**Programming Solutions**

**Programming Concept: (e.g. Nested IFs)**

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| --- | --- | --- | --- |
| **Q / TASK** | **Code** | **Console Output** | **Comments/Problems** |
| Task 2a | Module Module1  Sub Main()  Dim num1 As Integer  Dim num2 As Integer  Do  Console.WriteLine("Input num1")  num1 = Console.ReadLine()  Loop Until num1 < 100  Do  Console.WriteLine("Input num2(smaller than num1)")  num2 = Console.ReadLine()  Loop Until num2 < num1 And num2 <> 0  Console.WriteLine("{0} / {1} = {2}", num1, num2, num1 / num2)  Console.ReadLine()  End Sub  End Module |  |  |
| Task 2b | Module Module1  Sub Main()  Console.WriteLine("Enter the word")  Dim words As String = Console.ReadLine()  Dim input As String  Console.WriteLine("Enter the specific word")  input = Console.ReadLine()  Do Until input = words  Console.WriteLine("Wrong! Enter the specific word")  input = Console.ReadLine()  Loop  End Sub  End Module |  |  |
| Task 3 | Console.WriteLine("Enter date of birth as separate integers for year, then month, then day")  Dim iyear, iday, imonth As String  Dim DOB As Date  Dim nowdate As Date = Date.Now  Dim year As Integer = nowdate.Year  Dim month As Integer = nowdate.Month  Dim day As Integer = nowdate.Day  Console.WriteLine("Please enter the year you were born:")  iyear = Console.ReadLine()  Do While iyear > year Or iyear < 1900  Console.WriteLine("I dont think that can be possible Please try again")  iyear = Console.ReadLine()  Loop  Dim leap As Boolean = Date.IsLeapYear(iyear)  Console.WriteLine("Please enter the month you were born:")  imonth = Console.ReadLine()  Do While imonth >= 13 Or imonth < 1 Or (year = iyear And imonth > month)  Console.WriteLine("Please enter the month number between 1 and 12")  imonth = Console.ReadLine()  Loop  Console.WriteLine("Please enter the day you were born:")  iday = Console.ReadLine()  Do While iday > Date.DaysInMonth(iyear, imonth) Or iday < 1 Or (year = iyear And month = imonth And iday > day) Or (leap = True And month = 2 And day > 27) Or (leap = False And month = 2 And day > 28)  Console.WriteLine("Please enter valid day number")  iday = Console.ReadLine()  Loop  Console.WriteLine("Your DOB has been validated and is:{0}/{1}/{2}", iday, imonth, iyear)  Console.ReadLine() |  |  |
| Task4 | Dim time, distance As Integer  Dim retry As Boolean  Console.WriteLine("Runners' Pace Calculator")  Console.WriteLine("This program will calculate your pace per mile")  Console.WriteLine()  Do  Try  Console.WriteLine("Enter the distance you ran in miles: ")  distance = Console.ReadLine()  retry = False  Catch ex As InvalidCastException  Console.WriteLine("Please enter a whole number")  retry = True  End Try  Loop Until retry = False  retry = False  Do  Try  Console.WriteLine("Enter the time taken in mintues: ")  time = Console.ReadLine()  retry = False  Catch ex As InvalidCastException  Console.WriteLine("Please enter a whole number")  retry = True  End Try  Loop Until retry = False  Console.WriteLine("Your current pace per miles is {0} minutes to a mile", distance / time)  Console.ReadLine() |  |  |
|  | 1. Range check 2. Length check 3. Type check 4. Lookup check 5. Check digit 6. Presence check | * Birth year * Phone number * Email with @ and . * A calender to choose date * ISBN Credit card * Username/password |  |
|  | 1. Validate the following number with its check digit (using Modulus 11): **1858134153**. | |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | 1 | 8 | 5 | 8 | 1 | 3 | 4 | 1 | 5 |  | 3 | | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 |  |  | | 10 | 72 | 40 | 56 | 6 | 15 | 16 | 3 | 10 | 228 |  | |  |  |  |  |  |  |  |  |  | 8 |  | |  |  |  |  |  |  |  |  |  | 11-8 = 3 |  | |  |

Note: Please make sure you save this document as ‘**if\_solution\_yourname.doc’**