PRN211

SLOT 1,2,3 EXERCISES

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Exercise 1:

using System;  
using System.Diagnostics;  
  
namespace Exercise3\_SimpleCalc  
{  
 internal class Program  
 {  
 public static void *Main*(string[] *args*)  
 {  
 int a, b;  
 char operator\_;  
   
 *//Input for a* InputA:  
 Console.*Write*("Input a: ");  
 try  
 {  
 a = int.*Parse*(Console.*ReadLine*() ?? string.*Empty*);  
 }  
 catch (Exception ex)  
 {  
 Console.*Write*("Allow only integer! ");  
 goto InputA;  
 }  
  
 *//Input for b* InputB:  
 Console.*Write*("Input b: ");  
 try  
 {  
 b = int.*Parse*(Console.*ReadLine*() ?? string.*Empty*);  
 }  
 catch (Exception ex)  
 {  
 Console.*Write*("Allow only integer! ");  
 goto InputB;  
 }  
   
 *//Input for operator* InputOperator:  
 Console.*Write*("Input operator: ");  
 operator\_ = Console.*ReadKey*().KeyChar;  
  
 switch (operator\_)  
 {  
 case '+': Console.*WriteLine*($"\nThe result of {a} {operator\_} {b} = {a+b}"); break;  
 case '-': Console.*WriteLine*($"\nThe result of {a} {operator\_} {b} = {a+b}"); break;  
 case '\*': Console.*WriteLine*($"\nThe result of {a} {operator\_} {b} = {a+b}"); break;  
 case '/':  
 {  
 if (b == 0) Console.*WriteLine*("\nCannot divide to 0");  
 else Console.*WriteLine*($"\nThe result of {a} {operator\_} {b} = {a\*1.0/b}");  
 break;  
 }  
 default:  
 {  
 Console.*WriteLine*("Only allow + - \* /. Please try again!");  
 goto InputOperator;  
 }  
 }  
 }  
 }  
}

Exercise 2:

using System;  
  
namespace Exercise4\_QuadraticEquation  
{  
 internal class Program  
 {  
 public static void *Main*(string[] *args*)  
 {  
 double a, b, c;  
   
 InputA:  
 Console.*Write*("Input a: ");  
 if (!double.*TryParse*(Console.*ReadLine*(), out a))  
 {  
 Console.*Write*("Input only the number! ");  
 goto InputA;  
 }  
  
 InputB:  
 Console.*Write*("Input b: ");  
 if (!double.*TryParse*(Console.*ReadLine*(), out b))  
 {  
 Console.*Write*("Input only the number! ");  
 goto InputB;  
 }  
   
 InputC:  
 Console.*Write*("Input c: ");  
 if (!double.*TryParse*(Console.*ReadLine*(), out c))  
 {  
 Console.*Write*("Input only the number! ");  
 goto InputC;  
 }  
  
 if (a==0 && b==0 && c==0) Console.*WriteLine*("Equation with infinite solutions");  
 else if (a==0 && b==0 && c!=0) Console.*WriteLine*("Equation with no solutions");  
 else if (a == 0 && b != 0) Console.*WriteLine*($"Equation has 1 solution: x = {-c/b}");  
 else  
 {  
 double delta = b \* b - 4 \* a \* c;  
 if (delta < 0) Console.*WriteLine*("Equation with no solutions");  
 else if (delta == 0) Console.*WriteLine*($"Equation has 1 solution: x = {-b/(2\*a)}");  
 else Console.*WriteLine*($"Equation has 2 solutions: x1 = {(-b-(Math.*Sqrt*(delta)))/(2\*a)} and x2 = {(-b+(Math.*Sqrt*(delta)))/(2\*a)}");  
 }  
  
 Console.*ReadLine*();  
 }  
 }  
}

Exercise 3:

using System;  
  
namespace Exercise5\_PrimeNumber  
{  
 internal class Program  
 {  
 public static bool *IsPrime*(int *number*)  
 {  
 for (int i = 2; i < *number*; i++) if (*number* % i == 0) return false;  
 return true;  
 }  
   
 public static void *Main*(string[] *args*)  
 {  
 int number;  
   
 InputNumber:  
 Console.*Write*("Input number: ");  
 if (!int.*TryParse*(Console.*ReadLine*(), out number))  
 {  
 Console.*Write*("Input only the number! ");  
 goto InputNumber;  
 }  
 else if (number < 2)  
 {  
 Console.*Write*("Input the number greater than 2! ");  
 goto InputNumber;  
 }  
   
 Console.*WriteLine*(*IsPrime*(number)? "The number is a prime":"The number is not a prime");  
 }  
 }  
}

Exercise 6:

using System;  
  
namespace Exercise6\_GuessingGame  
{  
 internal class Program  
 {  
 public static void *Main*(string[] *args*)  
 {  
 Console.*WriteLine*("-------------------------------------");  
 Console.*WriteLine*(" THE GUESSING GAME ");  
 Console.*WriteLine*("-------------------------------------");  
  
 int userNumber = -1;  
 int randomNumber = (new Random()).Next(1, 100);  
 for (int i = 1; i <= 7; i++)  
 {  
 *//User input number here* InputUserNumber:  
 Console.*Write*("Enter your number: ");  
 if (!Int32.*TryParse*(Console.*ReadLine*(), out userNumber))  
 {  
 Console.*Write*("Input only integer! ");  
 goto InputUserNumber;  
 }  
 else if (userNumber < 1 || userNumber > 100)  
 {  
 Console.*Write*("Input the integer in range [1;100]! ");  
 goto InputUserNumber;  
 }  
  
 *//Check equal number* if (userNumber == randomNumber)  
 {  
 Console.*WriteLine*("You won the game!");  
 break;  
 }  
 else  
 {  
 if (userNumber < randomNumber)  
 {  
 Console.*WriteLine*("You number is " +  
 "smaller than the winning number!");  
 }  
 else  
 {  
 Console.*WriteLine*("You number is " +  
 "bigger than the winning number!");  
 }  
  
 *//Check the left chances* if (i == 7)  
 {  
 Console.*WriteLine*("You lose!");  
 Console.*WriteLine*($"The winning number is {randomNumber}");  
 break;  
 }  
 Console.*WriteLine*($"You have {7-i} chance(s) left!");  
  
 }  
 }  
  
   
 Console.*ReadLine*();  
 }  
 }  
}