Lab: Creating a Customized Iterator

In this lab, you will create a customized iterator that generates a sequence of prime numbers.

Step 1: Implement the `is_prime()` Function

Write a function called `is_prime()` that takes an integer as input and returns `True` if the input is a prime number, and `False` otherwise. You can use any algorithm you like to determine whether a number is prime.

Step 2: Implement the `Primes` Iterator Class

Write an iterator class called `Primes` that generates a sequence of prime numbers. The class should have the following methods:

- `__init__(self, max)`: Initializes the iterator with the maximum number of primes to generate.
- `__iter__(self)`: Returns the iterator object itself.
- `__next__(self)`: Returns the next prime number in the sequence.

Step 3: Test the `Primes` Iterator

Create an instance of the `Primes` iterator and use it to generate the first 10 prime numbers. Print each prime number as it is generated.