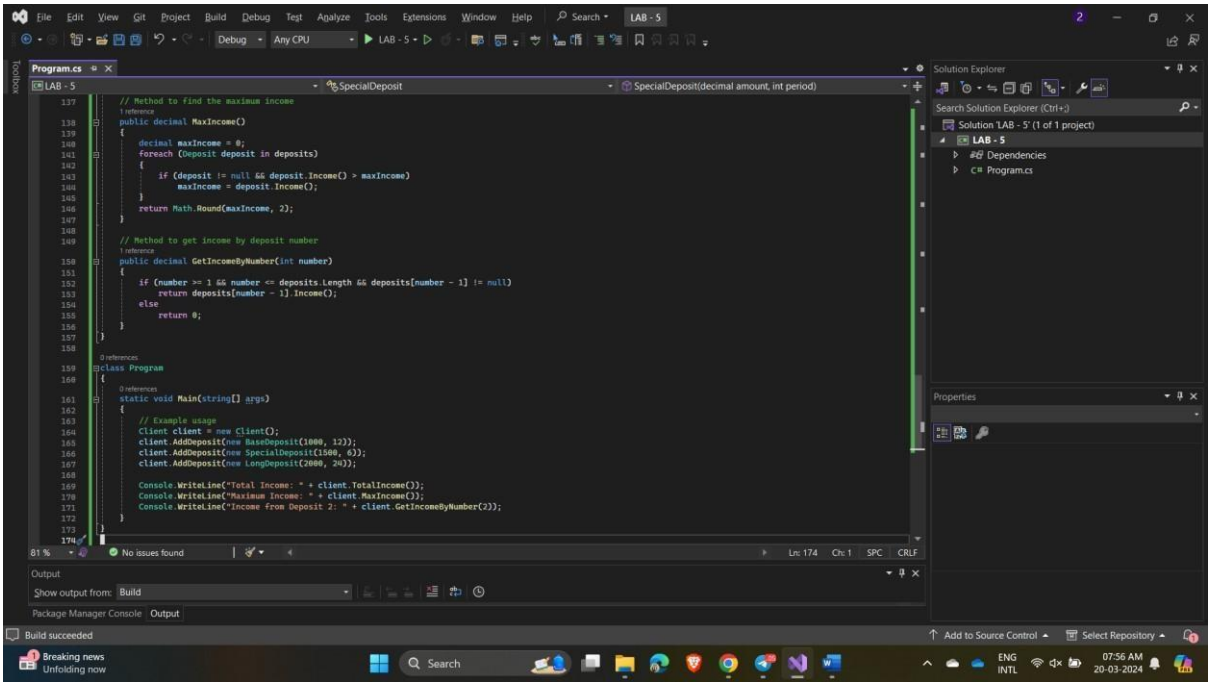
LAB - 5.1






File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help
Search
LAB - 5
Debug
Any CPU
Program.cs
LAB - 5
Client
AddDeposit(Deposit deposit)
// Constructor
public LongDeposit(decimal amount, int period) : base(amount, period)
{
}
// Implementation of the Income method
public override decimal Income()
{
decimal totalIncome = 0;
decimal currentAmount = Amount;
for (int i = 0; i < Period; i++)
{
if (i >= 6) // After 6 months
{
decimal monthlyIncome = currentAmount * 0.15m; // 15% interest
totalIncome += monthlyIncome;
currentAmount += monthlyIncome;
}
}
return Math.Round(totalIncome, 2);
}
}
// Client class
class Client
{
// Fields
private Deposit[] deposits;
// Constructor
public Client()
{
deposits = new Deposit[10]; // Array of 10 deposits
}
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'LAB - 5' (1 of 1 project)
LAB - 5
Dependencies
Program.cs
Properties
No issues found
Ln: 110 Ch: 5 SPC CRLF
Output
Show output from: Build
Package Manager Console
Output
Build succeeded
Add to Source Control
Select Repository
Breaking news
Unfolding now
Search
ENG
INTL
07:56 AM
20-03-2024


File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help
Search
LAB - 5
Debug
Any CPU
Program.cs
LAB - 5
Client
GetIncomeByNumber(int number)
// Method to add a deposit
public bool AddDeposit(Deposit deposit)
{
for (int i = 0; i < deposits.Length; i++)
{
if (deposits[i] == null)
{
deposits[i] = deposit;
return true;
}
}
return false; // No empty space in the array
}
// Method to calculate total income
public decimal TotalIncome()
{
decimal totalIncome = 0;
foreach (Deposit deposit in deposits)
{
if (deposit != null)
totalIncome += deposit.Income();
}
return Math.Round(totalIncome, 2);
}
// Method to find the maximum income
public decimal MaxIncome()
