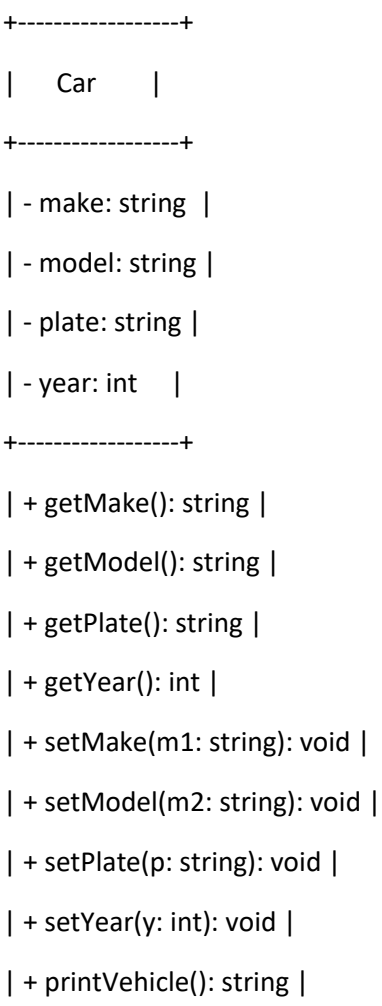
Design Document and Test Plan

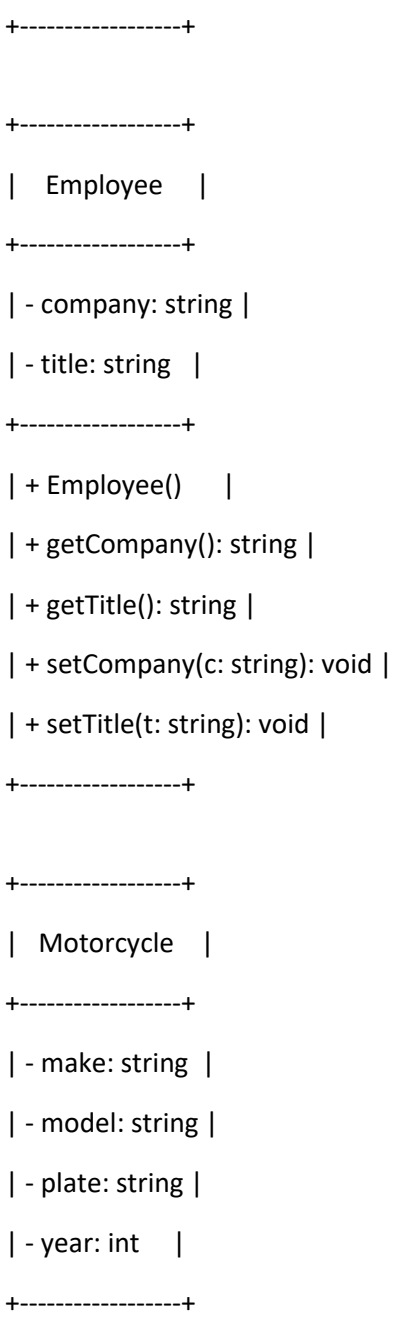
Name of team members who collaborated on the design and test plan:

1. Name (*first last*): William Cooper
2. Name (*first last*): _____
3. Name (*first last*): _____

Name of programming for which you submit this document: **Parking Permits**

UML Class Diagrams




Employee
- company: string
- title: string
+ Employee()
+ getCompany(): string
+ getTitle(): string
+ setCompany(c: string): void
+ setTitle(t: string): void
Motorcycle
- make: string
- model: string
- plate: string
- year: int
+ Motorcycle()
+ getMake(): string
+ getModel(): string
+ getPlate(): string
+ getYear(): int
+ setMake(m1: string): void

