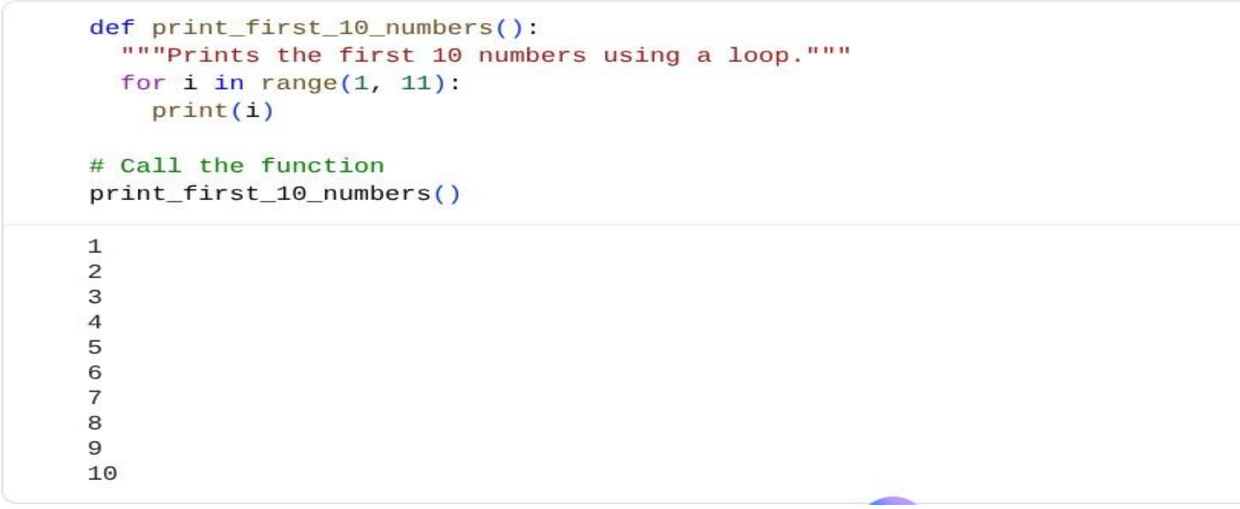
LAB ASSIGNMENT-19

Task-1:

Code and Output: Python

program:

Write a Python function print_numbers() that prints the first 10 natural numbers using a loop.

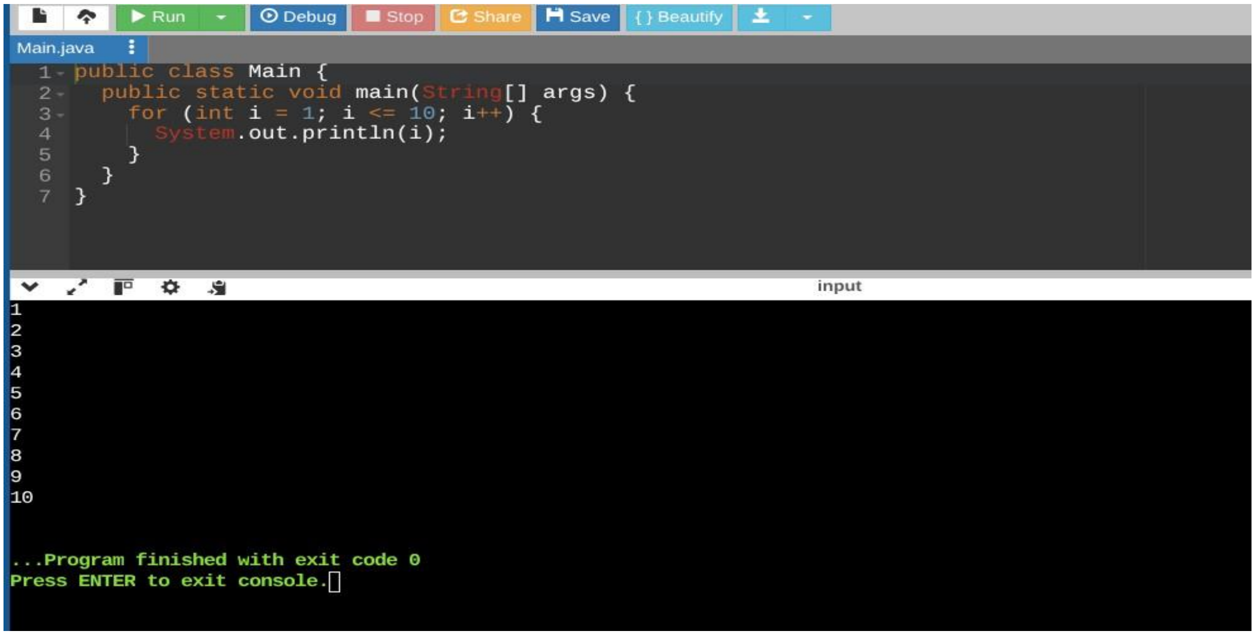


```
def print_first_10_numbers():
  """Prints the first 10 numbers using a loop."""
  for i in range(1, 11):
    print(i)

# Call the function
print_first_10_numbers()
```

```
1
2
3
4
5
6
7
8
9
10
```

