**LAB MANUAL**



**ROLLNO:AV.SC.U4CSE24244**

**NAME: P. Pranav**

**SECTION: CSE-C**

**WEEK-1:**

**Aim:** How to install jdk and first program on

printing student details*.*

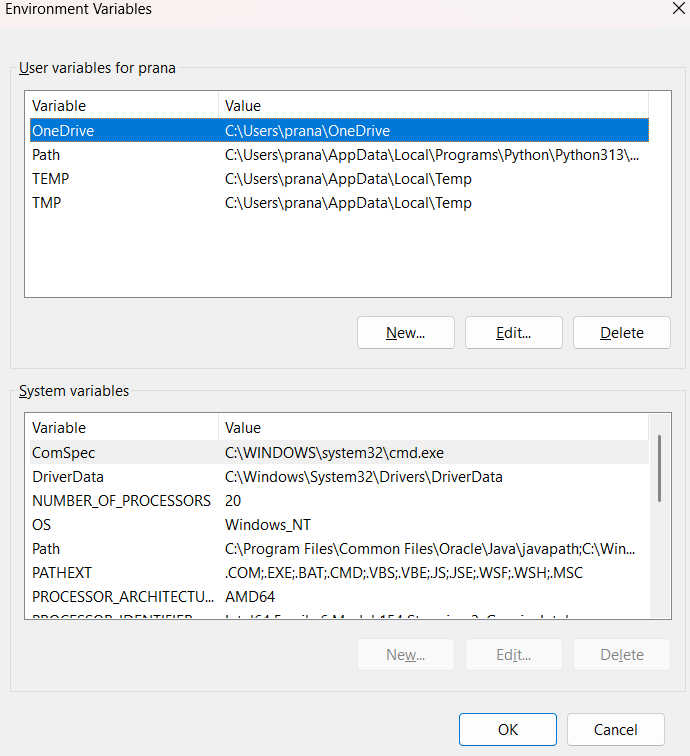
**Step-1:** Download JDK-21 from oracle website

**

**Step-2:**Install the JDK-21 with accepting terms and

conditions according to the respective windows.

**Step-3**:Setting up environmental variables.



\*Windows c -> C-drive -> program files ->Java -

>JDK-21->select bin

\*Select and open environmental variable in search

bar-> either select system variables or user

variables-> select path-> click edit->New-> paste

the bin-> finish the setup(apply the changes).

~for verifying the installed version

Open cmd-> type java --version

~command propt

Javac filename.java ->compiling.

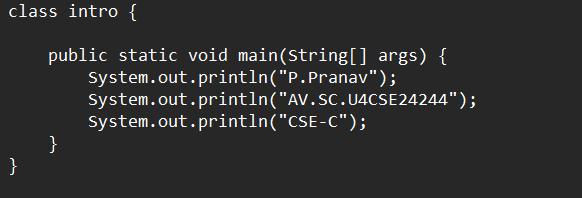
Java filename.java ->displaying

|  |  |  |
| --- | --- | --- |
| **Code \** | **Error** | **Rectification** |
| System.out.println  ("Class: CSE-C") | Semi colon(;) is  missing at the  end. | Add a semi colon(;) at the  end.  System.out.println("Class:  CSE-C"); |

**PROGRAM-1:**

**Aim:** Write a program in java for displaying

student details.



