

Create a mortgage calculator API using any language/tech stack. The API should accept and return JSON.

GET /payment-amount

Get the recurring payment amount of a mortgage

Params:

Asking Price

Down Payment\*

Payment schedule\*\*\*

Amortization Period\*\*

Return:

Payment amount per scheduled payment

GET /mortgage-amount

Get the maximum mortgage amount

Params:

payment amount

Down Payment(optional)\*\*\*\*

Payment schedule\*\*\*

Amortization Period\*\*

Return:

Maximum Mortgage that can be taken out

PATCH /interest-rate

Change the interest rate used by the application

Params:

Interest Rate

Return:

message indicating the old and new interest rate

\* Must be at least 5% of first \$500k plus 10% of any amount above \$500k (So \$50k on a \$750k mortgage)

\*\* Min 5 years, max 25 years

\*\*\* Weekly, biweekly, monthly

\*\*\*\* If included its value should be added to the maximum mortgage returned

Mortgage interest rate 2.5% per year

Mortgage insurance is required on all mortgages with less than 20% down. Insurance must be calculated and added to the mortgage principal. Mortgage insurance is not available for mortgages > \$1 million.

Mortgage insurance rates are as follows:

Down payment	Insurance Cost
5-9.99%	3.15%
10-14.99%	2.4%
15%-19.99%	1.8%
20%+	N/A

Payment formula:  $P = L[c(1 + c)^n]/[(1 + c)^n - 1]$

P = Payment

L = Loan Principal

c = Interest Rate