Java program:

write a program in Java to print from 1 to 10 having class name mai



```
public class Main {
  public static void main(String[] args) {
    for (int i = 1; i <= 10; i++) {
      System.out.println(i);
    }
  }
}
```

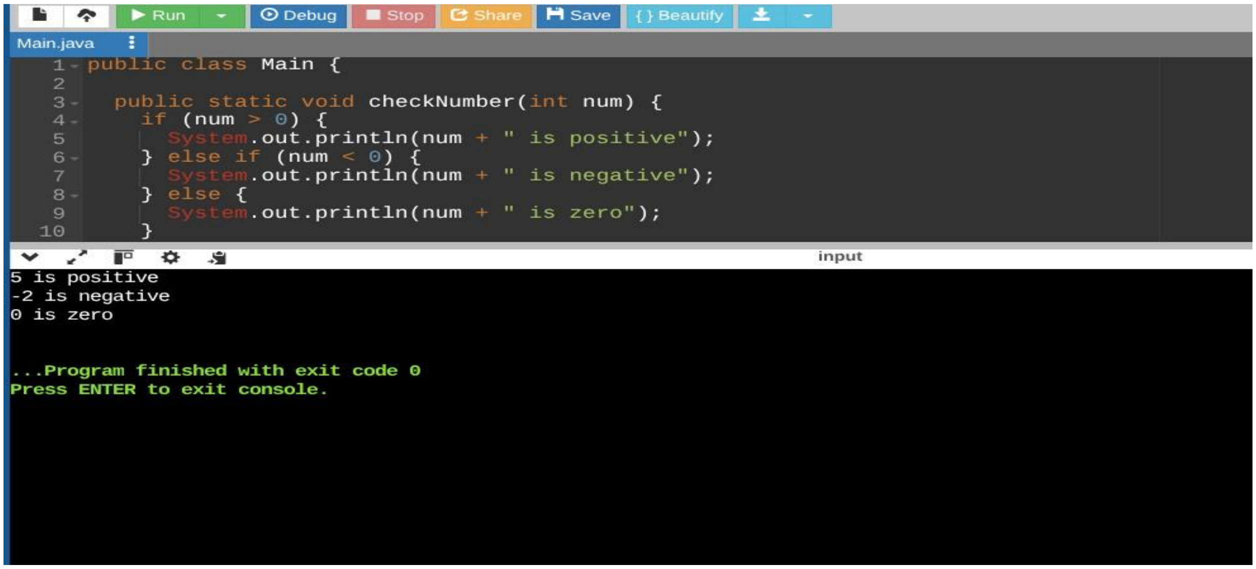
```
1
2
3
4
5
6
7
8
9
10


...Program finished with exit code 0
Press ENTER to exit console.
```

Task-2:

Code and Output:

Java program:

Write a Java method checkNumber(int num) that checks if a number is positive, negative, or zero.

