***Exercises***

Pennies for Pay

Write a program that calculates how much a person earns in a month if the salary is one penny the first day, two pennies the second day, four pennies the third day, and so on with the daily pay doubling each day the employee works. The program should ask the user for the number of days the employee worked during the month, validate that it is between 1 and 31, and then display a table showing how much the salary was for each day worked, as well as the total pay earned for the month. The output should be displayed in pennies points, not in pennies.

Weight Loss

If moderately active persons cut their calorie intake by 500 calories a day, they can typically lose about 4 pounds a month. Write a program that has the users enter their starting weight and then creates and displays a table showing what their expected weight will be at the end of each month for the next 6 months if they stay on this diet.

**.586**

**.MODEL FLAT**

**INCLUDE io.h**

**.STACK 4096**

**.DATA**

**startingWeight DWORD ?**

**poundLost DWORD 4**

**nextSixMonth DWORD 6**

**counter DWORD 0**

**startingWeightPrompt BYTE "Enter Starting Weight?" , 0**

**weightPrompt BYTE "Expected weight is:" , 0**

**finalPrompt BYTE "weight is:" , 0**

**string BYTE 40 DUP (?)**

**sumString BYTE 11 DUP (?)**

**.CODE**

**\_MainProc Proc**

**input startingWeightPrompt, string, 40 ;prompting user for input**

**atod string**

**mov startingWeight, eax**

**mov ebx, startingWeight ;ebx has the starting weight**

**mov ecx, nextSixMonth ; ecx has 6 months**

**forLoop: cmp counter, ecx ; while (counter < 6)**

**jnl endForLoop**

**inc counter ; increment counter by one till it reach 6**

**sub ebx, poundLost ; substract starting weight by 4 each time**

**dtoa sumString, ebx**

**output weightPrompt, sumString ;each substraction output the result**

**jmp forLoop**

**endForLoop:**

**dtoa sumString, ebx**

**output finalPrompt, sumString ;outputting the Final weight result**

**mov eax, 0**

**ret ;exiting**

**\_MainProc ENDP**

**END**

Calories Burned

Running on a particular treadmill, you burn 4 calories per minute. Write a program that uses a loop to display the number of calories burned after 5, 10, 15, 20, 25, and 30 minutes.

**.586**

**.MODEL FLAT**

**INCLUDE io.h**

**.STACK 4096**

**.DATA**

**counter DWORD 0**

**sum DWORD 5**

**cpmPrompt BYTE "Calories Burned is:" , 0**

**string BYTE 40 DUP (?)**

**sumString BYTE 11 DUP(?)**

**.CODE**

**\_MainProc PROC**

**mov eax, counter ;has loop counter**

**mov ebx, 6 ;has 6 : 5-30 is six iterations**

**mov ecx, sum ;has sum = 5**

**imul ecx, 4 ;5 - 30. incrementing 5 min total 20 calories each 5 min**

**forLoop: cmp eax, ebx**

**jnl endForLoop**

**dtoa sumString, ecx**

**output cpmPrompt, sumString**

**add ecx, 20**

**inc eax**

**jmp forLoop**

**endForLoop:**

**jmp exit**

**exit: mov eax, 0**

**ret**

**\_MainProc ENDP**

**END**