{
decimal maxIncome = 0;
foreach (Deposit deposit in deposits)
{
if (deposit != null && deposit.Income() > maxIncome)
maxIncome = deposit.Income();
}
return Math.Round(maxIncome, 2);
}
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'LAB - 5' (1 of 1 project)
LAB - 5
Dependencies
Program.cs
Properties
No issues found
Ln: 148 Ch: 5 SPC CRLF
Output
Show output from: Build
Package Manager Console
Output
Build succeeded
Add to Source Control
Select Repository
Breaking news
Unfolding now
Search
ENG
INTL
07:56 AM
20-03-2024



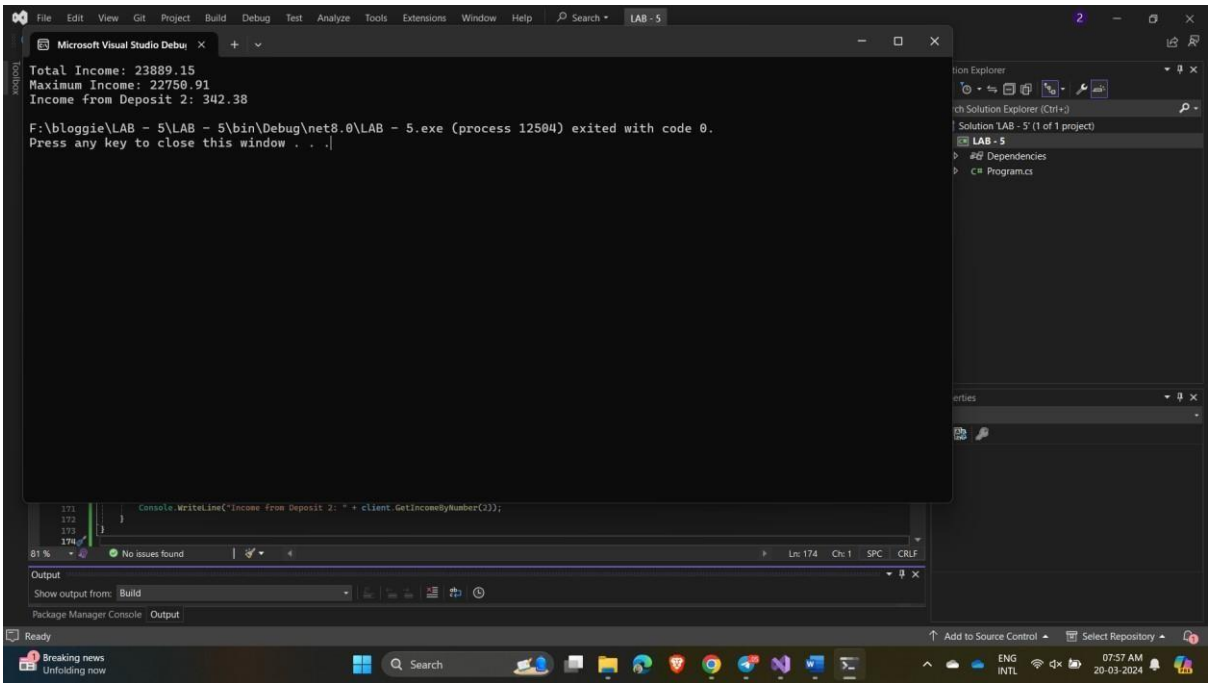
```
// Method to find the maximum income
public decimal MaxIncome()
{
    decimal maxIncome = 0;
    foreach (Deposit deposit in deposits)
    {
        if (deposit != null && deposit.Income() > maxIncome)
            maxIncome = deposit.Income();
    }
    return Math.Round(maxIncome, 2);
}

// Method to get income by deposit number
public decimal GetIncomeByNumber(int number)
{
    if (number >= 1 && number <= deposits.Length && deposits[number - 1] != null)
        return deposits[number - 1].Income();
    else
        return 0;
}
}

class Program
{
static void Main(string[] args)
{
    // Example usage
    Client client = new Client();
    client.AddDeposit(new BaseDeposit(1000, 12));
    client.AddDeposit(new SpecialDeposit(1500, 6));
    client.AddDeposit(new LongDeposit(2000, 24));

    Console.WriteLine("Total Income: " + client.TotalIncome());
    Console.WriteLine("Maximum Income: " + client.MaxIncome());
    Console.WriteLine("Income from Deposit 2: " + client.GetIncomeByNumber(2));
}
}
```

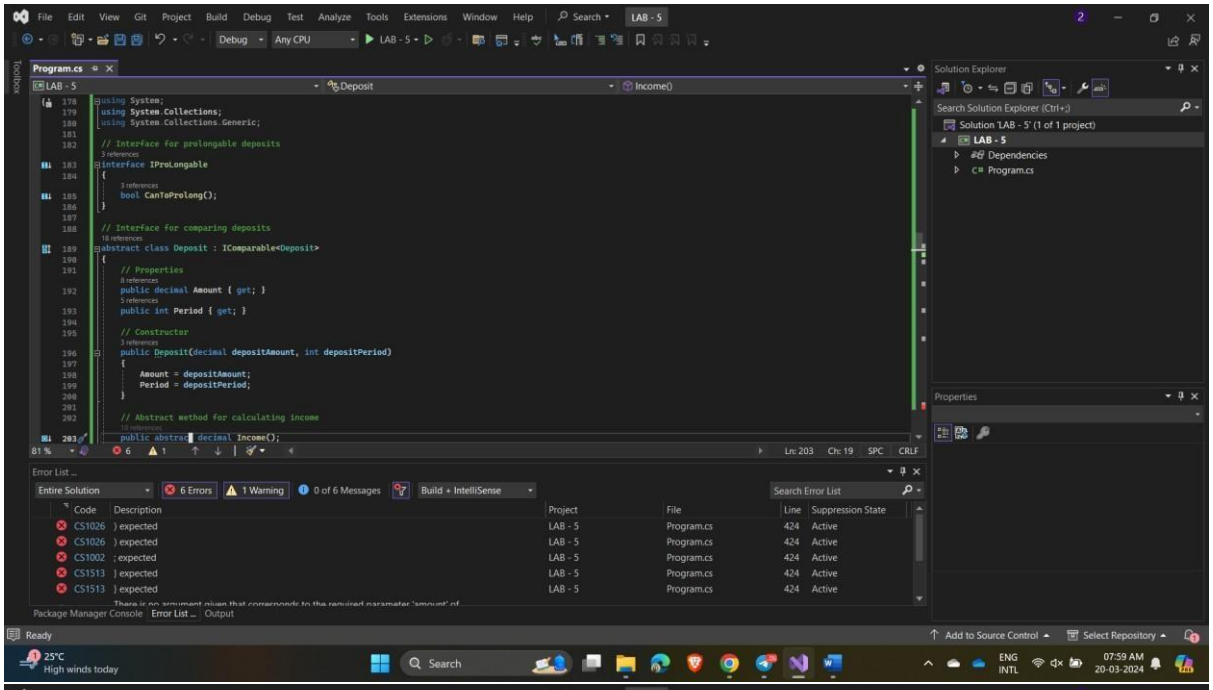
OUTPUT :



```
Total Income: 23889.15
Maximum Income: 22750.91
Income from Deposit 2: 342.38

F:\bloggie\LAB - 5\LAB - 5\bin\Debug\net8.0\LAB - 5.exe (process 12504) exited with code 0.
