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Activity 2.4 - Building Algorithms

Objects required:

```
        vehicles
                has one vin
                has one make
                has one model
                has one year
                has one rentedStatus

        customers
                has one customerID
                has one firstname
                has one lastname
                has one sufficientCredit
                has one cleanDrivingRecord
                has many contracts

        contracts
                has one contractID
                has many customers
                has one startDay
                has one startMonth
                has one startYear
                has one length
                has one optionalInsuranceStatus
                has one vehicle

        months
                has one number //order of months
                has one name
                has one length
```

Pseudocode for program:

```
Start
        Declarations
            int contractID, customerID, startDay, startMonth, startYear, endDay, endMonth, endDay, vin,
days, price, lengthContract
            char newContract, additionalDriver, optionalInsuranceStatus
            string firstName, lastName,


        prompt for input a new contract?

        while yes
                prompt for contractID
                        if contractID > 99999 or contractID < 10000
                                System.out.println("This contract number is invalid")
                                QUIT program
                        endif

                prompt for existing customer
                        if existing customer
                                prompt for customerID
                        else
                                prompt new customer ID
                                        if customerID > 999 or customerID < 100
                                                System.out.println("This Customer ID is invalid")
                                                QUIT program
                                        endif
                                prompt for new customer name
                                split customer name into firstName, lastName
                                prompt for sufficientCredit
                                prompt for cleanDrivingRecord
                        endif

                link contract ID to this customer

                prompt for VIN of car to be rented
                        if VIN is currently rented
                                System.out.println("This vehicle is unavailable")
                                quit program
                        endif

                        prompt for start date of contract
                        split into and store startDay, startMonth, startYear
                                if startday < 1 or startday > startMonth.length
                                        System.out.println("This date is invalid")
                                        QUIT Program
                                endif
                        save date to contract
```

```
                prompt for length of contract
                        if length of contract <1 days || >30 days
                                System.out.println("Contract length is invalid")
                                QUIT program
                        endif

                        if length of contract + startDay > startMonth.length
                                endDay = length of contract - startDay
                                endMonth = startMonth + 1
                        else
                                endDay = startDay + length of contract
                                endMonth = startMonth
                        endif

                prompt for optional insurance

                if length of contract > 10
                        price = length of contract * 25
                else
                        days = length of contract - 10
                        price = 250 + (days * 18)
                endif

                if optional insurance == yes
                        price += length of contract * 2.5
                endif

                prompt for additional drivers
                        while additional drivers == yes
                                prompt for additional driver name
                                        split into driver first, driver last
                                prompt for drivingRecord
                                prompt for additional driver
                        end

                print a copy of the contract
                        "Contract Number:  " + ContractID
                        "Customer Name:  "+ firstName +" " + lastName
                        "Start Date: " + startDay+ "//" + startMonth + "//" + startYear
                        "Return Date: " + endDay+ "//" + endMonth + "//" + endYear
                        "Vehicle to be rented: " + vehicle.vin + " " + vehicle.make + " " + vehicle.model
                        "Optional Insurance: " + optional insurance
                        "Price: " + price
                        "Sign here: ____________________"
                end print out

                prompt for input additional contract?
        end
end
```