20 C# programs Assignment

Day 4 Assignment on 27/01/2022

By

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| Q No | 1 |
| Program | Multiplication Table of given number |
| Code | using System;  using System.Collections.Generic;  using System.Linq;  using System.Text;  using System.Threading.Tasks;  namespace Day\_04\_20220127  {  class Program  {    static void Main(string[] args)  {  //Setting up i.e., Declare & initiation Section  int Num, Loop\_Index;  // Accepting user input or colleting base data  Console.WriteLine("Enter Number to Display Maths Table");  Num = Convert.ToInt32(Console.ReadLine());  // Processing & Displaying output  Console.WriteLine("Maths Table of " + Num);  for (Loop\_Index = 1; Loop\_Index <= 10; Loop\_Index++)  Console.WriteLine(Num + "X" + Loop\_Index + "=" + Num \* Loop\_Index);  Console.ReadLine();  }  }  } |
| Output |  |

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| Q No | 2 |
| Program | Print Factorial of a given number |
| Code | using System;  using System.Collections.Generic;  using System.Linq;  using System.Text;  using System.Threading.Tasks;  namespace Day\_04\_20220127  {  class Program  {    static void Main(string[] args)  {  //Setting up i.e., Declare & initiation Section  int Num, Loop\_Index, Factorial=1;  // Accepting user input or colleting base data  Console.WriteLine("Enter Number to Calculate Factorial");  Num = Convert.ToInt32(Console.ReadLine());  // Processing  for (Loop\_Index = 1; Loop\_Index <= Num; Loop\_Index++)  Factorial = Factorial \* Loop\_Index;  // Displaying output  Console.WriteLine("Factorial of " + Num+" is :"+ Factorial);  Console.ReadLine();  }  }  } |
| Output |  |

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| Q No | 3 |
| Program | Print Sum of first n natural numbers |
| Code | using System;  using System.Collections.Generic;  using System.Linq;  using System.Text;  using System.Threading.Tasks;  namespace Day\_04\_20220127  {  class Program  {    static void Main(string[] args)  {  //Print Sum of first n natural numbers  //Setting up i.e., Declare & initiation Section  int Num, Loop\_Index,Sum=0;  // Accepting user input or colleting base data  Console.WriteLine("Enter Number to calculate sum of natural number upto it and Display");  Num = Convert.ToInt32(Console.ReadLine());  // Processing & Displaying output  for (Loop\_Index = 1; Loop\_Index <= Num; Loop\_Index++)  Sum = Sum + Loop\_Index;  // Processing & Displaying output  Console.WriteLine("Sum of Nartual numbers upto "+Num+" is "+Sum);  Console.ReadLine();  }  }  } |
| Output |  |

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| Q No | 4 |
| Program | Print Factorial using function |
| Code | using System;  using System.Collections.Generic;  using System.Linq;  using System.Text;  using System.Threading.Tasks;  namespace Day\_04\_20220127  {  class Program  {  public static long Factorial(int n)  {  //Setting up i.e., Declare & initiation Section  int Loop\_Index;  long Factorial = 1;  // Processing  for (Loop\_Index = 1; Loop\_Index <= n; Loop\_Index++)  Factorial = Factorial \* Loop\_Index;  // Return  return Factorial;  }  static void Main(string[] args)  {  //Print Factorial using function  //Setting up i.e., Declare & initiation Section  int Num;  // Accepting user input or colleting base data  Console.WriteLine("Enter Number to calculate Factorial");  Num = Convert.ToInt32(Console.ReadLine());  // Processing i.e., calling function Displaying output  Console.WriteLine("Factorial of given number " + Num+" is "+ Factorial(Num));  Console.ReadLine();  }  }  } |
| Output |  |

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| Q No | 5 |
| Program | Print Factorial using recursion |
| Code | System;  using System.Collections.Generic;  using System.Linq;  using System.Text;  using System.Threading.Tasks;  namespace Day\_04\_20220127  {  class Program  {  public static long Factorial(long n)  {  // Processing & Return  if (n == 1)  return 1;  else  return n \* Factorial(n - 1);  }  static void Main(string[] args)  {  //Print Factorial using recursion  //Setting up i.e., Declare & initiation Section  int Num;  // Accepting user input or colleting base data  Console.WriteLine("Enter Number to calculate Factorial");  Num = Convert.ToInt32(Console.ReadLine());  // Processing i.e., calling function Displaying output  Console.WriteLine("Factorial of given number " + Num+" is "+ Factorial(Num));  Console.ReadLine();  }  }  } |
| Output |  |

