Generating Expressions

When doing these it is important that you consider data from a relatively wide perspective. It is not critical whether you identify it as user data or additional data.

1. user data: none
   add. data: inComeOut [a Boolean variable]
   assumptions: variable was set to True or False
   expression: inComeOut
   or alternatively: inComeOut = True

2. user data: none
   add. data: roll1, roll2 (both integers)
   assumptions: natural = roll of 7 or 11
   expression: (roll1 + roll2) = 7 Or (roll1 + roll2) = 11
   Note that the parentheses are not necessary. Also, I could have declared a variable "total", assigned it the value of roll1 + roll2, and used total = 7 Or total = 11

3. user data: none
   add. data: total [see #2], point [integer value, determine in previous roll]
   assumptions: ...
   expression: total = point

4. user data: score [integer or double]
   add. data: N/A
   assumptions: a B value is in [80...90]
   expression: score >= 80 And score < 90

5. user data: none
   add. data: none
   assumptions: none
   expression: Me.BackColor.R > 0

6. user data: none
   add. data: none
   assumptions: none

7. user data: none
   add. data: none
   assumptions: none
   expression: Me.BackColor = btnName.BackColor

8. user data: word [a string variable, probably comes from what the user typed]
   add. data: none
   assumptions: none
   expression: word.IndexOf("a") >= 0 Or word.IndexOf("A") >= 0 Or word.IndexOf("e") >= 0 Or word.IndexOf("E") >= 0 Or word.IndexOf("i") >= 0 Or word.IndexOf("I") >= 0 Or word.IndexOf("o") >= 0 Or word.IndexOf("O") >= 0 Or word.IndexOf("u") >= 0 Or word.IndexOf("U") >= 0
   NOTE: I believe you can continue lines by placing an underscore at the end of the line

9. user data: rdoSmall
   add. data: none
   assumptions: none
   expression: rdoSmall.Checked
   or alternatively: rdoSmall.Checked = True

10. user data: rdoSmall, rdoMedium, rdoLarge, rdoFamily
   add. data: none
   assumptions: none
   expression: rdoSmall.Checked Or rdoMedium.Checked Or rdoLarge.Checked Or rdoFamily.Checked Or
11. user data: rdoSpecial, rdoMeats, rdoVegie, ... rdoCustom
   add. data: none
   assumptions: none
   expression: rdoCustom.Checked

12. user data: deadline [a date variable, presumably set by in code or user input]
   add. data: none
   assumptions: none
   expression: deadline < Now
   [we used DateTime.Now in class, you can use Now by itself]

13. user data: txtEmail
   add. data: none
   assumptions: none
   expression: txtEmail.Text <> ""  
   [This checks to see if the text box is NOT empty, i.e., the user entered something. 
   To see if it is empty use txtEmail.Text = ""]

14. user data: txtEmail
    add. data: start [integer set to position 4 characters before last, i.e.,
     start = txtEmail.Text.Length - 4 ]
     ending [string set to txtEmail.Text.Substring(start)]
   expression: ending = ".com" Or ending = ".biz"

15. user data: N/A
    add. data: rating [string variable with value of G, PG, PG-13, R, NC-17]
     withAdult [Boolean variable set appropriately]
    assumptions: none
    expression: rating = "G" Or rating "PG" Or rating ="PG-13" _
     Or (rating = "R" And withAdult)
     [NOTE: the parentheses should not be necessary]

16. user data: age, weight, height
    add. data: none
    assumptions: none
    expression: (age >= 6 And age <= 11) And height < 57 And weight < 60

17. user data: usCitizen, iowaResident, felon, incompetent, voteElsewhere [Booleans]
    add. data: age [at election time]
    assumptions: none
    expression: usCitizen And iowaResident and age >= 18 And Not Felon _
     And Not Incompetent And Not voteElsewhere
     alternatively: usCitizen And iowaResident And age >= 18 _
     And Not (Felon or Incompetent or voteElsewhere)

18. user data: age, yearsInUS [integers]; nativeBorn, parentIsCitizen [Booleans]
    add. data: none
    assumptions: none
    expression: (nativeBorn Or parentIsCitizen) And age >= 35 And yearsInUS >= 14

19. user data: age, yearsService [doubles]; IPERSemployed [Boolean]
    add. data: none
    assumptions: none
    expression: (age > 55 And age + yearsService >= 88) _
     Or (age > 62 And yearsService >= 20) Or (age > 65) _
     And Not IPERSemployed

20. user data: year
    add. data: none
    assumptions: none
    expression: (year Mod 400 = 0) Or (year Mod 4 = 0 And year mod 100 <> 0)
21. user data: preferred [Boolean]; homeState [string]; policies [integer]
add. data: none
assumptions: none
expression: (preferred Or (homeState <> "Iowa" Or policies < 2)) _

                 And (Not Preferred Or (homeState <> "Iowa" And policies < 2))