INSTITUTE OF TECHNOLOGY

Computer Science 121 – Fall 2019

Project 2: Basic Java Programming **Deadline:** Friday, October 4, (midnight) in e-campus.

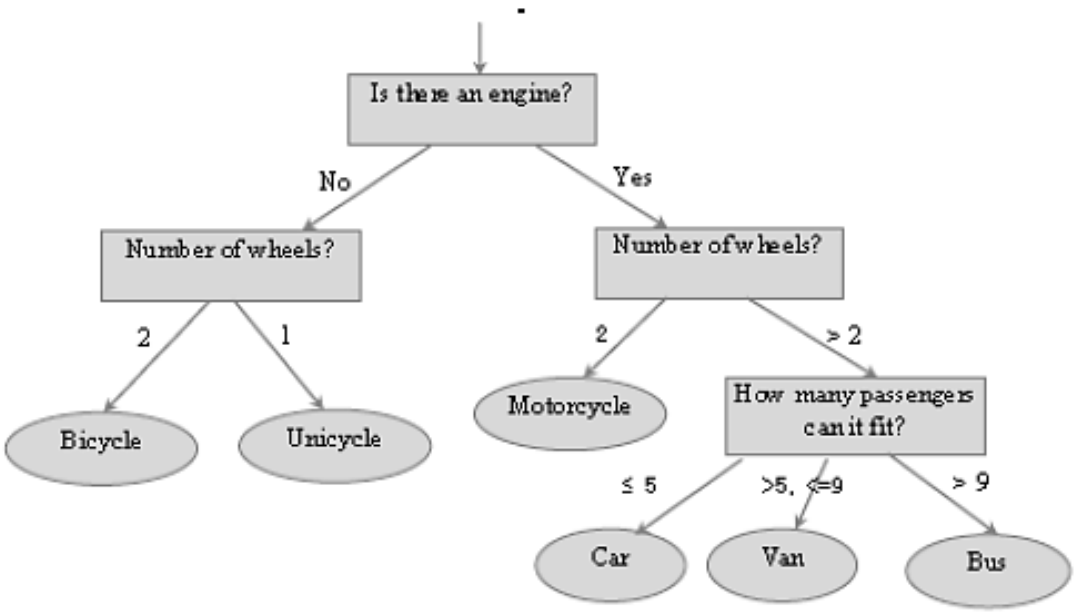
Objectives: This assignment will enhance your understanding of "if" and "else-if statements

Description: The program will take input from the user to classify a vehicle as one of the following: bicycle, unicycle, motorcycle, car or a bus. Your program will take appropriate inputs for each question (Y/N or an integer) and classify the vehicle accordingly. You may assume all input will be valid. (There will be no character input other than Y or N but user may input either Y,N or y, n.)

The program should start by asking the user if there is an engine in the vehicle. If there is none, then the program should ask how many wheels the vehicle has. If there are two wheels, then it should classify it as a bicycle, if one then as a unicycle. In case the engine is indeed present in the vehicle, the program must first ask how many wheels it has. If there are 2 wheels, then the vehicle should be classified as a motorcycle. If there are more than 2 wheels present, the program should ask how many passengers can fit inside. If the answer is less or equal to 5 people, then the vehicle is a car, however if more than 9 people can fit in, then it is a bus. The vehicle is a van if it can seat between 6 and 9 (inclusively) people.

The program should recognize both lower and uppercase "yes" and "no" input answers, i.e. Y/y and N/n as input.

Here is the process flow-chart of the program:



- **Input:** Yes (Y/y) or No (N/n) characters and numbers, answering the relevant classification questions.
- **Output:** Examples for some cases:

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```
> run vehicleClassify
Does the vehicle have an engine?
n
How many wheels does the vehicle have?
2
This vehicle is a Bicycle
```

```
> run vehicleClassify
Does the vehicle have an engine?
Y
How many wheels does the vehicle have?
2
This vehicle is a Motorcycle
```

```
> run vehicleClassify
Does the vehicle have an engine?
Y
How many wheels does the vehicle have?
8
How many passangers can it fit?
40
This vehicle is a Bus
```

Hint:

You can define a character variable to get user input of Y/y or N/y.

To get the character input using a Scanner, you can use

Scanner input = new Scanner(System.in);

char userInput = input.next().charAt(0); //here variable userInput is your character variable to store user input, which is a single character in this case.

Submission: Name the file YourLastNameVehicleClassify.java. Through your e-campus account upload .java file only.

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Grading Rubric:

Tentative Grading rubric
This is a general grading guideline. Instructors reserve rights to make modifications as necessary.

	SN	Grading criteria / Scores represent the max they can get in each category	Correct/ Applied /Present	Mostly correct, few incorrect	Mostly incorrect, few correct	Incorrect /Not applied /Not present
Q1	1	Comments (Program, method, statement levels)	10	8	5	0
	2	Java syntax is correct (class names starting with capital letter, variable names starting with small letter/making sense etc)	10	8	5	0
	3	Get correct input including character	10	8	5	0
	4	Proper prompts to user	10	8	5	0
	5	Use of proper data types	10	8	5	0
	6	Test both capital and small input characters	5	4	2	0
		Test all vehicles correctly (3 points each)	18	15	7	
		Proper selection conditions	10	8	5	0
	7	Proper display of results	7	5	3	
	8	Proper execution as asked in question	10	8	5	0
		Total	100			
		Q1 Total	100			

Total Points

Any program that does not compile will be automatically given 0 points and not graded. So make sure before submitting that your program compiles without any error.

Total 100