Practical 10

Title: Write a PHP code that defines the class Student with attributes RollNo, Name, Branch, and Year, create 3 instances of it, set the values of each instance appropriately and print the values of all attributes.

Objective : Illustrate object oriented programming through PHP.

Theory :

Define a Class

A class is defined by using the class keyword, followed by the name of the class and a pair of curly braces ({}). All its properties and methods go inside the braces:
Ex:

```php
<?php
class
Fruit
{

// code goes here...

}
?>
```

Define Objects

Classes are nothing without objects! We can create multiple objectsfrom a class. Each object has all the properties and methods defined in the class, but they will have different property values.

Objects of a class is created using the new keyword.

In the example below, $apple and $banana are instances of the class Fruit:

```php
<?php
class
Fruit
{//
Properties
public
$name;
public
$color;
// Methods
```

```php
function set_name($name) {

 $this->name = $name;

 }

function
get_name() { return
$this->name;
 }

 }

 $apple = new Fruit();

 $banana = new Fruit();

 $apple->set_name('Apple');

 $banana->set_name('Bana
na');                     echo
$apple->get_name(); echo
"<br>";
echo $banana->get_name();

 ?>
```

The $this Keyword

The $this keyword refersto the current object, and is only available inside methods. Look at the following example:

```php
<?php
class
Fruit
 {

public $name;

 }

 $apple = new Fruit();

 ?>
```

Code:

```php
<?php

// Define the Student class
class Student
{
    // Attributes
    public $RollNo;
    public $Name;
    public $Branch;
    public $Year;

    // Constructor to initialize attributes
    public function __construct($RollNo, $Name, $Branch, $Year)
    {
        $this->RollNo = $RollNo;
        $this->Name = $Name;
        $this->Branch = $Branch;
        $this->Year = $Year;
    }

    // Function to display student details
    public function display()
    {
        echo "Roll No: " . $this->RollNo . "\n";
        echo "Name: " . $this->Name . "\n";
        echo "Branch: " . $this->Branch . "\n";
        echo "Year: " . $this->Year . "\n\n";
    }
}

// Function to get input from the user
function getStudentDetails($studentNumber)
{
    echo "Enter details for Student $studentNumber:\n";
    $RollNo = readline("Enter Roll No: ");
    $Name = readline("Enter Name: ");
    $Branch = readline("Enter Branch: ");
    $Year = readline("Enter Year: ");

    return new Student($RollNo, $Name, $Branch, $Year);
}

// Create an array to hold student objects
$students = [];

// Loop to create 3 instances of Student and populate their details
for ($i = 1; $i <= 3; $i++) {
    $students[] = getStudentDetails($i);
}
```

```php
// Display the details of each student
echo "\nStudent Details:\n";
foreach ($students as $student) {
    $student->display();
}

?>
```

Output:

```
$ php "c:\Users\DELL\Desktop\Clg programs\PHP\programs\p10.php"
Enter details for Student 1:
Enter Roll No: 2241002
Enter Name: Nayana
Enter Branch: Computer
Enter Year: Third year
Enter details for Student 2:
Enter Roll No: 2241003
Enter Name: Pratiksha
Enter Branch: Computer
Enter Year: Third Year
Enter details for Student 3:
Enter Roll No: 2241013
Enter Name: Shurti
Enter Branch: Computer
Enter Year: Third Year

Student Details:
Roll No: 2241002
Name: Nayana
Branch: Computer
Year: Third year

Roll No: 2241003
Name: Pratiksha
Branch: Computer
Year: Third Year

Roll No: 2241013
Name: Shurti
Branch: Computer
Year: Third Year
```

Conclusion:

Hence completed a PHP program that defines the class Student with attributes RollNo, Name, Branch, and Year, created 3 instances of it, set the value of each instance appropriately and printed the values of all attributes.