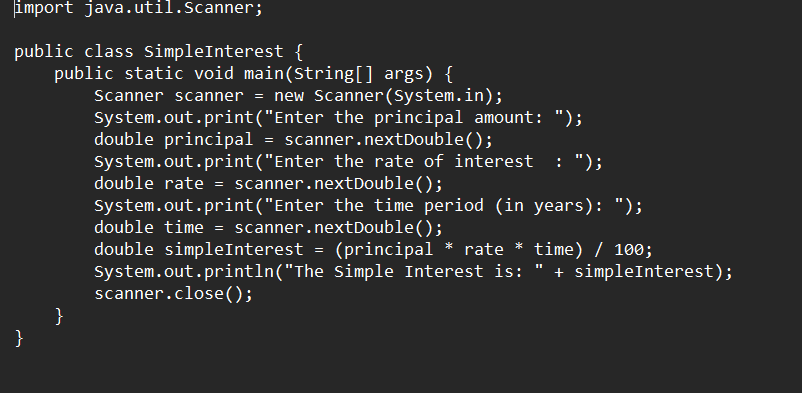
**Output:**

******

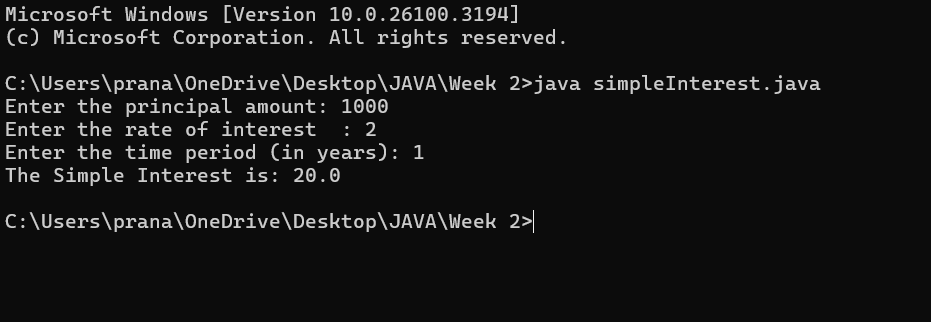
**WEEK-2:**

**PROGRAM-1:**

**Aim:** Write a java program for SI

**

**Output:**

******

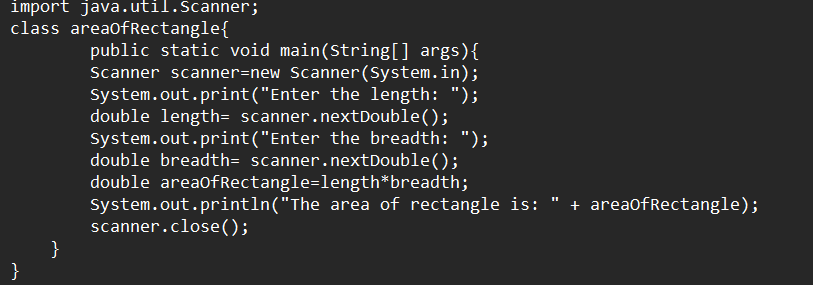
**ERROR TABLE*:***

|  |  |
| --- | --- |
| **Code Error** | **Code rectification** |
| 1.Giving space between next and Double.  2.Not using the closing semi colon. | 1.Should not give space between next and Double.  2.We must put semi colon after each line when required. |

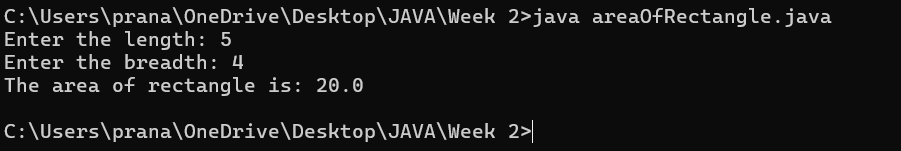
**PROGRAM-2:**

**Aim:** Write a program in java for area of

rectangle.

**

**Output:**

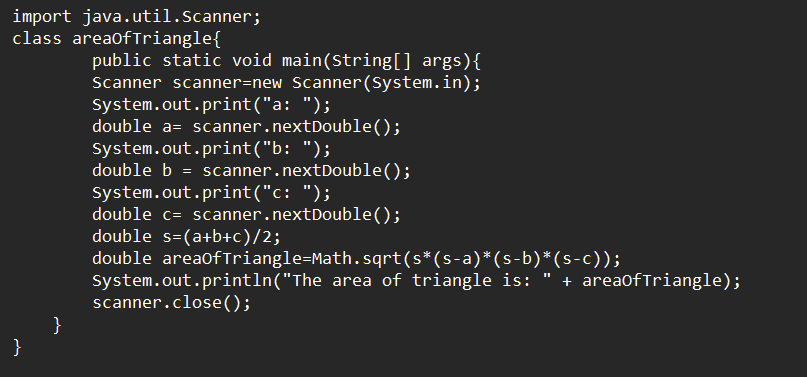
******

**ERROR TABLE:**

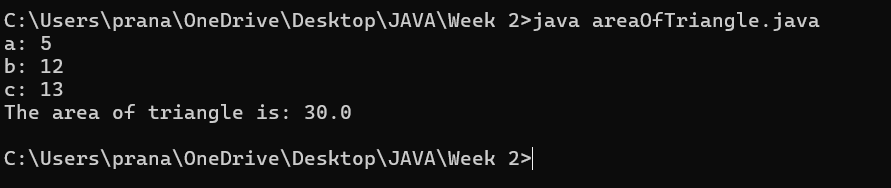
|  |  |
| --- | --- |
| **Code Error** | **Code rectification** |
| 1.While using for iteration, not giving the conditions correctly.  2.Declaring the data type. | 1.We should give iterative statements correctly.  2.We should give the data type. |

