Programming Logic and Design

CA-PLDES

Assignment 2

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Student Number: _____

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Date: _____

Results:

Part 1: _____/15

Part 2: _____/15

Total: _____/30

Assignment 2: ABC Insurance

Part 1.

Plan the logic for ABC Insurance company program to determine policy premiums. The program continuously prompts the user for an insurance policy number. When the user enters an appropriate sentinel value, end the program. Call a method that prompts each user for the type of policy needed—health or auto. While the user's response does not indicate health or auto, continue to prompt the user. When the value is valid, return it from the method. Pass the user's response to a new method where the premium is set and returned—$550 for a health policy or $225 for an auto policy. Display the results for each policy. Your task is to create the pseudocode for this solution

```
Start
Declarations
Num Policy_numbers[10] = 0,0,0,0,0,0,0,0,0,0
string Policy_type
num premium
Housekeeping ()
detailLoop()
endofJob()
stop


Housekeeping ()
declaration
Num dep = 0
While Policy_number <> -1 and dep < 10
    Output “Enter policy_number (max up to 10 policies)” , Policy_number
    Policy_numbers[dep] = Policy_number
    dep= dep+1
 End while
Return


detailLoop ()
declare num dep = 0
while dep < 10
     Output “Enter a policy type for policy_numbers[dep]” , Policy_type
      PolicyType()
      Dep = Dep + 1
End while
Return()
```

```
PolicyType()
If Policy_type =health
    Output " Policy premium for policy_numbers[dep] is $550"
Else if Policy_type =auto
    Output " Policy premium for policy_numbers[dep] is $225"
Return()
```

Part 2.
Modify Exercise 8a so that the premium-setting method calls one of two additional methods—one that determines the health premium or one that determines the auto premium. The health insurance method asks users whether they smoke; the premium is $550 for smokers and $345 for nonsmokers. The auto insurance method asks users to enter the number of traffic tickets they have received in the last three years. The premium is $225 for drivers with three or more tickets, $190 for those with one or two tickets, and $110 for those with no tickets. Each of these two methods returns the premium amount to the calling method, which returns the amount to be displayed.

```
Start
Declarations
Num Policy_numbers[10] = 0,0,0,0,0,0,0,0,0,0
string Policy_type
num premium
Housekeeping ()
detailLoop()
endofJob()
stop


Housekeeping ()
declaration
Num dep = 0
While Policy_number <> -1 and dep < 10
    Output “Enter policy_number (max up to 10 policies)” , Policy_number
     Policy_numbers[dep] = Policy_number
     dep= dep+1
End while
Return


detailLoop ()
declare num dep = 0
while dep < 10
    Output “Enter a policy type for policy_numbers[dep]” , Policy_type
    PolicyType()
    Dep = Dep + 1
End while
Return()


PolicyType ()
If Policy_type =health
   Premium=HealthPremium()
Elseif Policy_type= auto
    Premium=AutoPremium()
return
```

```
HealthPremium()
String smoking_habit
Output “Do you smoke?”, smoking_habit
If smoking_habit =yes
    Premium = $550
Else
    premium = $345
return()


AutoPremium()
Num tickets
Output “ Enter the number of tickets received in last 3 years” , tickets
If  ticket >=3 then
   Premium =$225
Else if ticket >=1 then
   Premium = $190
Else
   Premium = $110
Return()
```