| + setModel(m2: string): void |

| + setPlate(p: string): void |

| + setYear(y: int): void |

| + printVehicle(): string |

+------------------+

+------------------+

| Motorscooter |

+------------------+

| - make: string |

| - model: string |

| - plate: string |

| - year: int |

+------------------+

| + Motorscooter() |

| + getMake(): string |

| + getModel(): string |

| + getPlate(): string |

| + getYear(): int |

| + setMake(m1: string): void |

| + setModel(m2: string): void |

| + setPlate(p: string): void |

| + setYear(y: int): void |

| + printVehicle(): string |

+------------------+

+------------------+

| Passtype |

+------------------+

| - passtype: string |

+------------------+

| + Passtype() |

| + getpassType(): string |

| + setpassType(p: string): void |

+------------------+

+------------------+

| Student |

+------------------+

| - major: string |

| - year: string |

+------------------+

| + Student() |

| + getMajor(): string |

| + getYear(): string |

| + setMajor(m: string): void |

| + setYear(y: string): void |

+------------------+

+------------------+

| Vendor |

+------------------+

| - company: string |

| - title: string |

+------------------+

| + Vendor() |

| + getCompany(): string |

| + getTitle(): string |

| + setCompany(c: string): void |

| + setTitle(t: string): void |

+------------------+

+------------------+

| Visitor |

+------------------+

| - company: string |

| - title: string |

+------------------+

| + Visitor() |

| + getCompany(): string |

| + getTitle(): string |

| + setCompany(c: string): void |

| + setTitle(t: string): void |

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Pseudocode

(See Ch. 1.6 in our textbook for an example of how to write detailed pseudocode)

Initialize constants:

- annual_cost = 184

- semester_cost = 92

- one_day = 10

- parknride = 50

Initialize strings for user input:

- type_of_customer

- type_of_vehicle

- student_year

- student_major
- emp_title
- emp_company
- user_vehicle
- make
- model
- plate
- pass

Initialize numeric variables:

- year
- total_price = 100

Initialize objects for different customer types:

- Employee e
- Vendor ve
- Student s
- Visitor vs
- Motorcycle m
- Motorscooter ms
- Car c
- Passtype p

Output "Welcome to Clemson Parking"

Output "Please Fill Out This Form to Get Your Ticket"

Input "Are you a student, employee, visitor, or vendor?": type_of_customer

If type_of_customer is "student":

```
    Set passType in p to "student"
    Input "What year are you?": student_year
    Set year in s to student_year
    Input "What is your major?": student_major
    Set major in s to student_major
Else if type_of_customer is "employee":
    Set passType in p to "employee"
    Input "What company do you work for?": emp_company
    Set company in e to emp_company
    Input "What is your title?": emp_title
    Set title in e to emp_title
    Subtract 50 from total_price
Else if type_of_customer is "visitor":
    Set passType in p to "visitor"
    Input "Where are you from?": emp_title
    Set title in vs to emp_title
    Input "Are you a US citizen?": emp_company
    Set company in vs to emp_company
Else if type_of_customer is "vendor":
    Set passType in p to "vendor"
    Input "What company do you work for?": emp_company
    Set company in ve to emp_company
    Input "What is your title?": emp_title
    Set title in ve to emp_title

Input "What type of vehicle do you drive? (car, motorcycle, motorscooter)": user_vehicle

If user_vehicle is "car":
    Input "What is your make?": make
```

```
    Set make in c to make
    Input "What is your model?": model
    Set model in c to model
    Input "What is your year?": year
    Set year in c to year
    Input "What is your plate #": plate
    Set plate in c to plate
Else if user_vehicle is "motorcycle":
    Input "What is your make?": make
    Set make in m to make
    Input "What is your model?": model
    Set model in m to model
    Input "What is your year?": year
    Set year in m to year
    Input "What is your plate #": plate
    Set plate in m to plate
Else if user_vehicle is "motorscooter":
    Input "What is your make?": make
    Set make in ms to make
    Input "What is your model?": model
    Set model in ms to model
    Input "What is your year?": year
    Set year in ms to year
    Input "What is your plate #": plate
    Set plate in ms to plate

Input "What type of pass would you like? (Annual, Semester, Park&Ride, One Day)": pass

If pass is "Annual":
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```
    Set passType in p to "Annual"
    Add annual_cost to total_price
Else if pass is "Semester":
    Set passType in p to "Semester"
    Add semester_cost to total_price
Else if pass is "Park&Ride":
    Set passType in p to "Park&Ride"
    Add parknride to total_price
Else if pass is "One Day":
    Set passType in p to "One Day"
    Add one_day to total_price

Create an Invoice object i
Call i.calculatePrice(total_price)
Call i.printInvoice()

Return 0
```

Test Plan

(See Ch. 5.13 in our textbook for an example of how to write a test plan)

Test #	Purpose	Input	Expected Output
1			
2			
3			
4			
5			
…	*(Feel free to add more test cases)*		