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| Q No | 6 |
| Program | Print factors of given number |
| Code | using System;  using System.Collections.Generic;  using System.Linq;  using System.Text;  using System.Threading.Tasks;  namespace Day\_04\_20220127  {  class Program  {  static void Main(string[] args)  {  //Print factors of given number  //Setting up i.e., Declare & initiation Section  int Num, Loop\_Index;  // Accepting user input or colleting base data  Console.WriteLine("Enter Number to Display factors of it");  Num = Convert.ToInt32(Console.ReadLine());  // Processing & Displaying output  Console.WriteLine("Factors of "+Num+" are ");  for (Loop\_Index=1;Loop\_Index<=Num;Loop\_Index++)  if(Num%Loop\_Index==0)  Console.WriteLine(Loop\_Index);  Console.ReadLine();  }  }  } |
| Output |  |

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| Q No | 6A |
| Program | Print factors of given number (result as pairs) |
| Code | using System;  using System.Collections.Generic;  using System.Linq;  using System.Text;  using System.Threading.Tasks;  namespace Day\_04\_20220127  {  class Program  {  static void Main(string[] args)  {  //Print factors of given number  //Setting up i.e., Declare & initiation Section  int Num, Loop\_Index;  // Accepting user input or colleting base data  Console.WriteLine("Enter Number to Display factors of it");  Num = Convert.ToInt32(Console.ReadLine());  // Processing & Displaying output  Console.WriteLine("Factors of "+Num+" are ");  for (Loop\_Index=1;Loop\_Index<=Math.Sqrt(Num);Loop\_Index++)  if(Num%Loop\_Index==0)  Console.WriteLine(Loop\_Index+","+Num/Loop\_Index);  Console.ReadLine();  }  }  } |
| Output |  |

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| Q No | 7 |
| Program | Print power of given numbers a power b |
| Code | using System;  using System.Collections.Generic;  using System.Linq;  using System.Text;  using System.Threading.Tasks;  namespace Day\_04\_20220127  {  class Program  {  static void Main(string[] args)  {  //Print power of given numbers a power b  //Setting up i.e., Declare & initiation Section  int Base\_Num, Expo\_Num, Loop\_Index, Power\_Num=1;  // Accepting user input or colleting base data  Console.WriteLine("Enter Base Number which power to be calculated");  Base\_Num = Convert.ToInt32(Console.ReadLine());  Console.WriteLine("Enter Exponent Number");  Expo\_Num = Convert.ToInt32(Console.ReadLine());  // Processing  for (Loop\_Index = 1; Loop\_Index <= Expo\_Num; Loop\_Index++)  Power\_Num = Power\_Num \* Base\_Num;    // Displaying output  Console.WriteLine(Base\_Num+" Power "+Expo\_Num+" is "+Power\_Num);  Console.ReadLine();  }  }  } |
| Output |  |

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| Q No | 8 |
| Program | Prime number or not |
| Code | using System;  using System.Collections.Generic;  using System.Linq;  using System.Text;  using System.Threading.Tasks;  namespace Day\_04\_20220127  {  class Program  {  static void Main(string[] args)  {  //Prime number or not  //Setting up i.e., Declare & initiation Section  int Num, Loop\_Index;  bool Prime=true;  // Accepting user input or colleting base data  Console.WriteLine("Enter Number to prime or not ");  Num = Convert.ToInt32(Console.ReadLine());    // Processing  for (Loop\_Index = 2; Loop\_Index <= Math.Sqrt(Num); Loop\_Index++)  if(Num%Loop\_Index==0)  { Prime = false; break; }  // Check & Displaying output  if(Prime)  Console.WriteLine(Num+" is Prime Number ");  else  Console.WriteLine(Num + " not a Prime Number ");  Console.ReadLine();  }  }  } |
| Output |  |

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| Q No | 9 |
| Program | Prime number check using function |
| Code | using System;  using System.Collections.Generic;  using System.Linq;  using System.Text;  using System.Threading.Tasks;  namespace Day\_04\_20220127  {  class Program  {  public static bool Prime\_Fun(int n)  {  //Setting up i.e., Declare & initiation Section  int Loop\_Index;    //Processing & Return value  for (Loop\_Index = 2; Loop\_Index <= Math.Sqrt(n); Loop\_Index++)  if (n % Loop\_Index == 0) return false;  return true;  }  static void Main(string[] args)  {  //Prime number check using function  //Setting up i.e., Declare & initiation Section  int Num;  bool Prime;  // Accepting user input or colleting base data  Console.WriteLine("Enter Number to prime or not ");  Num = Convert.ToInt32(Console.ReadLine());  // calling function  Prime = Prime\_Fun(Num);  // Check & Displaying output  if(Prime)  Console.WriteLine(Num+" is Prime Number ");  else  Console.WriteLine(Num + " not a Prime Number ");  Console.ReadLine();  }  }  } |
| Output |  |

