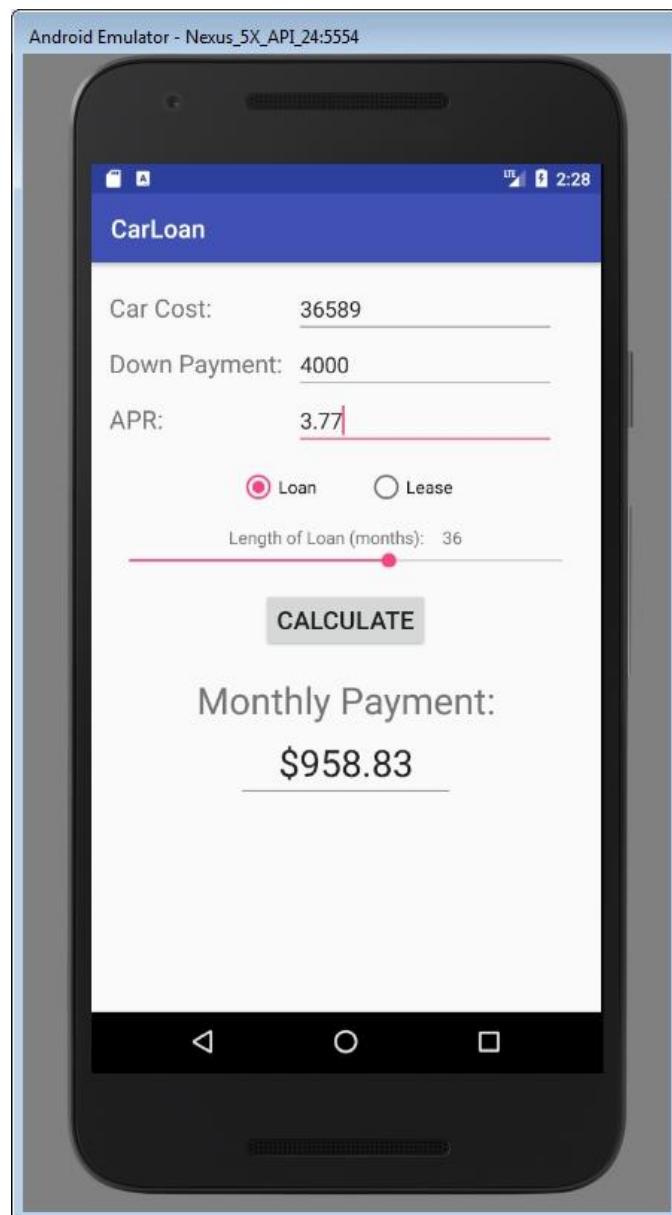


CSCI 311 – App Assignment

Car Loan Calculator

Create an app that calculates the monthly payment for a car loan given:

- the purchase price for the car
- the amount of the down payment
- the annual interest rate for the loan or lease
- the length of the loan or lease in months



The app must include:

- seek bar to select the number of months (ranging from 1 to 60)
- radio buttons for loan vs. lease

The monthly payment must be displayed to 2 decimal places.

The app interface must be organized and aesthetically pleasing.

The app must be robust (i.e. to odd behavior/errors/crashes).

MONTHLY PAYMENT: Use the formula below to calculate the monthly payment:

$$P = mr * L / (1 - (1 + mr)^{-n})$$

- P: monthly payment
- mr: monthly interest rate (annual rate/12)
- L: amount of loan
- n: number of payments (i.e. number of months)

LOAN vs. LEASE: For the purpose of this app, the monthly payment for a lease is calculated the same way as the monthly payment for a loan with the following exceptions: the purchase price of the car is divided by 3 and the number of monthly payments is fixed at 36.

Example from screenshot:

$$mr = .0377 / 12 = .00314166666667$$

$$L = 36589 - 4000 = 32589$$

$$n = 36$$

$$\begin{aligned} P &= .00314166666667 * 32589 / (1 - (1 + .00314166666667)^{-36}) \\ &= 102.383775000109 / (1 - 0.89321969441872) \\ &= 102.383775000109 / 0.10678030558128 \\ &= 958.82639071655 \\ &= \$958.83 \end{aligned}$$

So, the customer will pay \$34,517.88 to pay back the 3-year loan, which includes the \$32,589 principal and \$1,928.88 in interest.

If the above example were a lease, the monthly payment would be: \$241.15.