Press any key to close this window . . .
```

LAB – 5.2


File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help
LAB - 5
Program.cs
LAB - 5
Deposit
Income()
using System;
using System.Collections;
using System.Collections.Generic;
// Interface for prolongable deposits
interface IProLongable
{
bool CanToProlong();
}
// Interface for comparing deposits
abstract class Deposit : IComparable<Deposit>
{
// Properties
public decimal Amount { get; }
public int Period { get; }
// Constructor
public Deposit(decimal depositAmount, int depositPeriod)
{
Amount = depositAmount;
Period = depositPeriod;
}
// Abstract method for calculating income
public abstract decimal Income();
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'LAB - 5' (1 of 1 project)
LAB - 5
Dependencies
Program.cs
Properties
Error List ...
Entire Solution
6 Errors
1 Warning
0 of 6 Messages
Build + IntelliSense
Search Error List
Code
Description
Project
File
Line
Suppression State
CS1026) expected LAB - 5 Program.cs 424 Active
CS1026) expected LAB - 5 Program.cs 424 Active
CS1002 ; expected LAB - 5 Program.cs 424 Active
CS1513 } expected LAB - 5 Program.cs 424 Active
CS1513 } expected LAB - 5 Program.cs 424 Active
Package Manager Console
Error List ...
Output
Ready
Add to Source Control
Select Repository
25°C
High winds today
Search
ENG
INTL
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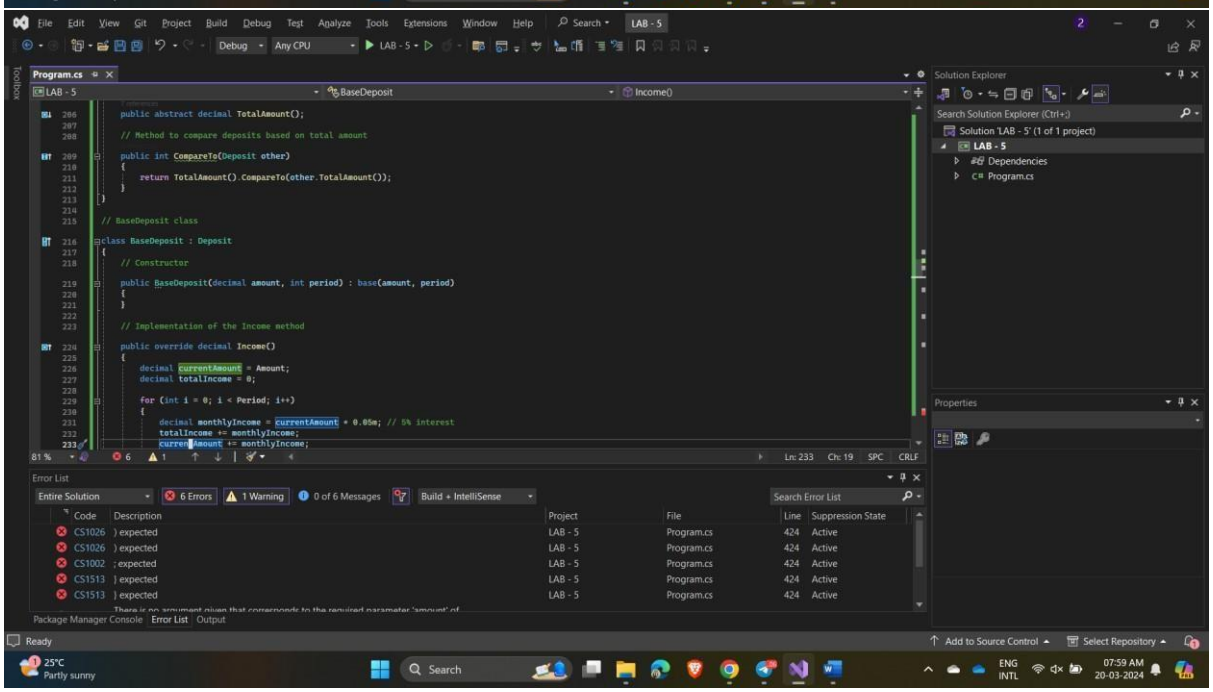
20-03-2024


File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help
LAB - 5
Program.cs
LAB - 5
BaseDeposit
Income()
public abstract decimal TotalAmount();
// Method to compare deposits based on total amount
public int CompareTo(Deposit other)
{
return TotalAmount().CompareTo(other.TotalAmount());
}
}
