

Half-Life

This program might prove useful to chemistry or physics teachers or students.

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'Halflife 2.0
'by Scott Ausbrooks
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'This program calculates the amount of radioactive
'material remaining after "x" number of halflives

nomainwin
  WindowWidth = 900
  WindowHeight = 500

  button #1.button1,"Calculate",[action], UL, 10,30,120,50
  button #1.button2,"Clear",[clear], LL, 10,20,120,50
  button #1.button3,"Exit",[quit],LR,120,60,120,50
  textbox #1.textbox0, 650, 30, 180, 60'mass
  textbox #1.textbox1, 650, 130, 180, 60 'halflife
  textbox #1.textbox2, 650, 230, 180, 60'decaytime
  textbox #1.textbox3, 310, 320, 180, 100'result
  statictext #1.originalmass, "Original Mass",550,30,100,50
  statictext #1.decaytime, "Decay Time",550,230,100,50
  statictext #1.halflife, "Half-Life",550,150,100,25
  statictext #1.result, "Result",365,430,100,25
  open "Radioactive Isotope Remaining" for window as #1
  print #1, "font times_new_roman 18 BOLD"
  print #1.textbox0, "!setfocus"
  print #1, "trapclose [quit]"
wait
[action]
  print #1.textbox1,"!contents?"
  input #1.textbox1, halflife$

  print #1.textbox2,"!contents?"
  input #1.textbox2, decaytime$

  print #1.textbox0,"!contents?"
  input #1.textbox0, mass$

  numhalflife = val(decaytime$)/val(halflife$)
  newmass = val(mass$) * (.5^numhalflife)
  print #1.textbox3, "!font times_new_roman 18 bold"
```

```
print #1.textbox3, newmass
wait
[clear]

print #1.textbox0, ""
print #1.textbox1, ""
print #1.textbox2, ""
print #1.textbox3, ""

print #1.textbox0, "!setfocus"
wait

[quit]
confirm "Really quit?";answer$
if answer$ = "no" then wait
close #1:end
```