

**src/AmortizedLoan.cpp**

```
1 // Title : AmortizedLoan.cpp
2 // Desc : Header file for AmortizedLoan.cpp
3 // Name : An Tran
4
5 #include "AmortizedLoan.h"
6
7 #include <cmath>
8
9 // constructors
10 AmortizedLoan::AmortizedLoan() : Loan({});
11 AmortizedLoan::AmortizedLoan(float principal, float interestRate, int loanLength)
12     : Loan(principal, interestRate, loanLength, "Amortized Loan"){
13
14 // other
15 float AmortizedLoan::monthlyPayment() {
16 float monthlyInterestRate = getInterestRate() / 12 / 100;
17 int totalMonths = getLoanLength() * 12;
18 float numerator = getPrincipal() * monthlyInterestRate * std::pow(1 +
monthlyInterestRate, totalMonths);
19 float denominator = std::pow(1 + monthlyInterestRate, totalMonths) - 1;
20 return numerator / denominator;
21 };
22
```