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| Q No | 10 |
| Program | Prime numbers in range |
| Code | using System;  using System.Collections.Generic;  using System.Linq;  using System.Text;  using System.Threading.Tasks;  namespace Day\_04\_20220127  {  class Program  {  public static bool Prime\_Fun(int n)  {  //Setting up i.e., Declare & initiation Section  int Loop\_Index;    //Processing & Return value  for (Loop\_Index = 2; Loop\_Index <= Math.Sqrt(n); Loop\_Index++)  if (n % Loop\_Index == 0) return false;  return true;  }  static void Main(string[] args)  {  //Prime numbers in range  //Setting up i.e., Declare & initiation Section  int From\_Num,To\_Num,Loop\_index;    // Accepting user input or colleting base data  Console.WriteLine("To print prime number in Range. Enter starting Number ");  From\_Num = Convert.ToInt32(Console.ReadLine());  Console.WriteLine("Enter Ending Number ");  To\_Num = Convert.ToInt32(Console.ReadLine());  // Calling function i.e., Check & Displaying output  Console.WriteLine("Prime\_Fun Number from"+From\_Num+" to "+To\_Num);  for(Loop\_index=From\_Num;Loop\_index<=To\_Num;Loop\_index++)  if (Prime\_Fun(Loop\_index))  Console.WriteLine(Loop\_index);  Console.ReadLine();  }  }  } |
| Output |  |

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| Q No | 11 |
| Program | Fibonacci series |
| Code | using System;  using System.Collections.Generic;  using System.Linq;  using System.Text;  using System.Threading.Tasks;  namespace Day\_04\_20220127  {  class Program  {  static void Main(string[] args)  {  //Fibonacci series  //Setting up i.e., Declare & initiation Section  int Num,F\_Num=0,S\_Num=1,Loop\_index,Temp\_Num;    // Accepting user input or colleting base data  Console.WriteLine("Print how many of first Fibonacci numbers");  Num = Convert.ToInt32(Console.ReadLine());    // Procesing & Displaying output  Console.WriteLine("First "+Num+" Fibonacci numbers are ");  Console.WriteLine(F\_Num);  Console.WriteLine(S\_Num);  for (Loop\_index = 2; Loop\_index < Num; Loop\_index++)  {  Console.WriteLine(F\_Num + S\_Num);  Temp\_Num = F\_Num;  F\_Num = S\_Num;  S\_Num = F\_Num + Temp\_Num;  }  Console.ReadLine();  }  }  } |
| Output |  |

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| Q No | 12 |
| Program | Armstrong number |
| Code | using System;  using System.Collections.Generic;  using System.Linq;  using System.Text;  using System.Threading.Tasks;  namespace Day\_04\_20220127  {  class Program  {  static void Main(string[] args)  {  //Armstrong number -Armstrong number definition is the number in any given number base,  //which forms the total of the same number, when each of its digits is raised to the  // power of the number of digits in the number.  // 1, 2, 3, 4, 5, 6, 7, 8, 9, 153, 370, 371, 407, 1634, 8208, 9474, 54748  //Setting up i.e., Declare & initiation Section  int Num,Test\_Num,Proc\_Num, Rem\_Dig,Loop\_index,Num\_Index,Dig\_Pow;  // Accepting user input or colleting base data  Console.WriteLine("Enter a Number for check ing Armstrong Number or not ");  Num = Convert.ToInt32(Console.ReadLine());  // Procesing  // find number of digits in given number  for (Num\_Index = 0, Proc\_Num = Num; Proc\_Num > 0; Num\_Index++, Proc\_Num /= 10) ;  // Suming each digit to power of number of digits  Test\_Num = 0;  Proc\_Num = Num;  do  {  Rem\_Dig = Proc\_Num % 10;  Dig\_Pow = 1;  for (Loop\_index = 0; Loop\_index < Num\_Index; Loop\_index++)  Dig\_Pow = Dig\_Pow\*Rem\_Dig;  Test\_Num = Test\_Num + Dig\_Pow;  Proc\_Num /= 10;  } while (Proc\_Num > 0);  // Check & Displaying output  if(Test\_Num==Num)  Console.WriteLine(Num+ " is a Armstrong number");  else  Console.WriteLine(Num + " is not a Armstrong number");  Console.ReadLine();  }  }  } |
| Output |  |