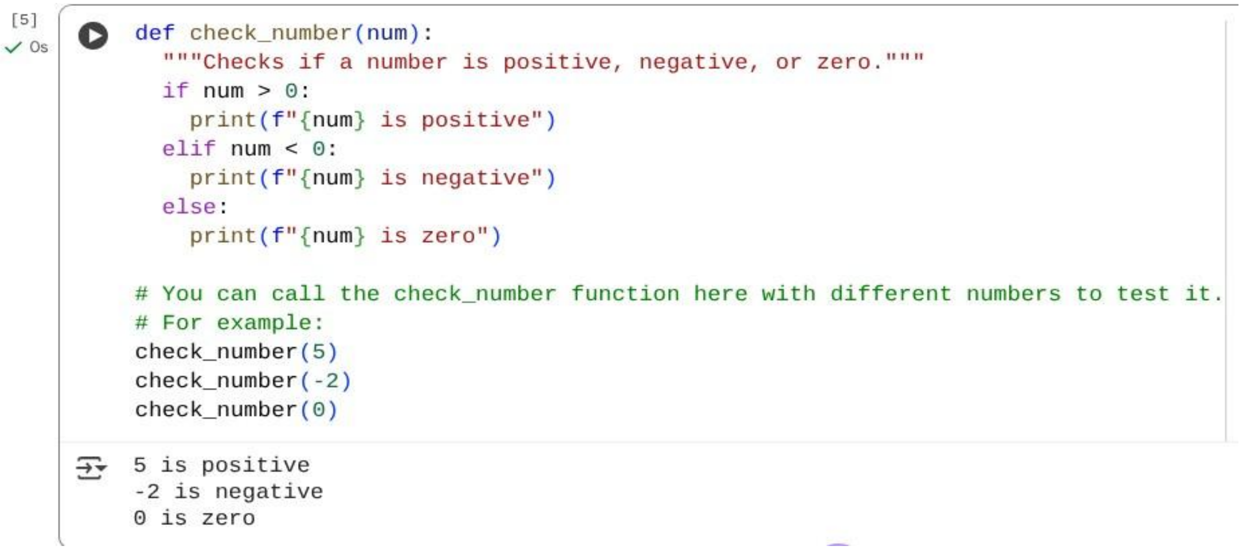


```java
public class Main {

  public static void checkNumber(int num) {
    if (num > 0) {
      System.out.println(num + " is positive");
    } else if (num < 0) {
      System.out.println(num + " is negative");
    } else {
      System.out.println(num + " is zero");
    }
```

```
5 is positive
-2 is negative
0 is zero


...Program finished with exit code 0
Press ENTER to exit console.
```

Python program:

write a program in python that checks a number is positive,negative or zero



```
def check_number(num):
  """Checks if a number is positive, negative, or zero."""
  if num > 0:
    print(f"{num} is positive")
  elif num < 0:
    print(f"{num} is negative")
  else:
    print(f"{num} is zero")

# You can call the check_number function here with different numbers to test it.
# For example:
check_number(5)
check_number(-2)
check_number(0)
```

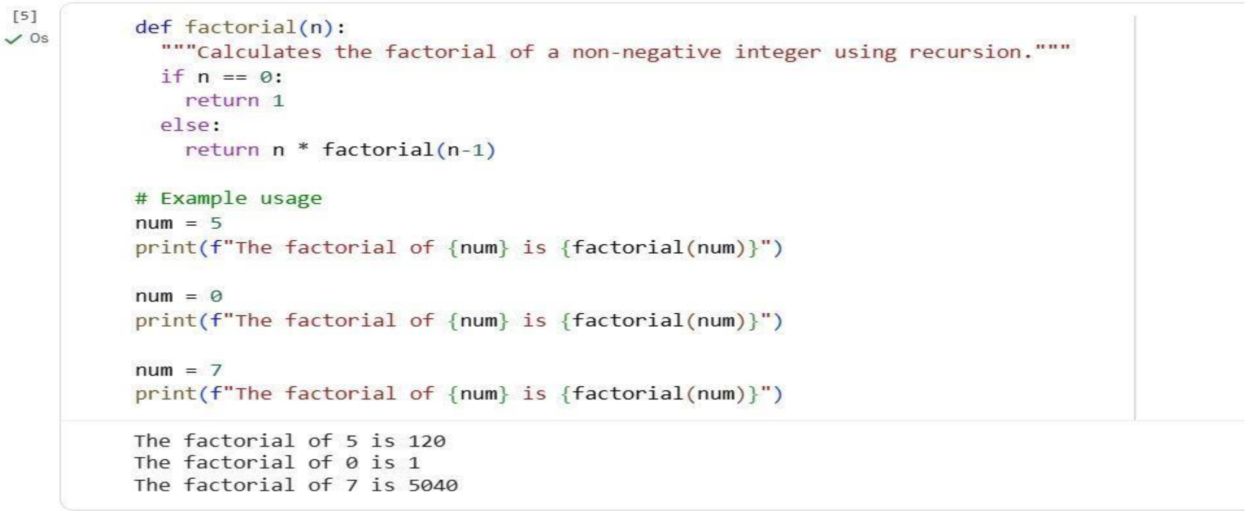
```
5 is positive
-2 is negative
0 is zero
```

Task-3:

Code and Output:

Python program:

Write a Python function factorial(n) that calculates factorial of a number using recursion.

