

File Edit View History Bookmarks Tools Help

start

www.pgrocer.net/Cis17/incless/loopifplay.html

Most Visited First problem we solved in class.

In Class Exercise on loops and if statements:

These are unrealistic problems, but they help to make sure that you understand the flow of logic and can follow it through to completion.

Problems #1:

```
start
firstNum = 100
secondNum = 5
thirdNum = 12
theResult = 0
do while secondNum <= thirdNum
  if firstNum > 500
    firstNum = firstNum * 2
    secondNum = secondNum + 1
  else
    firstNum = firstNum + 100
    thirdNum = thirdNum - 1
  end if
end while loop
theResult = firstNum + secondNum + thirdNum
display theResult
end
```

Problem #2:

```
start
firstNum = 25
secondNum = 50
thirdNum = 75
fourthNum = 100
ct = 0
workAns = 0
theAns = 0
do while ct < 6
  workAns = firstNum + secondNum
  if workAns > thirdNum
    fourthNum = fourthNum / 2
    firstNum = firstNum * 3
    secondNum = firstNum - secondNum
    thirdNum = thirdNum * 2
  else
    firstNum = firstNum + 10
    secondNum = secondNum + 10
    thirdNum = thirdNum + 10
  end if
  ct = ct + 1
end do
theAns = firstNum + secondNum * thirdNum + fourthNum
display theAns
end
```

Handwritten notes:

Variables

firstNum	secondNum	thirdNum	theResult
100	5	12	0
200	6	11	4815
300	7	10	
400	8	9	
500	9	8	
600	10	7	
1200	11	6	
2400	12	5	
4800	13	4	

Handwritten calculation:

$$\begin{array}{r} 4800 \\ + 200 \\ + 100 \\ \hline 5100 \end{array}$$

Firefox automatically sends some data to Mozilla so that we can improve your experience. Choose What I Share

Class worked on this and then we solved it on the board.

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  else
    firstNum = firstNum + 100
    thirdNum = thirdNum - 1
  end if
end while loop
theResult = firstNum + secondNum + thirdNum
display theResult
end
    
```

Problem #2:

```

start
firstNum = 25
secondNum = 50
thirdNum = 75
fourthNum = 100
ct = 0
workAns = 0
theAns = 0
do while ct < 6
  workAns = firstNum + secondNum
  if workAns > thirdNum
    fourthNum = fourthNum / 2
    firstNum = firstNum * 3
    secondNum = firstNum - secondNum
    thirdNum = thirdNum * 2
  else
    firstNum = firstNum + 10
    secondNum = secondNum + 10
    thirdNum = thirdNum + 10
  end if
  ct = ct + 1
end do
theAns = firstNum + secondNum * thirdNum + fourthNum
display theAns
end
    
```

Handwritten Calculations:

Iteration	FirstNum	SecondNum	ThirdNum	FourthNum
1	25	50	75	100
2	35	60	75	50
3	105	45	75	25
4	115	55	330	170
5	125	180	400	400
6	135	180	400	400
7	405	180	400	400

Problem #2 Handwritten Calculations:

Iteration	ct	workAns	theAns
1	0	0	330
2	1	75	400
3	2	95	132430
4	3	150	13
5	4	170	400
6	5	170	132430

ifexampleS10-1.doc [Compatibility Mode] - Word

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B I U abc x, x' Font Paragraph Styles

Find Replace Select

Grocer, Priscilla

Practice exercise:

Payroll file: (each record is payRecord)

idno	name	payHr	regHrs	ovtHrs
1111	John Doe	20	40	10
1234	Ann Costa	25	40	0
2222	Linda Ryan	30	40	20
2345	Bob Smith	30	35	10
EOF				

```

start
read payRecord
do while not endOfFile
  if ovtHrs > 0
    regPay = payHr * regHrs
    ovtPay = payHr * ovtHrs * 1.5
    totPay = regPay + ovtPay
  else
    totPay = payHr * regHrs
  end if
  display totPay
  read payRecord
end do while loop
stop program

```

Processing records in a file or table until you encounter EOF (end of file).

Initializing read 1st record only

reads rest

right before I go back to check

PAGE 1 OF 1 84 WORDS

ifexampleS10-1.doc [Compatibility Mode] - Word

FILE HOME INSERT DESIGN PAGE LAYOUT REFERENCES MAILINGS REVIEW VIEW ADD-INS

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B I U abc X X

Clipboard Font Paragraph Styles

Find Replace Select Editing

Note that the calculation replaces what was in totPay, regPay and ovtPay.

Handwritten: regPay ~~200~~ 1200 1056 outPay ~~300~~ 900 450 totPay ~~1100~~ 1000 2100 1500

Practice exercise:

Payroll file: (each record is payRecord)

idno	name	payHr	regHrs	ovtHrs
1111	John Doe	20	40	10
1234	Ann Costa	25	40	0
2222	Linda Ryan	30	40	20
2345	Bob Smith	30	35	10
EOF				

