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| **Program 01** |
| **Output** |
| >>>  === RESTART: /Users/biniamlemma/Desktop/CSCI\_2061/Assn\_07/Assn\_07\_part1.py ===  1st Mortgage is for $1000, 12% interest rate and a period of 10 years  Monthly payment for 1st mortgage is $14.35  Total Payments for 1st mortgage is $1721.65  2st Mortgage is for $2000, 06% interest rate and a period of 20 years  Monthly payment for 2st mortgage is $14.33  Total Payments for 2st mortgage is $3438.87  >>> |
| **Source Code** |
| # CSCI 2061, Assignment 07, Problem 01  # Biniam Lemma  # This program calculates monthly payments and total payments of mortgage  #Mortgage class  class Mortgage:  #No arg Constractor  def \_\_init\_\_():  self.\_loanAmount = 0  self.\_annualRate = 0  self.\_years = 0    #Constractor that tekes three arguments and initializes the data memebers  def \_\_init\_\_(self, loanAmount = 0, annualRate = 0, years = 0):  self.\_loanAmount = loanAmount  self.\_annualRate = annualRate  self.\_years = years  self.\_monthlyRate = annualRate/12  self.\_numPayments = years\*12  #setLoanAmount method that initializes the loanAmount  def setLoanAmount(self, loanAmount):  self.\_loanAmount = loanAmount  #setLoanAmount method that initializes the annualRate and monthlyRate  def setAnnualRate(self, annualRate):  self.\_annualRate = annualRate  self.\_monthlyRate = annualRate/12  #setLoanAmount method that initializes the years and numbPayments  def setYear(self, years):  self.\_years = years  self.\_numPayments = years\*12  #getMonthlyPayment, accessor method, that calculate and returns the monthlyPayment  def getMonthlyPayment(self):  self.\_monthlyPayment = self.\_loanAmount \* (self.\_monthlyRate\*(1+self.\_monthlyRate)\*\*self.\_numPayments)/(((1 + self.\_monthlyRate)\*\*self.\_numPayments) - 1)  return self.\_monthlyPayment  #getPayBack, accessor method, that calculates and returns the total payment  def getPayBack(self):  return self.getMonthlyPayment() \* self.\_numPayments  #main function  def main():  #mortgage class invocation to create an object  mortgage1 = Mortgage(1000, 0.12, 10)  mortgage2 = Mortgage()  mortgage2.setLoanAmount(2000)  mortgage2.setAnnualRate(0.06)  mortgage2.setYear(20)  #Displaying the results  print('1st Mortgage is for $1000, 12% interest rate and a period of 10 years')  print('Monthly payment for 1st mortgage is ${:.2f}'.format(mortgage1.getMonthlyPayment()))  print('Total Payments for 1st mortgage is ${:.2f}'.format(mortgage1.getPayBack()))  print()  print('2st Mortgage is for $2000, 06% interest rate and a period of 20 years')  print('Monthly payment for 2st mortgage is ${:.2f}'.format(mortgage2.getMonthlyPayment()))  print('Total Payments for 2st mortgage is ${:.2f}'.format(mortgage2.getPayBack()))      if \_\_name\_\_ == "\_\_main\_\_":  main() |

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| **Program 02** |
| **Output** |
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| **Source Code** |
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| **Program 03** |
| **Output** |
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| **Source Code** |
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| **Program 04** |
| **Output** |
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| **Source Code** |
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| **Program 05** |
| **Output** |
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| **Source Code** |
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