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| Q No | 13 |
| Program | Armstrong number using function |
| Code | using System;  using System.Collections.Generic;  using System.Linq;  using System.Text;  using System.Threading.Tasks;  namespace Day\_04\_20220127  {  class Program  {  public static bool Armstrong(int Num1)  {  int Test\_Num, Proc\_Num, Rem\_Dig, Loop\_index, Num\_Index, Dig\_Pow;  // Procesing  // find number of digits in given number  for (Num\_Index = 0, Proc\_Num = Num1; Proc\_Num > 0; Num\_Index++, Proc\_Num /= 10) ;  // Suming each digit to power of number of digits  Test\_Num = 0;  Proc\_Num = Num1;  do  {  Rem\_Dig = Proc\_Num % 10;  Dig\_Pow = 1;  for (Loop\_index = 0; Loop\_index < Num\_Index; Loop\_index++)  Dig\_Pow = Dig\_Pow \* Rem\_Dig;  Test\_Num = Test\_Num + Dig\_Pow;  Proc\_Num /= 10;  } while (Proc\_Num > 0);  if (Test\_Num == Num1) return true;  else return false;  }  static void Main(string[] args)  {  //Setting up i.e., Declare & initiation Section  int Num;  // Accepting user input or colleting base data  Console.WriteLine("Enter a Number for check ing Armstrong Number or not ");  Num = Convert.ToInt32(Console.ReadLine());  // Check & Displaying output  if(Armstrong(Num))  Console.WriteLine(Num+ " is a Armstrong number");  else  Console.WriteLine(Num + " is not a Armstrong number");  Console.ReadLine();  }  }  } |
| Output |  |

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| Q No | 14 |
| Program | Armstrong number in a range |
| Code | using System;  using System.Collections.Generic;  using System.Linq;  using System.Text;  using System.Threading.Tasks;  namespace Day\_04\_20220127  {  class Program  {  public static bool Armstrong(int Num1)  {  int Test\_Num, Proc\_Num, Rem\_Dig, Loop\_index, Num\_Index, Dig\_Pow;  // Procesing  // find number of digits in given number  for (Num\_Index = 0, Proc\_Num = Num1; Proc\_Num > 0; Num\_Index++, Proc\_Num /= 10) ;  // Suming each digit to power of number of digits  Test\_Num = 0;  Proc\_Num = Num1;  do  {  Rem\_Dig = Proc\_Num % 10;  Dig\_Pow = 1;  for (Loop\_index = 0; Loop\_index < Num\_Index; Loop\_index++)  Dig\_Pow = Dig\_Pow \* Rem\_Dig;  Test\_Num = Test\_Num + Dig\_Pow;  Proc\_Num /= 10;  } while (Proc\_Num > 0);  // Check & Displaying output  if (Test\_Num == Num1) return true;  else return false;  }  static void Main(string[] args)  {  //Setting up i.e., Declare & initiation Section  int F\_Num,T\_Num,Loop\_Index;    // Accepting user input or colleting base data  Console.WriteLine("Enter Starting Number to List Armstrong Numbers ");  F\_Num = Convert.ToInt32(Console.ReadLine());  Console.WriteLine("Enter Ending Number of List ");  T\_Num = Convert.ToInt32(Console.ReadLine());  // Check & Displaying output  Console.WriteLine("List of Armstrong number from " + F\_Num + " to " + T\_Num);  for(Loop\_Index=F\_Num;Loop\_Index<=T\_Num;Loop\_Index++)  if (Armstrong(Loop\_Index))  Console.WriteLine(Loop\_Index);  Console.ReadLine();  }  }  } |
| Output |  |

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| Q No | 15 |
| Program | Sum of digits of given number |
| Code | using System;  using System.Collections.Generic;  using System.Linq;  using System.Text;  using System.Threading.Tasks;  namespace Day\_04\_20220127  {    class Program  {    static void Main(string[] args)  {  //Sum of digits of given number  //Setting up i.e., Declare & initiation Section  int Num,Sum\_Dig,Temp\_Num;  // Accepting user input or colleting base data  Console.WriteLine("Enter Number to find sum of digits");  Num = Convert.ToInt32(Console.ReadLine());  // Procssing  Temp\_Num = Num;  Sum\_Dig = 0;  while (Temp\_Num > 0)  {  Sum\_Dig += Temp\_Num % 10;  Temp\_Num /= 10;  }  Console.WriteLine(" Sum of digits of "+Num+" is "+Sum\_Dig);  Console.ReadLine();  }  }  } |
| Output |  |