```

start
read payRecord
do while not endOfFile
if ovtHrs > 0
  regPay = payHr * regHrs
  ovtPay = payHr * ovtHrs * 1.5
  totPay = regPay + ovtPay
else
  totPay = payHr * regHrs
end if
display totPay
read payRecord
end do while loop
stop program

```

Handwritten: ct = ct + 1

In this statement, the replace also involves incrementing. I add 1 to ct and replace ct with the new ct.

Handwritten: UNsuccessful read

Handwritten: 1100 1060 2100 1500

PAGE 1 OF 1 84 WORDS 100%

In all of these the Loops meet the criteria for loops:

First: set the control before entering the loop

Second: the control will determine when to exit the loop

Third: do something in the loop to change the control

There are three different tests in these examples. One of them compares two values, another counts (ct) how many times the loop is executed and one of them stops when end of file is reached.

Logic Flowchart and Pseudocode Quiz

This quiz is going to give you a flowchart for a condition and ask you to answer questions about it.

10
ct

A
code

25
cost

Problem #1: Assume the following:

- 1 will be put into the memory variable ct
- A will be put into the memory variable code
- 25 will be put into the memory variable cost

After following the logic in the flowchart, what will be in the memory variable ct? 0

Problem #2: Assume the following:

- the memory variable ct will contain your answer from problem #1
- A will be put into the memory variable code
- 100 will be put into the memory variable cost

After following the logic in the flowchart, what will be in the memory variable ct?

Problem #3: Assume the following:

- the memory variable ct will contain your answer from problem #2
- B will be put into the memory variable code
- 200 will be put into the memory variable cost

After following the logic in the flowchart, what will be in the memory variable ct?

Problem #4: Assume the following:

- the memory variable ct will contain your answer from problem #3
- A will be put into the memory variable code
- 75 will be put into the memory variable cost

Firefox automatically sends some data to Mozilla so that we can improve your experience. Choose What I Share

Logic Assignment

I want you to play computer. Step through these problems and determine the result.

<pre>start var1 = 10 var2 = 20 wksum = 0 rslt = 0 do while var2 < 30 wksum = var1 + var2 if wksum > 30 var1 = var1 - 2 var2 = var2 + 1 else var1 = var1 - 1 var2 = var2 + 3 end if end while loop rslt = var1 + var2 display rslt end</pre>	<p>Problem #1: When the pseudocode displays rslt, what number will rslt be?</p> <ol style="list-style-type: none">1. rslt = 282. rslt = 293. rslt = 304. rslt = 315. rslt = 32
<pre>start var1 = 10 var2 = 20 wksum = 0 rslt = 0 do until var2 > 30 wksum = var1 + var2 if wksum > 30 var1 = var1 - 2 var2 = var2 + 1 else var1 = var1 - 1 var2 = var2 + 3 end if end until loop rslt = var1 + var2</pre>	<p>Problem #2: When the pseudocode displays rslt, what number will rslt be?</p> <ol style="list-style-type: none">1. rslt = 282. rslt = 293. rslt = 304. rslt = 315. rslt = 32

The screenshot shows a Microsoft Word 2010 window titled "elocigasgnF12.doc [Compatibility Mode] - Word". The ribbon includes FILE, HOME, INSERT, DESIGN, PAGE LAYOUT, REFERENCES, MAILINGS, REVIEW, VIEW, and ADD-INS. The HOME ribbon is active, showing Font, Paragraph, and Styles groups. The document content is as follows:

```
ans = amt1 + amt2
display ans
end
```

Inventory File where each record is invenRecord:

itemNo	onHand	onOrder	reOrdPt
11111	20	40	50
22222	20	30	50
33333	25	15	50
44444	10	50	75
55555	20	0	40
66666	10	25	25
EOF			

Problem #7: Show the output that would be generated if this pseudocode was executed using the data shown. Note that I want to see the output from each of the records you process.

```
start
read invenRecord
do while not endOfFile
totInven = onHand + onOrder
if totInven > reOrdPt
toOrder = 0
else
toOrder = (reOrdPt - (onHand + onOrder)) + 100
end if
display toOrder
read invenRecord
end do while loop
stop program
```

At the bottom of the window, the status bar shows "PAGE 3 OF 6 938 WORDS". The taskbar at the very bottom displays the system clock as 12:07 PM on 10/2/2014.