// BaseDeposit class
class BaseDeposit : Deposit
{
// Constructor
public BaseDeposit(decimal amount, int period) : base(amount, period)
{
}
// Implementation of the Income method
public override decimal Income()
{
decimal currentAmount = Amount;
decimal totalIncome = 0;
for (int i = 0; i < Period; i++)
{
decimal monthlyIncome = currentAmount * 0.05m; // 5% interest
totalIncome += monthlyIncome;
currentAmount += monthlyIncome;
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'LAB - 5' (1 of 1 project)
LAB - 5
Dependencies
Program.cs
Properties
Error List
Entire Solution
6 Errors
1 Warning
0 of 6 Messages
Build + IntelliSense
Search Error List
Code
Description
Project
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Suppression State
CS1026) expected LAB - 5 Program.cs 424 Active
CS1026) expected LAB - 5 Program.cs 424 Active
CS1002 ; expected LAB - 5 Program.cs 424 Active
CS1513 } expected LAB - 5 Program.cs 424 Active
CS1513 } expected LAB - 5 Program.cs 424 Active
Package Manager Console
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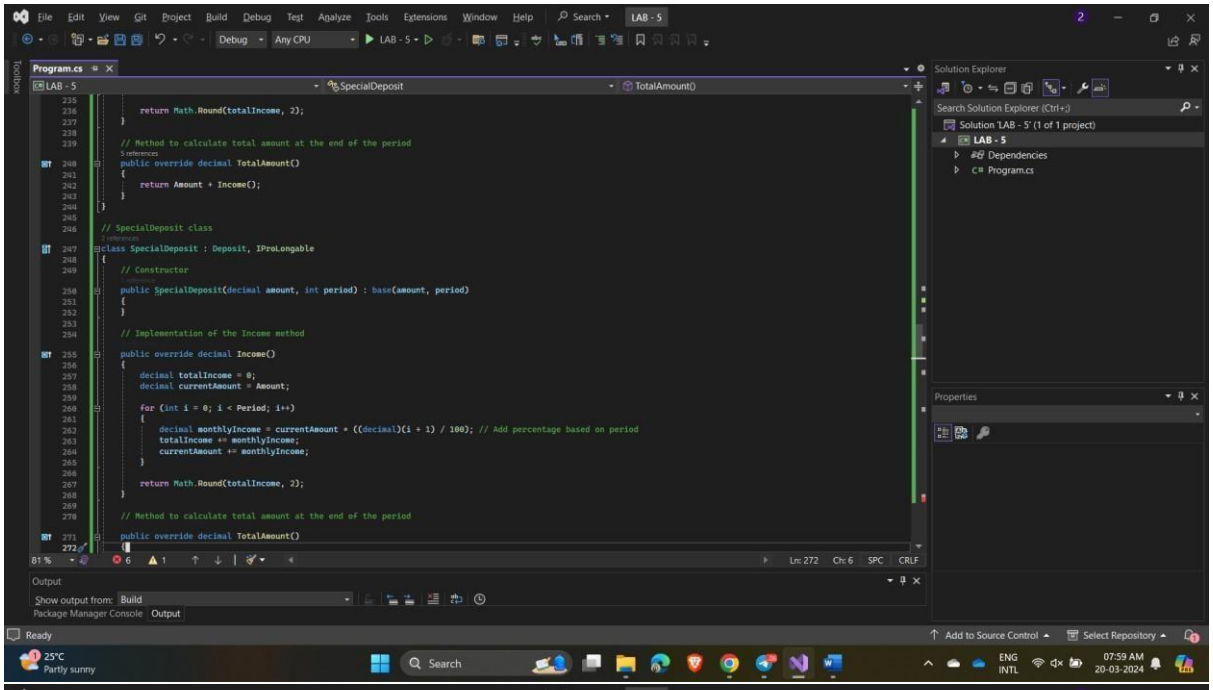
File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help
Search
LAB - 5
Debug
Any CPU
Program.cs
LAB - 5
SpecialDeposit
TotalAmount()
return Math.Round(totalIncome, 2);
}
// Method to calculate total amount at the end of the period
5 references
public override decimal TotalAmount()
{
return Amount + Income();
}
}
// SpecialDeposit class
2 references
class SpecialDeposit : Deposit, IProLongable
{
// Constructor
1 reference
public SpecialDeposit(decimal amount, int period) : base(amount, period)
{
}
// Implementation of the Income method
public override decimal Income()
{
decimal totalIncome = 0;
decimal currentAmount = Amount;