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| Q No | 16 |
| Program | Reverse of given number |
| Code | using System;  using System.Collections.Generic;  using System.Linq;  using System.Text;  using System.Threading.Tasks;  namespace Day\_04\_20220127  {    class Program  {    static void Main(string[] args)  {  //Reverse of given number  //Setting up i.e., Declare & initiation Section  int Num,R\_Num,Temp\_Num;  // Accepting user input or colleting base data  Console.WriteLine("Enter Number for reversing ");  Num = Convert.ToInt32(Console.ReadLine());  // Procssing  Temp\_Num = Num;  R\_Num = 0;  while (Temp\_Num > 0)  {  R\_Num=R\_Num\*10+Temp\_Num % 10;  Temp\_Num /= 10;  }  Console.WriteLine(" Reverse of "+Num+" is "+R\_Num);  Console.ReadLine();  }  }  } |
| Output |  |

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| Q No | 17 |
| Program | Palindrome number |
| Code | using System;  using System.Collections.Generic;  using System.Linq;  using System.Text;  using System.Threading.Tasks;  namespace Day\_04\_20220127  {    class Program  {    static void Main(string[] args)  {  //Palindrome number  //Setting up i.e., Declare & initiation Section  int Num,R\_Num,Temp\_Num;  // Accepting user input or colleting base data  Console.WriteLine("Enter a Number for Palindrome number checking ");  Num = Convert.ToInt32(Console.ReadLine());  // Procssing  Temp\_Num = Num;  R\_Num = 0;  while (Temp\_Num > 0)  {  R\_Num=R\_Num\*10+Temp\_Num % 10;  Temp\_Num /= 10;  }  // Display Output  if (Num == R\_Num)  Console.WriteLine(Num + " is a Palidrome Number");  else  Console.WriteLine(Num + "is not a Palidrome Number");  Console.ReadLine();  }  }  } |
| Output |  |

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| Q No | 18 |
| Program | Swap numbers using third variable |
| Code | using System;  using System.Collections.Generic;  using System.Linq;  using System.Text;  using System.Threading.Tasks;  namespace Day\_04\_20220127  {    class Program  {    static void Main(string[] args)  {    //Setting up i.e., Declare & initiation Section  int Num1,Num2,Temp\_Num;  // Accepting user input or colleting base data  Console.WriteLine("Enter Two Numbers for Swaping them ");  Num1 = Convert.ToInt32(Console.ReadLine());  Num2 = Convert.ToInt32(Console.ReadLine());  // Procssing  Temp\_Num = Num1;  Num1 = Num2;  Num2 = Temp\_Num;  // Display Output  Console.WriteLine(“Swaped numbers are "+Num1+" & "+Num2);  Console.ReadLine();  }  }  } |
| Output |  |

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| Q No | 19 |
| Program | Swap numbers without using third variable |
| Code | using System;  using System.Collections.Generic;  using System.Linq;  using System.Text;  using System.Threading.Tasks;  namespace Day\_04\_20220127  {    class Program  {    static void Main(string[] args)  {  //Swap numbers without using third variable  //Setting up i.e., Declare & initiation Section  int Num1,Num2;  // Accepting user input or colleting base data  Console.WriteLine("Enter Two Numbers for Swaping them ");  Num1 = Convert.ToInt32(Console.ReadLine());  Num2 = Convert.ToInt32(Console.ReadLine());  // Procssing  Num1 = Num1+Num2;  Num2 = Num1 - Num2;  Num1 = Num1 - Num2;  // Display Output  Console.WriteLine("Swaped and numbers are "+Num1+" & "+Num2);  Console.ReadLine();  }  }  } |
| Output |  |

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| Q No | 20 |
| Program | Print stars(\*) in pattern (right angle triangle pattern) |
| Code | using System;  using System.Collections.Generic;  using System.Linq;  using System.Text;  using System.Threading.Tasks;  namespace Day\_04\_20220127  {    class Program  {  static void Main(string[] args)  {  //Print stars(\*) in pattern (right angle triangle pattern)  //Setting up i.e., Declare & initiation Section  int Num\_Rows, Loop\_Index1, Loop\_Index2;  // Accepting user input or colleting base data  Console.WriteLine("Enter Number of Rows ");  Num\_Rows = Convert.ToInt32(Console.ReadLine());  // Procssing & Display Output  for (Loop\_Index1 = 0; Loop\_Index1 < Num\_Rows; Loop\_Index1++)  {  for (Loop\_Index2 = 0; Loop\_Index2 <= Loop\_Index1; Loop\_Index2++)  Console.Write("\* ");  Console.WriteLine("");  }  Console.ReadLine();  }  }  } |
| Output |  |