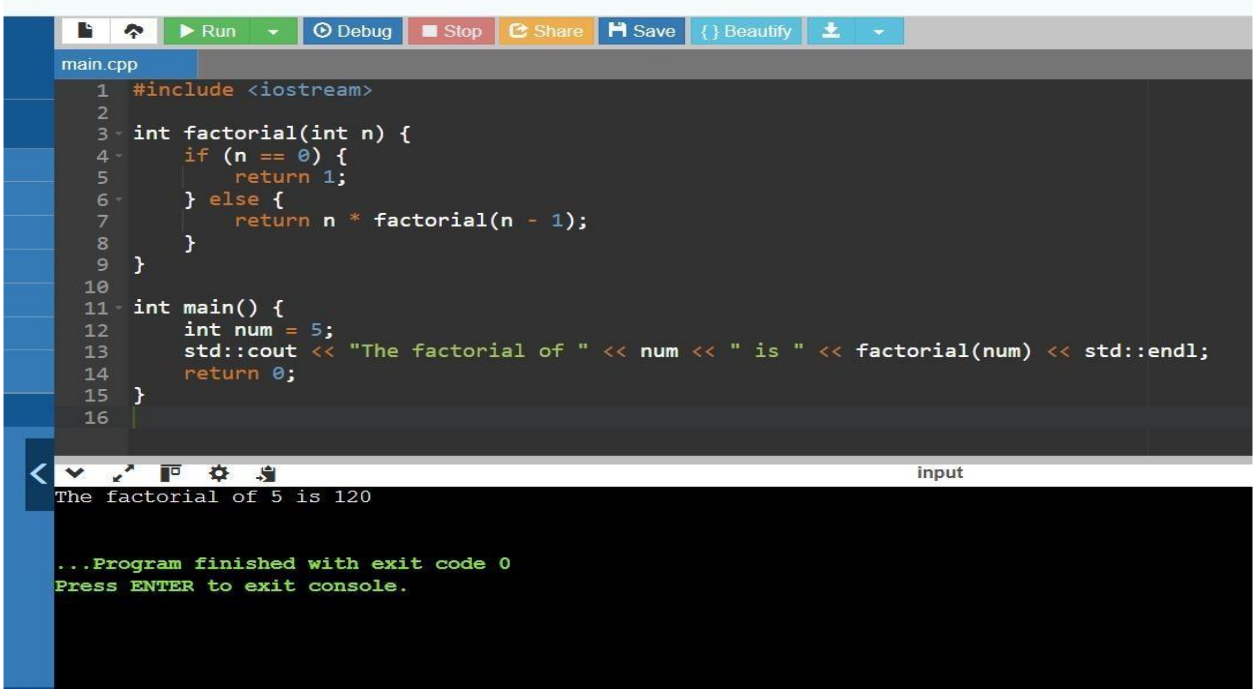


```
def factorial(n):
  """Calculates the factorial of a non-negative integer using recursion."""
  if n == 0:
    return 1
  else:
    return n * factorial(n-1)

# Example usage
num = 5
print(f"The factorial of {num} is {factorial(num)}")

num = 0
print(f"The factorial of {num} is {factorial(num)}")

num = 7
print(f"The factorial of {num} is {factorial(num)}")
```

```
The factorial of 5 is 120
The factorial of 0 is 1
The factorial of 7 is 5040
```

C++ program:

write a program in c++ function int factorial(int n)



```cpp
#include <iostream>

int factorial(int n) {
    if (n == 0) {
        return 1;
    } else {
        return n * factorial(n - 1);
    }
}

int main() {
    int num = 5;
    std::cout << "The factorial of " << num << " is " << factorial(num) << std::endl;
    return 0;
}
```