for (int i = 0; i < Period; i++)
{
decimal monthlyIncome = currentAmount * ((decimal)(i + 1) / 100); // Add percentage based on period
totalIncome += monthlyIncome;
currentAmount += monthlyIncome;
}
return Math.Round(totalIncome, 2);
}
// Method to calculate total amount at the end of the period
public override decimal TotalAmount()
{
Ln: 272 Ch: 6 SPC CRLF
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'LAB - 5' (1 of 1 project)
LAB - 5
Dependencies
Program.cs
Properties
Output
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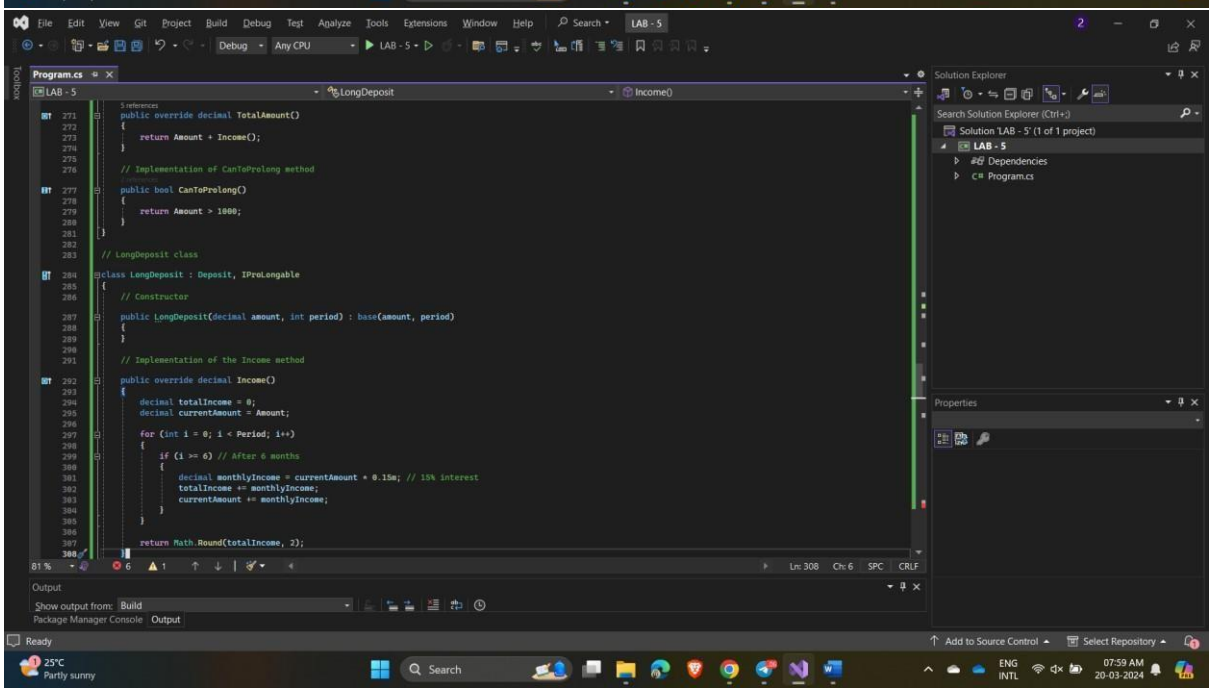
File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help
Search
LAB - 5
Debug
Any CPU
Program.cs
LAB - 5
LongDeposit
Income()
5 references
public override decimal TotalAmount()
{
return Amount + Income();
}
// Implementation of CanToProlong method
1 reference
public bool CanToProlong()
{
return Amount > 1000;
}
}
// LongDeposit class
class LongDeposit : Deposit, IProLongable
{
// Constructor
public LongDeposit(decimal amount, int period) : base(amount, period)
{
}
// Implementation of the Income method
public override decimal Income()
{
decimal totalIncome = 0;
decimal currentAmount = Amount;
for (int i = 0; i < Period; i++)
{
if (i >= 6) // After 6 months
{
decimal monthlyIncome = currentAmount * 0.15m; // 15% interest
totalIncome += monthlyIncome;
currentAmount += monthlyIncome;
}
}
return Math.Round(totalIncome, 2);
}
Ln: 308 Ch: 6 SPC CRLF
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'LAB - 5' (1 of 1 project)
LAB - 5
Dependencies
Program.cs
Properties
Output
Show output from: Build
Package Manager Console Output
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Add to Source Control
Select Repository
