Temporal Cycles

CCPROG1 Coursework 6

A man has the ability to go back in time. He wishes to re-live the same span of time over and over again using special crystals. While he lives, he can make a crystal every 9 years. At the end of his life, he can convert the crystals into time allowing him to re-live the period upto 6 years per crystal. When the ritual is activated, a message is written based on the number of crystals. The message written would depend on the number of crystals. The table below shows the message corresponding to the number of crystals:

Crystals	Message	Crystals	Message
0	I	7	ILOVEUAL
1	IL	8	ILOVEUALW
2	ILO	9	ILOVEUALWA
3	ILOV	10	ILOVEUALWAY
4	ILOVE	11	ILOVEUALWAYS
5	ILOVEU	12	ILOVEUALWAYS♥
6	ILOVEUA	13	ILOVEUALWAYS♥!

He can continuously make crystals for as long as he has enough time to live for a specific cycle. Eventually, the man will be unable to make more crystals and will stop the cycles. Write a program that will simulate this.

The program will only ask the user to input the initial lifespan of the time traveler. The prompt for input must use the function askInitialYears from Display.c. The program will print the message generated by the crystals every cycle. Use the function printMessageLetter to print the corresponding letters. Use the same function to display new lines. Once the cycles have ended, the system should display the total years, cycles and crystals using the function printAnswers.

Additional Rules and Situations:

- Use the code template provided. Put your answers in the CW6.C file.
    - https://drive.google.com/file/d/1-A3MXGOcbAcWIjC2jvBRLwuZaSUdlgll/view?usp=sharing
- Fractions of crystals are not transferred between cycles. So for example 100 years will generate 11 crystals. The remaining years will not be used to make crystals and do not carry over to the next cycle.
- Assume the user will always input a positive integer no larger, but including, 120.

Coding Rules:

- This submission must use a loop. Any of the three loops may be used.
- There is no need to use arrays. The message to be displayed should come from the function printMessageLetter including the new line.
- Do not add additional printf and scanf statements. The final display should be the same as the sample screens.

- If the compiler will not allow the heart character to be displayed, do not fix the icon and just let the compiler print whatever character that is supposed to be there.
- Submit only the CW6.c file.
- One can write as many functions as they wish but must all be in the CW6 file.

Submission Details

- Submit CW6.c only.
- Submit into the canvas page:
  - https://dlsu.instructure.com/
  - Go to: Assignments > Course Activities: Homework > CW6: Temporal Cycles
- This activity is worth 20 points
- Deadline: Nov 29, 2022 11:59 PM

Sample Runs

Text in green shows input from the user.

Breakdown

Cycle	*Years lived*	*Crystals made*	*Total Years*	*Total Crystals*
1	100	11	100	11
2	66	7	166	18
3	42	4	208	22
4	24	2	232	24
5	12	1	244	25
6	6	0	250	25

Sample Run

```
Input years    : 100
ILOVEUALWAYS
ILOVEUAL
ILOVE
ILO
IL
I
Total Years    : 250
Total cycles   :   6
Total crystals :  25
```

Breakdown

Cycle	*Years lived*	*Crystals made*	*Total Years*	*Total Crystals*
1	120	13	120	13
2	78	8	198	21
3	48	5	246	26
4	30	3	276	29
5	18	2	294	31
6	12	1	306	32
7	6	0	312	32

Sample Run

```
Input years    : 120
ILOVEUALWAYS♥!
ILOVEUALW
ILOVEU
ILOV
ILO
IL
I
Total Years    : 312
Total cycles   :   7
Total crystals :  32
```