**QUESTION**

A class **Palin** has been defined to check whether a positive number is a Palindrome number or not.

The number ‘N’ is palindrome if the original number and its reverse are same.

Some of the members of the class are given below:

**Class name**: Palin  
**Data members/instance variables**:  
num: integer to store the number  
revnum: integer to store the reverse of the number

**Methods/Member functions**:  
Palin(): constructor to initialize data members with legal initial values  
void accept(): to accept the number.

int reverse(int y): reverse the parameterized argument ‘y’ and stores it in ‘revnum’ using recursive technique.

void check(): checks whether the number is a Palindrome by invoking the function reverse() and display the result with an appropriate message.

Specify the class **Palin** giving the details of the constructor(), void accept(), int reverse(int) and void check(). Define the **main()** function to create an object and call the functions accordingly to enable the task.

**Algorithm**

1. Start

2. Define a class `Palin` with the following instance variables:

- `num`: an integer to store the number.

- `revnum`: an integer to store the reverse of the number.

3. Define a constructor for the class `Palin`:

- Initialize `num` to 0.

- Initialize `revnum` to 0.

4. Define a method `accept()` for the class `Palin`:

- Create a `Scanner` object to read input from the user.

- Prompt the user to enter a number to check if it is a Palindrome number.

- Read the number from the user and store it in `num`.

5. Define a method `reverse(int y)` for the class `Palin`:

- If `y` is equal to 0, return `revnum`.

- Update `revnum` to `revnum \* 10 + y % 10`.

- Recursively call `reverse(y / 10)` and return its result.

6. Define a method `check()` for the class `Palin`:

- Reset `revnum` to 0.

- Call `reverse(num)` to reverse the number and store it in `revnum`.

- If `num` is equal to `revnum`, print that the number is a Palindrome number.

- Otherwise, print that the number is not a Palindrome number.

7. Define a `main` method for the class `Palin`:

- Create an object of the class `Palin`.

- Call the `accept()` method on the object to accept a number from the user.

- Call the `check()` method on the object to check if the number is a Palindrome number.

8. End

**VARIABLE DESCRIPTION TABLE**

|  |  |  |
| --- | --- | --- |
| **Variable Name** | **Data Type** | **Description** |
| num | int | Stores the number to be checked for being a palindrome number. |
| revnum | int | Stores the reverse of the number num. |
| y | int | Parameter for the recursive method reverse, used to calculate the reverse of the number. |