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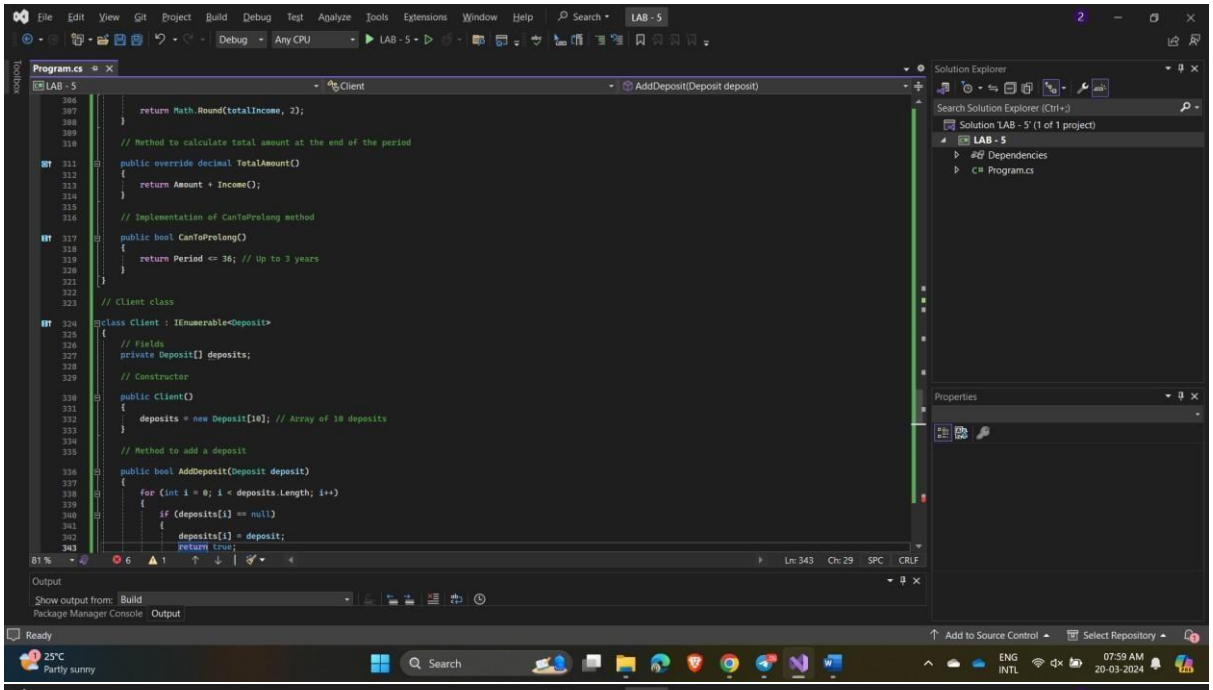
File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help
Search
LAB - 5
Debug
Any CPU
Program.cs
LAB - 5
Client
AddDeposit(Deposit deposit)
return Math.Round(totalIncome, 2);
}
// Method to calculate total amount at the end of the period
public override decimal TotalAmount()
{
return Amount + Income();
}
// Implementation of CanToProlong method
public bool CanToProlong()
{
return Period <= 36; // Up to 3 years
}
}
// Client class
class Client : IEnumerable<Deposit>
{
// Fields
private Deposit[] deposits;
// Constructor
public Client()
{
deposits = new Deposit[10]; // Array of 10 deposits
}
// Method to add a deposit
public bool AddDeposit(Deposit deposit)
{
for (int i = 0; i < deposits.Length; i++)
{
if (deposits[i] == null)
{
deposits[i] = deposit;
return true;
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'LAB - 5' (1 of 1 project)
LAB - 5
Dependencies
Program.cs
Properties
Output
Show output from: Build
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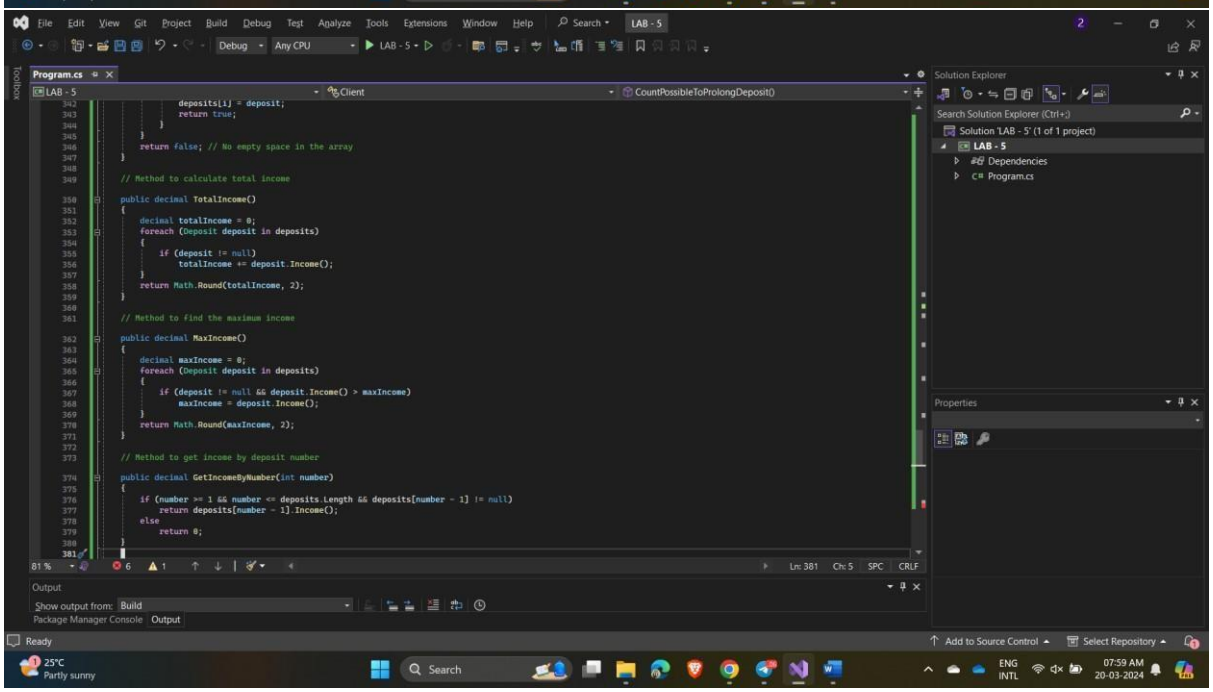
File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help
Search
LAB - 5
Debug
Any CPU
Program.cs
LAB - 5
Client
CountPossibleToProlongDeposit()
deposits[i] = deposit;
return true;
}
}
return false; // No empty space in the array
}
// Method to calculate total income
public decimal TotalIncome()
{
decimal totalIncome = 0;
foreach (Deposit deposit in deposits)
{
if (deposit != null)
totalIncome += deposit.Income();
}
return Math.Round(totalIncome, 2);
}
// Method to find the maximum income
public decimal MaxIncome()
{
decimal maxIncome = 0;
foreach (Deposit deposit in deposits)
{
if (deposit != null && deposit.Income() > maxIncome)