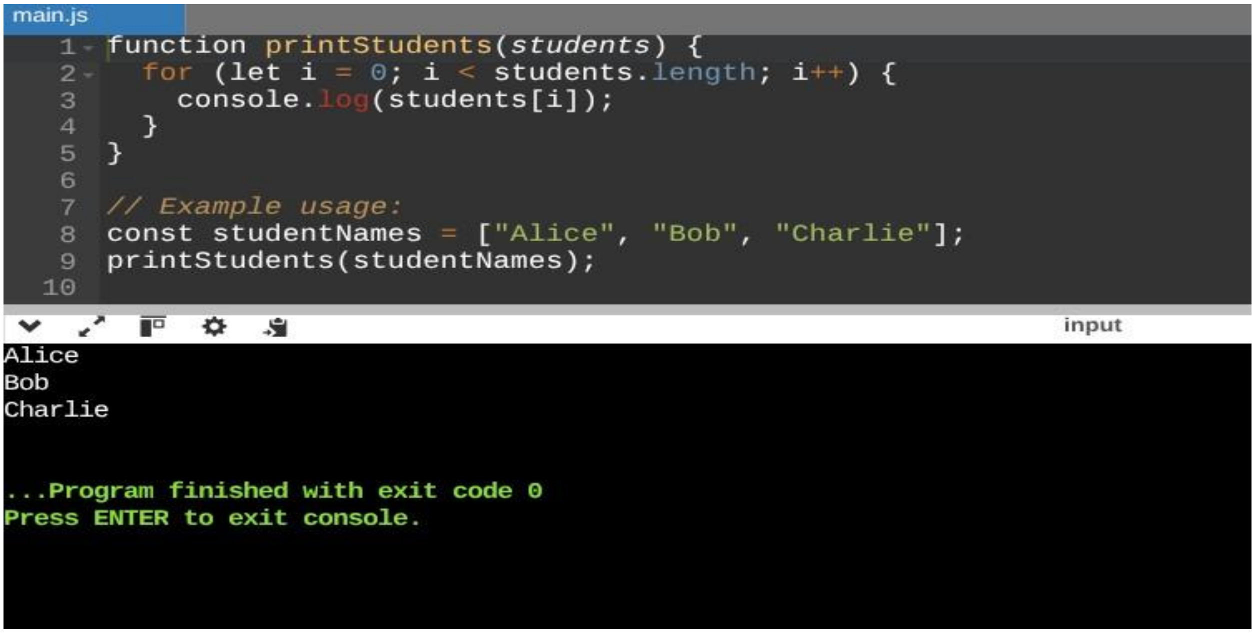
```
The factorial of 5 is 120


...Program finished with exit code 0
Press ENTER to exit console.
```

Task-4:

Code and Output:

Javascript program:

Write a JavaScript function printStudents(students) that takes an array of student names and prints each name.

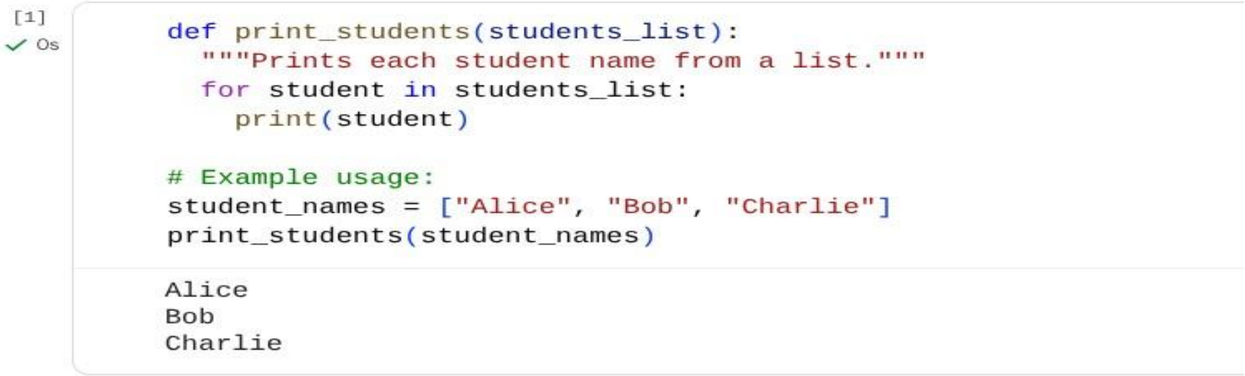


```javascript
function printStudents(students) {
  for (let i = 0; i < students.length; i++) {
    console.log(students[i]);
  }
}

// Example usage:
const studentNames = ["Alice", "Bob", "Charlie"];
printStudents(studentNames);

