

## CS225 Lab: Apartment Problem Project

### Create the following program

#### User Requirements

A real estate office has hired you, a software engineer, to solve a financial problem. Namely, they own several rental properties with a certain number of apartment units. In one apartment unit complex management has acquired the following information.

- When the rent is \$600 per month, all the units are occupied.
- When the rent is increased by \$40, one unit becomes vacant.
- It costs \$27 per month to maintain one apartment unit.

The real estate office wants you to create a program that will determine the number of apartment units to rent in order to maximize the profit. Use the sample run below as a guide of how your program must operate.

```
How many apartment units are in the complex? 50
What is the rent to occupy all the units? 600
What is the increase in rent that results in a vacant unit? 40
What is the amount to maintain a rented unit? 27

To maximize profits 32 apartments should be rented.
```

#### Software Requirements

Create void function **getUserInput** that receives the original values of the following variables from the main function.

- rentToOccupyAllUnits
- increaseInRentResultingInAVacantUnit
- amountToMaintainRentedUnit
- numOfApartments

Create another function called **calcNumOfUnits** that receives the following parameters and returns an integer of the number of unit to be rented to maximize profits.

- rentToOccupyAllUnits
- increaseInRentResultingInAVacantUnit
- amountToMaintainRentedUnit
- numOfApartments