maxIncome = deposit.Income();
}
return Math.Round(maxIncome, 2);
}
// Method to get income by deposit number
public decimal GetIncomeByNumber(int number)
{
if (number >= 1 && number <= deposits.Length && deposits[number - 1] != null)
return deposits[number - 1].Income();
else
return 0;
}
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'LAB - 5' (1 of 1 project)
LAB - 5
Dependencies
Program.cs
Properties
Output
Show output from: Build
Package Manager Console
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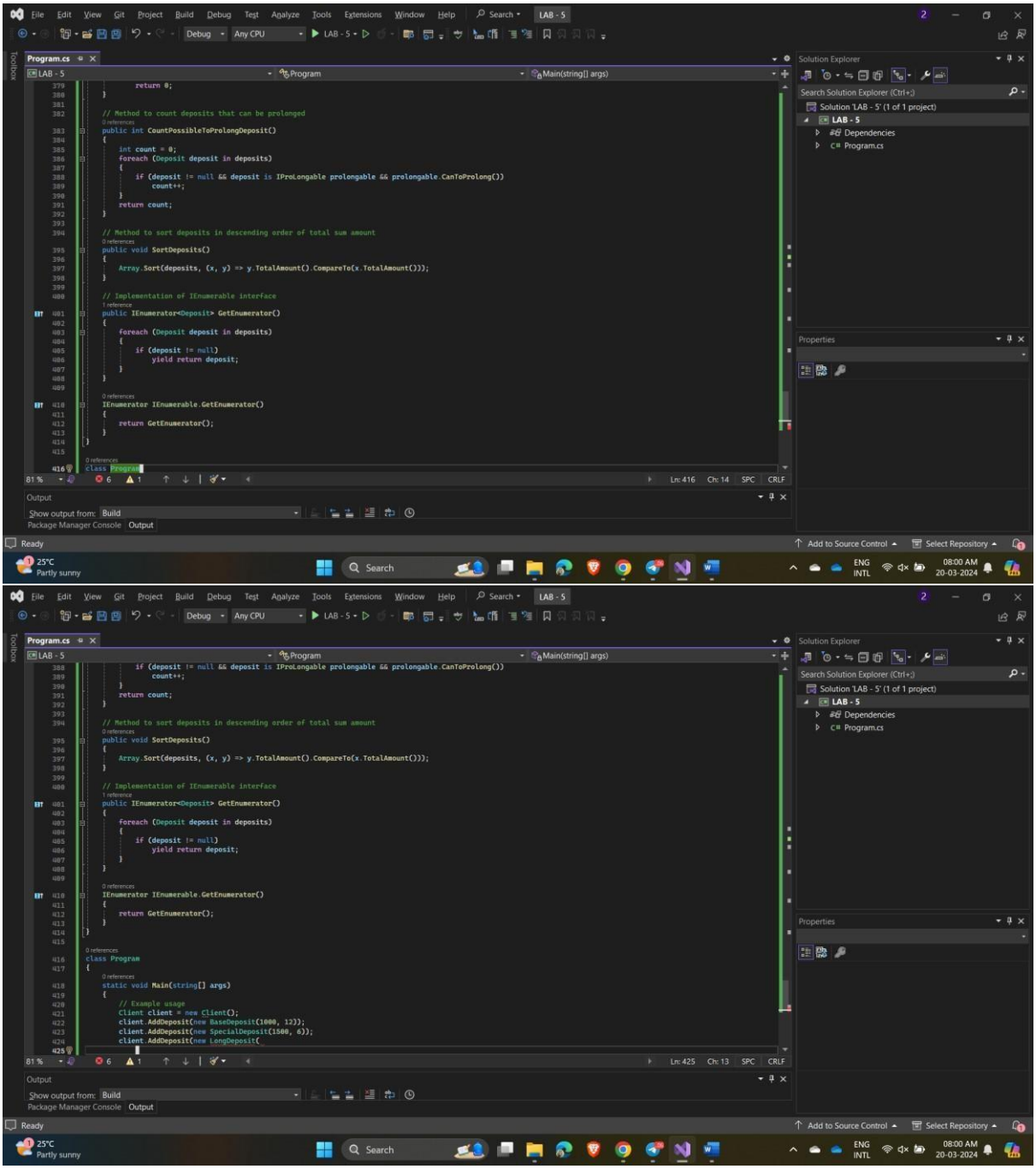
File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help
Search
LAB - 5
Debug
Any CPU
Program.cs
LAB - 5
Program
Main(string[] args)
return 0;
}
// Method to count deposits that can be prolonged
0 references
public int CountPossibleToProlongDeposit()
{
int count = 0;
foreach (Deposit deposit in deposits)
{
if (deposit != null && deposit is IProLongable prolongable && prolongable.CanToProlong())
count++;
}
return count;
}
// Method to sort deposits in descending order of total sum amount
0 references
public void SortDeposits()
{
Array.Sort(deposits, (x, y) => y.TotalAmount().CompareTo(x.TotalAmount()));
}
// Implementation of IEnumerable interface
1 reference
public IEnumerator<Deposit> GetEnumerator()
{
foreach (Deposit deposit in deposits)
{
if (deposit != null)
yield return deposit;
}
}
0 references
IEnumerator IEnumerable.GetEnumerator()
{
return GetEnumerator();
}
}
0 references
class Program
Ln: 416 Ch: 14 SPC CRLF
Output
Show output from: Build
Package Manager Console Output
Ready
Add to Source Control
Select Repository
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'LAB - 5' (1 of 1 project)
LAB - 5
Dependencies
