Homework 1 pseudocode
Catherine Xiao
Recitation- 326

1)
Input temperature in Fahrenheit
Compute Celsius = (5/9) (Fahrenheit -32)
Display "Celsius"
End

2)
Set days = 365
Set initial_population = 328,441,687

Calculate sec = days * 3600 * 24

Birth = 1/8sec
Death = 1/12sec
new_immigrant = 1/27sec

Compute final_population = (initial_population - Death) + Birth + 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

Repeat when account_balance > 0
        Calculate balance = (account_balance - 500) 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.

Set month = 0
Input values principal, rate, and monthly_expenditure
Set compound_interest = 1 + rate
Repeat when principal > 0

If monthly_expenditure > principal * rate
        Calculate balance = (principal - monthly_expenditure)* (compound_interest)
        Add 1 to month
        Calculate years = month/12
        Display "It will take + years + years for the balance to become 0"

Else   If monthly_expenditure < principal * rate
        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".