```

```
Alice
Bob
Charlie


...Program finished with exit code 0
Press ENTER to exit console.
```

Python program:

write a python function print_students(students) using a list.



```python
def print_students(students_list):
  """Prints each student name from a list."""
  for student in students_list:
    print(student)

# Example usage:
student_names = ["Alice", "Bob", "Charlie"]
print_students(student_names)
```

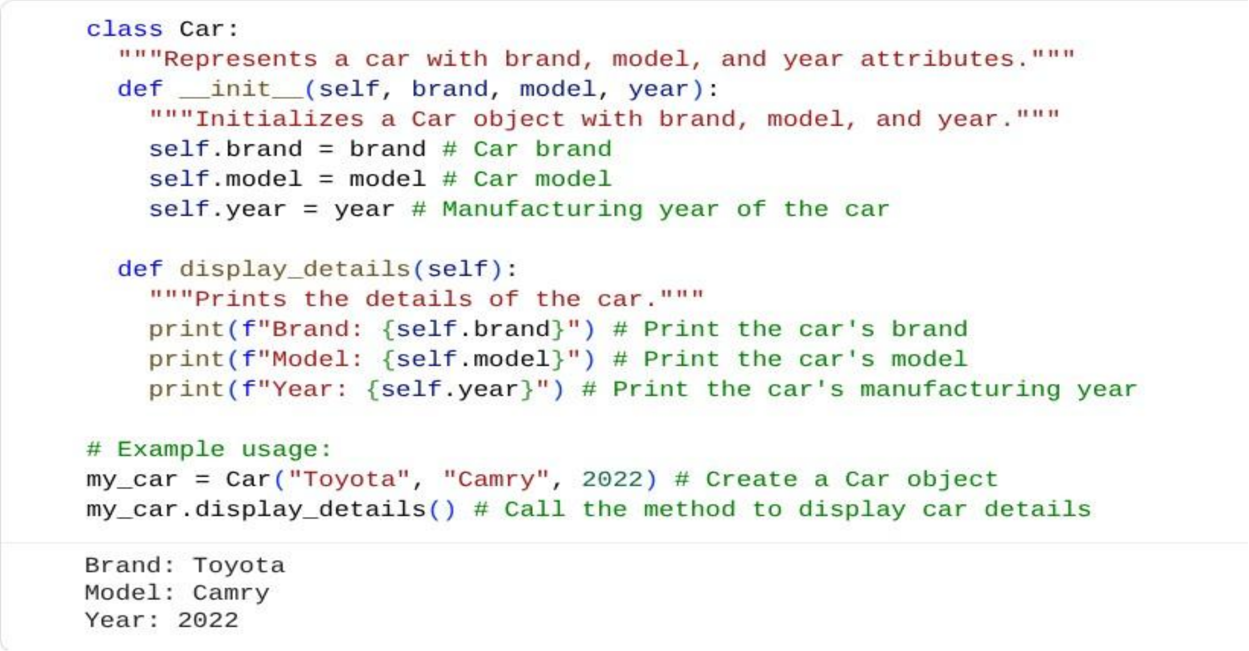
```
Alice
Bob
Charlie
```

Task-5:

Code and Output:

Python program:

Write a Python class Car with attributes: brand, model, year. Add a method display_details() that prints car details.