**PROGRAM-3:**

**Aim:** Write a program in java for area of triangle using heron’s formula.



**Output:**

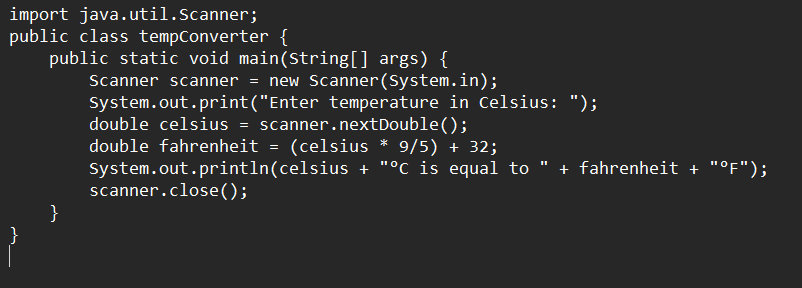
******

ERROR TABLE:

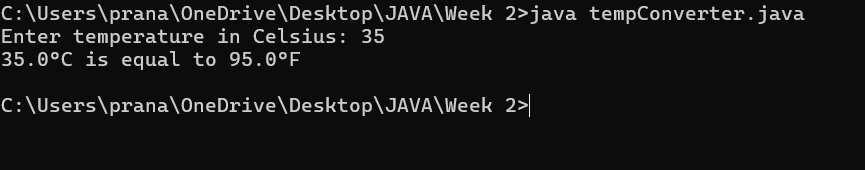
|  |  |
| --- | --- |
| **Code Error** | Code rectification |
| 1.While printing the variable not giving + sign.  2.Declaring the data type. | 1.We should give correct indentation.  2.We should give the data type. |

**PROGRAM-4(a):**

**Aim:** Write a program in java for converting temperature from Celsius to Fahrenheit.

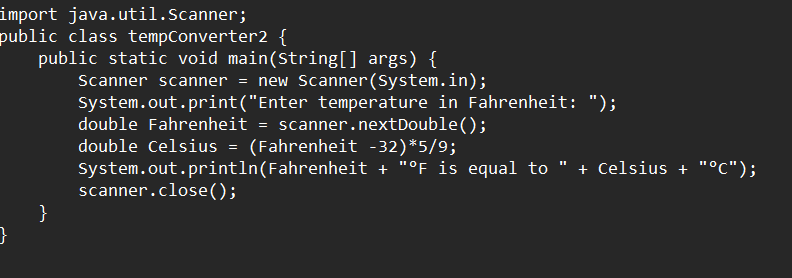


OUTPUT:

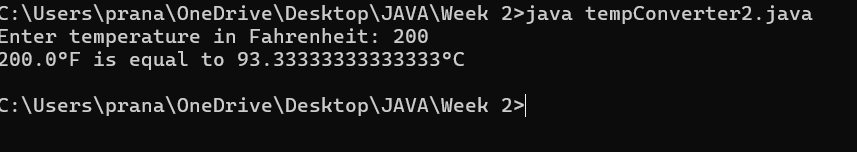


**PROGRAM-4(b):**

**Aim:** Write a program in java for converting temperature from Fahrenheit to Celsius.

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**Output:**

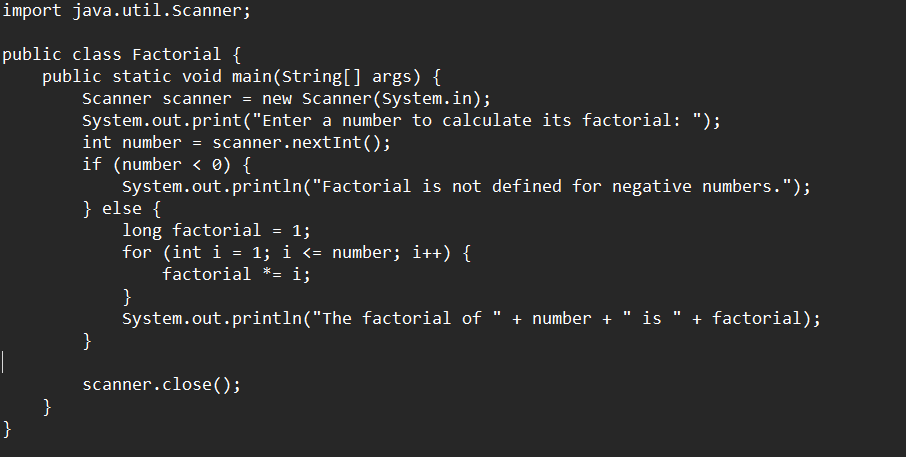
******

**ERROR TABLE:**

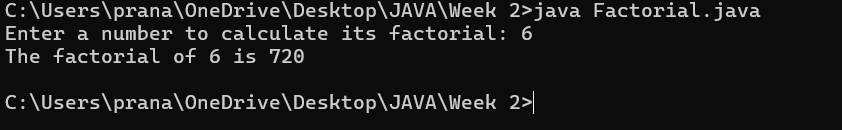
|  |  |
| --- | --- |
| **Code Error** | **Code rectification** |
| 1.While printing the variable not giving + sign.  2.Not closing the scanner. | 1.We should give correct indentation.  2.Closing the scanner is must. |

**PROGRAM-5:**

**Aim:** Write a program in java for factorial of a number.

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OUTPUT:

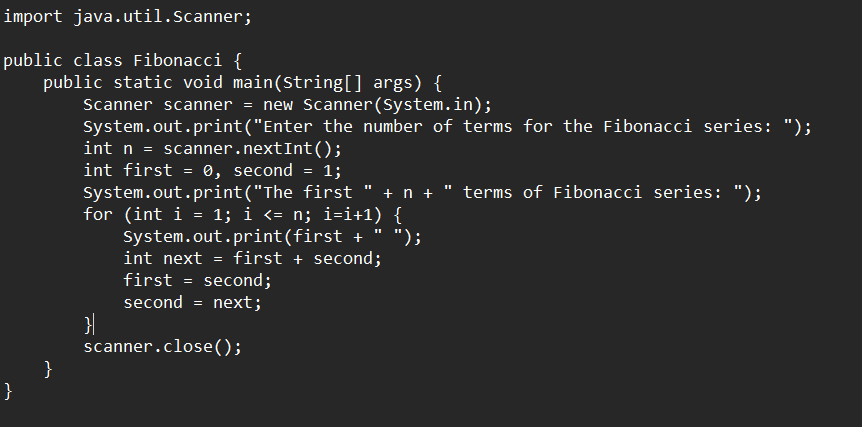


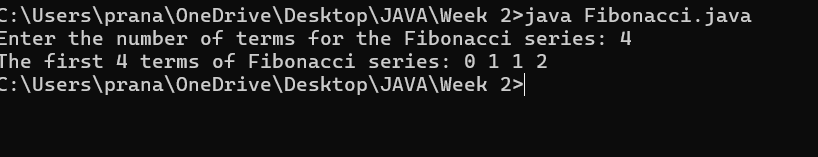
ERROR TABLE:

|  |  |
| --- | --- |
| **Code Error** | **Code rectification** |
| 1.While using for iteration, not giving the conditions correctly. | 1.We should give iterative statements correctly. |

**PROGRAM-6:**

**Aim:** Write a program in java for Fibonacci series.



OUTPUT: 

ERROR TABLE:

|  |  |
| --- | --- |
| **Code Error** | **Code rectification** |
| 1.Giving space between next and Double.  2.Not putting flower brackets in the end. | 1.Should not give space between next and Double.  2.We must put giving flower brackets in the end. |

**WEEK -3:**

**PROGRAM-1:**

**AIM:** To create java program with following instructions:

1.Create a class with name Car.

2.Create four attributes named car color, car brand, fuel type, mileage

3.Create these methods named start (), stop (), service ()

4.Create the objects named car, car1, car2

**CODE:**

public class Car {

private String car\_color;

private String car\_brand;

private String fuel\_type;

private String mileage;

public void start() {

System.out.println("car is started");

}

public void stop() {

System.out.println("car is stopped");

}

public void service() {

System.out.println("car is for service");

}

public static void main(String args[]) {

Car car = new Car();

car.car\_color = "white";

car.car\_brand = "audi";

car.fuel\_type = "petrol";

car.mileage = "20";

car.start();

System.out.println("car\_color: " + car.car\_color + " car\_brand: " + car.car\_brand + " fuel\_type: " + car.fuel\_type + " mileage: " + car.mileage);

Car car1 = new Car();

