

Homework 1 pseudocode

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Recitation- 326

1)

Input temperature in Fahrenheit

Compute Celsius = $(5/9) (Fahrenheit - 32)$

Display "Celsius"

End

2)

Set days = 365

initial_population = 328,441,687

Birth = 1/8sec

Death = 1/12sec

new_immigrant = 1/27sec

Calculate sec = days * 3600 * 24

Compute final_population = initial_population + Birth - Death + new_immigrant

Display "final_population"

End

3)

Prompt user to choose fox, bunny, sloth, quit

 If user chooses fox then

 Get input agility and strength

 Calculate hire_Score = $1.8 * agility + 2.16 * strength$

 Display "hire_Score"

 Else If user chooses bunny then

 Get input agility and speed

 Initialize strength = 0

 Calculate hire_Score = $1.8 * agility + 0 + 3.24 * speed$

 Display "hire_score"

```

Else    If user chooses sloth then
        Get input strength and speed
        Initialize agility = 0
        Calculate hire_Score = 2.16 * strength + 3.24* speed
        Display "hire_Score"

Else    If user chooses quit
        Print "quit"

Endif
End

```

4A)

```

Set account_balance = 10,000
Set month = 0

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Repeat when account_balance > 0
    Subtract 500 from account_balance
    Multiply by 1.005
    Add 1 to month
    Calculate years = month/12
Display "It will take + years + years for the balance to become 0"

End

```

4B)

For 4A, if the monthly expenditure is less than 50 then the account balance will keep increasing and the algorithm won't terminate. The amount of interest gained each month has to be less than the amount removed from the account balance at the beginning.

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Set month = 0
Input values principal, rate, and monthly_expenditure
Repeat when principal > 0
    If monthly_expenditure > principal * rate

```

Subtract monthly_expenditure from principal
Multiply the principal by rate
Add interest gained to the principal
Add 1 to month
Calculate years = month/12
Display "It will take + years + years for the balance to become 0"

Else Display "Error"

Endif

End

Question 5)

Compile- time errors: they are syntax errors that prevent program from compiling

- 1) There is a missing semicolon
How to fix: By adding a semicolon after endl
- 2) Misspelling identifier 'cot'
How to fix: change spelling to 'cout'

Run-time error: The program output statement is "hello 1300!" but the output we wanted is "Hello 1300!". This error was not detected by the compiler and can be fixed by changing "hello".