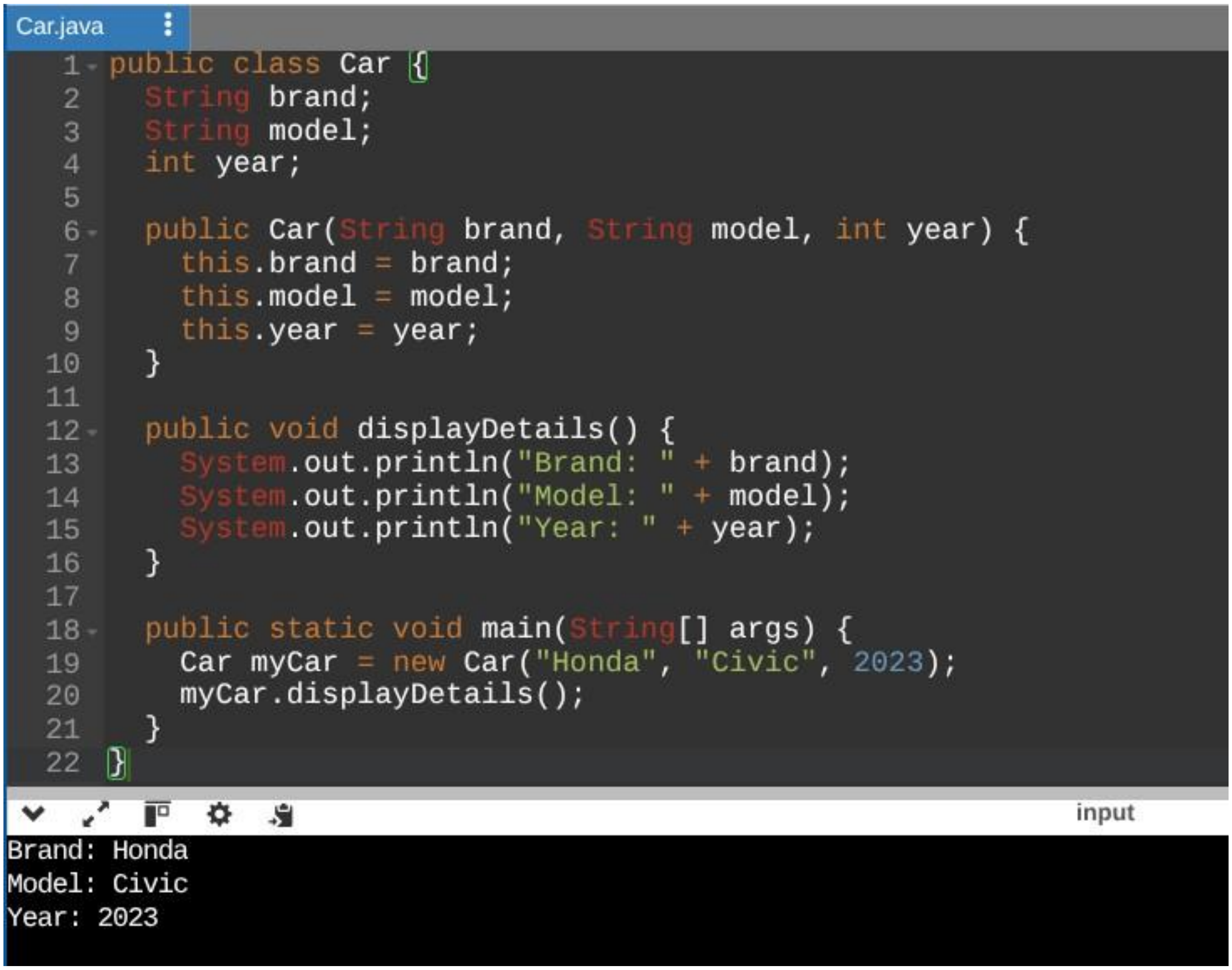


```python
class Car:
  """Represents a car with brand, model, and year attributes."""
  def __init__(self, brand, model, year):
    """Initializes a Car object with brand, model, and year."""
    self.brand = brand # Car brand
    self.model = model # Car model
    self.year = year # Manufacturing year of the car

  def display_details(self):
    """Prints the details of the car."""
    print(f"Brand: {self.brand}") # Print the car's brand
    print(f"Model: {self.model}") # Print the car's model
    print(f"Year: {self.year}") # Print the car's manufacturing year

# Example usage:
my_car = Car("Toyota", "Camry", 2022) # Create a Car object
my_car.display_details() # Call the method to display car details
```

```
Brand: Toyota
Model: Camry
Year: 2022
```

Java program:

write a Java program with class car with attributes and a method displayDetails()



```java
public class Car {
  String brand;
  String model;
  int year;

  public Car(String brand, String model, int year) {
    this.brand = brand;
    this.model = model;
    this.year = year;
  }

  public void displayDetails() {
    System.out.println("Brand: " + brand);
    System.out.println("Model: " + model);
    System.out.println("Year: " + year);
  }

  public static void main(String[] args) {
    Car myCar = new Car("Honda", "Civic", 2023);
    myCar.displayDetails();
  }
}
```

```
Brand: Honda
Model: Civic
Year: 2023
```