Program.cs
Properties
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ENG
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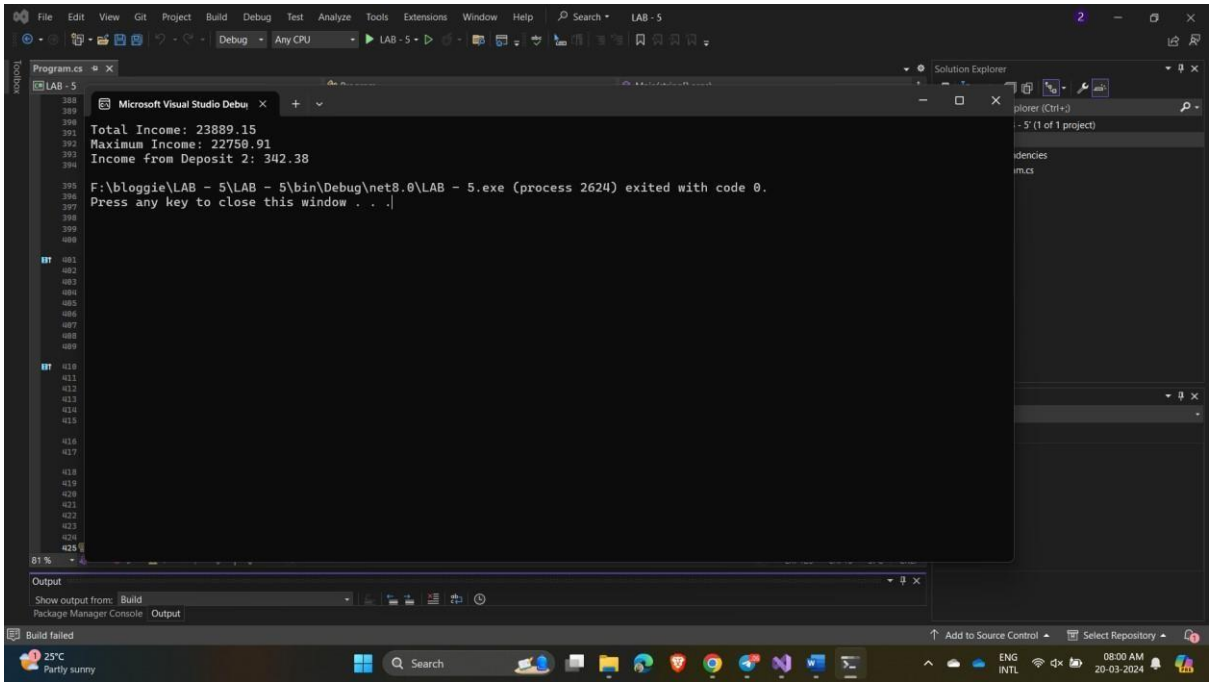
20-03-2024

File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help
Search
LAB - 5
Debug
Any CPU
Program.cs
LAB - 5
Program
Main(string[] args)
if (deposit != null && deposit is IProLongable prolongable && prolongable.CanToProlong())
count++;
}
return count;
}
// Method to sort deposits in descending order of total sum amount
0 references
public void SortDeposits()
{
Array.Sort(deposits, (x, y) => y.TotalAmount().CompareTo(x.TotalAmount()));
}
// Implementation of IEnumerable interface
1 reference
public IEnumerator<Deposit> GetEnumerator()
{
foreach (Deposit deposit in deposits)
{
if (deposit != null)
yield return deposit;
}
}
0 references
IEnumerator IEnumerable.GetEnumerator()
{
return GetEnumerator();
}
}
0 references
class Program
{
0 references
static void Main(string[] args)
{
// Example usage
Client client = new Client();
client.AddDeposit(new BaseDeposit(1000, 12));
client.AddDeposit(new SpecialDeposit(1500, 6));
client.AddDeposit(new LongDeposit(
Ln: 425 Ch: 13 SPC CRLF
Output
Show output from: Build
Package Manager Console Output
Ready
Add to Source Control
Select Repository
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'LAB - 5' (1 of 1 project)
LAB - 5
Dependencies
Program.cs
Properties
25°C
Partly sunny
Search
ENG
INTL
08:00 AM
20-03-2024

OUTPUT :


Total Income: 23889.15
Maximum Income: 22750.91
Income from Deposit 2: 342.38
F:\bloggie\LAB - 5\LAB - 5\bin\Debug\net8.0\LAB - 5.exe (process 2624) exited with code 0.
Press any key to close this window . . .
Build failed
25°C
Partly sunny
Search
08:00 AM
20-03-2024