. car1.car\_color = "white";

car1.car\_brand = "audi";

car1.fuel\_type = "petrol";

car1.mileage = "20";

car1.stop();

System.out.println("car\_color: " + car1.car\_color + " car\_brand: " + car1.car\_brand + " fuel\_type: " + car1.fuel\_type + " mileage: " + car1.mileage);

Car car2 = new Car();

car2.car\_color = "white";

car2.car\_brand = "audi";

car2.fuel\_type = "petrol";

car2.mileage = "20";

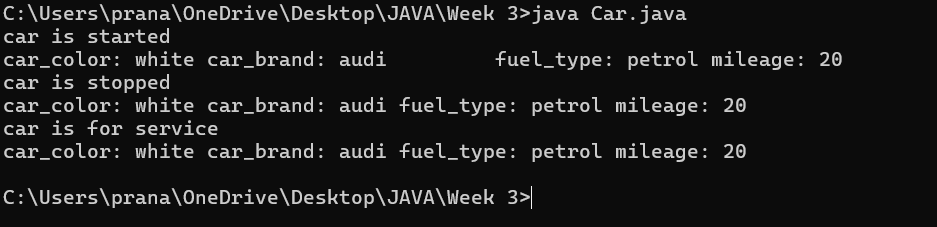
car2.service();

System.out.println("car\_color: " + car2.car\_color + " car\_brand: " + car2.car\_brand + " fuel\_type: " + car2.fuel\_type + " mileage: " + car2.mileage);

}

}

**OUTPUT:**

****

**Error table:**

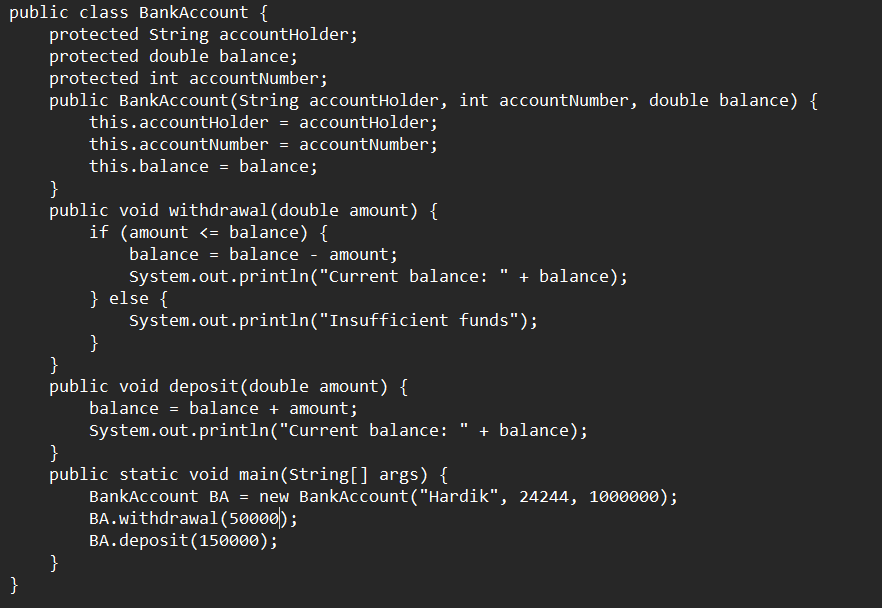
|  |  |  |
| --- | --- | --- |
| S.no | error | Rectification |
| 1 | Missing ‘;‘ | ‘;‘ added |
| 2 | Mispelled Variable call | Rectified with  Correct variable name |
| 3 | Uppercase and lowercase | rectified |

**Class diagram:**

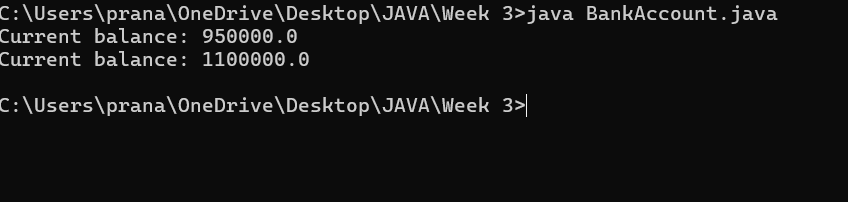
|  |
| --- |
| **car**  **----------------------**-  -car\_color:string  -car\_brand:string  -fuel\_type:string  -milage:double  ----------------------  +start():void  +stop():void  +service():void |

