```
# PROBLEM 7.3

Account
-  id: int
-  balance: float
-  annualInterestRate: float

+ Account(id: int, balance: float, annualInterestRate: float)
+ getId(): int
+ setId(id: int)
+ getBalance(): float
+ setBalance(balance: float)
+ getAnnualInterestRate(): float
+ setAnnualInterestRate(annualInterestRate: float)
+ getMonthlyInterestRate(): float
+ getMonthlyInterest(): float
+ withdraw(amount: float)
+ deposit(amount: float)

class Account:
    def __init__(self, id = 0, balance = 100, annualInterestRate = 0):
        self.__id = id
        self.__balance = balance
        self.__annualInterestRate = annualInterestRate
    def getId(self):
        return self.__id
    def setId(self, id):
        self.__id = id
    def getBalance(self):
        return self.__balance
    def setBalance(self, balance):
        self.__balance = balance
    def getAnnualInterestRate(self):
        return self.__annualInterestRate
    def setAnnualInterestRate(self, annualInterestRate):
        self.__annualInterestRate = annualInterestRate
    def getMonthlyInterestRate(self):
        return self.__annualInterestRate / 12
    def getMonthlyInterest(self):
        return self.__balance * self.getMonthlyInterestRate()
    def withdraw(self, amount):
        self.__balance -= amount
    def deposit(self, amount):
        self.__balance += amount
account = Account(1122, 20000, 4.5)
account.withdraw(2500)
account.deposit(3000)
print("Account ID:", account.getId())
print("Balance:", account.getBalance())
print("Monthly Interest Rate:", account.getMonthlyInterestRate())
print("Monthly Interest:", account.getMonthlyInterest())

= RESTART: C:/Users/Caden
Roberts/AppData/Local/Programs/Python/Python311/Chapter 1.py
```

```
Account ID: 1122
Balance: 20500
Monthly Interest Rate: 0.375
Monthly Interest: 7687.5

# PROBLEM 7.5

                    +---------------+
                    | RegularPolygon |
                    +---------------+
                    | - n: int       |
                    | - side: float  |
                    | - x: float     |
                    | - y: float     |
                    +---------------+
                    | + RegularPolygon(n: int = 3, side: float = 1, x:
float = 0, y: float = 0)
                    | + getSides(): int
                    | + setSides(n: int)
                    | + getLength(): float
                    | + setLength(side: float)
                    | + getX(): float
                    | + setX(x: float)
                    | + getY(): float
                    | + setY(y: float)
                    | + getPerimeter(): float
                    | + getArea(): float
                    +---------------+

import math
class RegularPolygon:
    def __init__(self, n=3, side=1, x=0, y=0):
        self.__n=n
        self.__side=side
        self.__x=x
        self.__y=y
    def getSides(self):
        return self.__n
    def setSides(self, n: int):
        self.__n=n
    def getLength(self):
        return self.__side
    def setLength(self, side: float):
        self.__side=side
    def getX(self):
        return self.__x
    def setX(self, x: float):
        self.__x=x
    def getY(self):
        return self__y
    def setY(self, y: float):
        self.__y=y
    def getPerimeter(self):
        return self.__n * self.__side
```

```
    def getArea(self):
        return (self.__n * (self.__side **
2))/(4*math.tan(math.pi/self.__n))

Polygon1 = RegularPolygon()
Polygon2 = RegularPolygon(6,4)
Polygon3 = RegularPolygon(10, 4, 5.6, 7.8)

print("Perimeter of Polygon %d: %f\nArea of Polygon %d:
%f\n"%(1,Polygon1.getPerimeter(),1,Polygon1.getArea()))
print("Perimeter of Polygon %d: %f\nArea of Polygon %d:
%f\n"%(2,Polygon2.getPerimeter(),2,Polygon2.getArea()))
print("Perimeter of Polygon %d: %f\nArea of Polygon %d:
%f\n"%(3,Polygon3.getPerimeter(),3,Polygon3.getArea()))

Polygon1 = RegularPolygon()
Polygon2 = RegularPolygon(6,4)
Polygon3 = RegularPolygon(10, 4, 5.6, 7.8)

print("Perimeter of Polygon %d: %f\nArea of Polygon %d:
%f\n"%(1,Polygon1.getPerimeter(),1,Polygon1.getArea()))
print("Perimeter of Polygon %d: %f\nArea of Polygon %d:
%f\n"%(2,Polygon2.getPerimeter(),2,Polygon2.getArea()))
print("Perimeter of Polygon %d: %f\nArea of Polygon %d:
%f\n"%(3,Polygon3.getPerimeter(),3,Polygon3.getArea()))

= RESTART: C:/Users/Caden
Roberts/AppData/Local/Programs/Python/Python311/Chapter 1.py
Perimeter of Polygon 1: 3.000000
Area of Polygon 1: 0.433013

Perimeter of Polygon 2: 24.000000
Area of Polygon 2: 41.569219

Perimeter of Polygon 3: 40.000000
Area of Polygon 3: 123.107341

# PROBLEM 8.4

def count(s: str, ch: chr):
    count=0
    for i in range (0, len(s)):
        if (s[i] == ch):
            count+=1
    return count
s = input("Enter a String: ")
ch = input("Enter a Character: ")
print(f"There are {count(s,ch)} {ch}'s in \"{s}\"")

= RESTART: C:/Users/Caden
Roberts/AppData/Local/Programs/Python/Python311/Chapter 1.py
Enter a String: The man woke up with a spring in his step, and love in his
soul.
Enter a Character: e
```

There are 4 e's in "The man woke up with a spring in his step, and love in his soul."