**Q136: Ugly Numbers**

Ugly Number的定義為：該數之質因數必須為 2, 3 或 5

當然了，依照慣例，1 也算是 Ugly Number。

在此列舉一串數列：

1, 2, 3, 4, 5, 6, 8, 9, 10, 12, 15

這些就是前 11 個 Ugly Numbers。

請寫一個程式求出第1500個Ugly Number。

Input

No input

Output

The 1500'th ugly number is <number>.

**程式碼**

Imports System.IO

Public Class Form1

Dim fw As New FileInfo("output.txt")

Dim sw As StreamWriter = fw.CreateText

Dim n, i As Integer

Dim a() As Integer = {2, 3, 5}

Dim aa(2) As Decimal

Private Sub Form1\_Load(ByVal sender As System.Object, ByVal e As System.EventArgs) Handles MyBase.Load

If fw.Exists = False Then

fw.Create()

End If

aa(0) = 1

Do

For k = 0 To 2

For j = 0 To n '檢查是否有重複ㄉ

If aa(j) = a(k) \* aa(i) Then

Exit For

ElseIf j = n Then

n += 1 : ReDim Preserve aa(n)

aa(n) = a(k) \* aa(i) '乘以自己本身的倍數已得出新數

End If

Next

Next

Array.Sort(aa) '小到大排列

If n >= 1600 Then

sw.WriteLine("The 1500'th ugly number is <" & aa(1499) & ">.") : Exit Do

End If

i += 1

Loop

sw.Flush() : sw.Close() : End

End Sub

End Class