**PROGRAM-2:**

**Aim:** To create a class BankAccount with methods deposit() and withdraw() . create two subclasses savingsaccount and checkingaccount override the withdraw () method in each subclass to impose different withdrawal limits and fees

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**OUTPUT:**

****

**Error table:**

|  |  |  |  |
| --- | --- | --- | --- |
| S.no | Error name | Error name | Rectification |
| 1 | Name Error | Undefined name | Correct variable  Name replaced |
| 2 | Syntax Error | Missing Parenthesis | Parenthesis Added |
| 3 | Logical Error | Incorrect Condition | Condition Rectified |

**Class diagram:**

|  |
| --- |
| **BankAccount**  ----------------------------------------------------------  -balance: double  ----------------------------------------------------------  +BankAccount(intialBalance: double)  +deposit(amount: double):void  +withdraw(amount: double):void |

**WEEK-4:**

**PROGRAM-1:**

**Aim:** Write a java program with class named book .The class should contain various attributes such as Title ,Author and Year of Publication .It should also contain a constructor with parameter which initializes Title ,Author and Year of publication .Create a method which displays the details of the book .Display the details of two books.

**CODE:**

class book{

public String title;

public String author;

public String year\_of\_publication;

public void book(){

this.title=title;

this.author=author;

this.year\_of\_publication=year\_of\_publication;

}

public static void main(String[] args){

book book1=new book();

book book2=new book();

book1.book();

book1.title="Sherlock Holmes ";

book1.author="Arthur Conan Doyle";

book1.year\_of\_publication="1887";

book2.book();

book2.title="Harry Potter";

book2.author="J.K. Rowling";

book2.year\_of\_publication="1997";

System.out.println("Book-1");

System.out.println("Title :" +book1.title);

System.out.println("Author :" +book1.author);

System.out.println("Year of publication :" +book1.year\_of\_publication);

System.out.println("Book-2");

System.out.println("Title :" +book2.title);

System.out.println("Author :" +book2.author);

System.out.println("Year of publication :" +book2.year\_of\_publication);

}

}

**OUTPUT:**

****

**Class Diagram:**

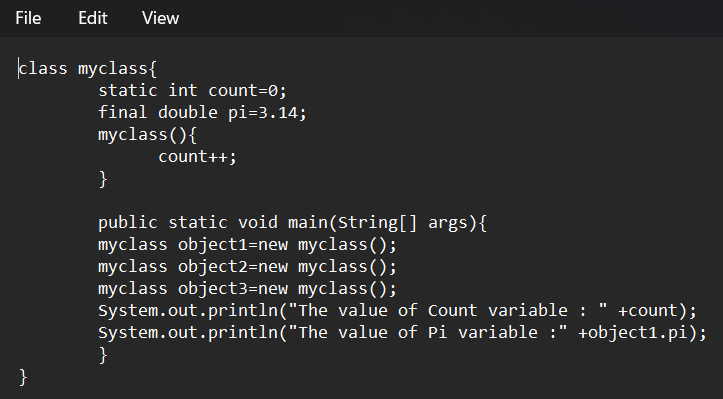
|  |
| --- |
| **Book** |
| * Title: String * Author: String * Year of publication: int |
| + Book(title: String,  Author: String;  Year of publication: int  + displayDetails( ): void |

**Error Table:**

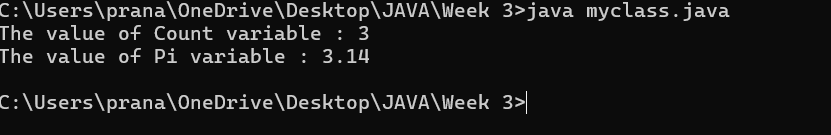
|  |  |  |
| --- | --- | --- |
| **S.No** | **Error** | **Rectification** |
| **1.** | **Missing “;” after calling method.** | **Added “;”** |

**PROGRAM-2:**

**Aim:** Create a java program with class named myclass with a static variable count of int type initialized to 0 and a constant variable “Pi” of type double initialized to 3.14 has attributes of that class .Now define a constructor for “myclass” that incerements the count variable each time an object of myclass is created finally print final values count and Pi variables .Create three objects.



**OUTPUT:**

****

**Class Diagram:**

|  |
| --- |
| Myclass |
| - Count: int  - Pi: double |
| + myclass( )  + main(args: String[]): void |

Error Table:

|  |  |  |
| --- | --- | --- |
| S.No | Error | Rectification |
| 1. | Not typing “}“ at the end of the code. | Added “}”. |