Calculate the eigenvalues and eigenvectors of a large sparse matrix using numpy's sparse matrix handling.

1. Add Task Description:

   Objective: Calculate the eigenvalues and eigenvectors of a large sparse matrix using NumPy's sparse matrix handling tools.
   Eigenvalues and eigenvectors are fundamental in many fields, such as signal processing, quantum mechanics, and machine learning, for dimensionality reduction, stability analysis, and transformations. Handling sparse matrices optimizes memory and computation for large-scale problems.

2. Attach Screenshot Of Output.:

```
Eigenvalues:
[ 4.98697129+0.j          -0.39694006+1.8538429j  -0.39694006-1.8538429j
  0.46385553+1.77776389j  0.46385553-1.77776389j]

Eigenvectors:
[[-0.02970452+0.j          -0.03251682+0.00661095j -0.03251682-0.00661095j
   0.00471134-0.0195778j    0.00471134+0.0195778j ]
 [-0.04203003+0.j           0.02353931-0.01146282j  0.02353931+0.01146282j
   0.08582142+0.0228406j    0.08582142-0.0228406j ]
 [-0.02414964+0.j           0.02862257+0.00335417j  0.02862257-0.00335417j
  -0.01433236+0.01767667j -0.01433236-0.01767667j]
 ...
 [-0.04450809+0.j           0.00801364+0.02654659j  0.00801364-0.02654659j
  -0.01412817-0.06659522j -0.01412817+0.06659522j]
 [-0.04171196+0.j          -0.0083271 -0.02480487j -0.0083271 +0.02480487j
   0.04093555-0.02598252j  0.04093555+0.02598252j]
 [-0.01673231+0.j           0.00741732+0.00058722j  0.00741732-0.00058722j
  -0.0146172 -0.00437585j -0.0146172 +0.00437585j]]
```

3. Describe Widget/Algorithm Used In Task:

- **scipy.sparse and scipy.sparse.linalg.eigs**:
  - **Sparse Matrix Handling**:
    - scipy.sparse handles memory-efficient representations of large matrices, storing only non-zero elements.
    - Sparse matrix formats like CSR (Compressed Sparse Row) or CSC (Compressed Sparse Column) reduce storage requirements.
  - **Eigenvalue Computation**:
    - scipy.sparse.linalg.eigs is an iterative method to compute a subset of eigenvalues and eigenvectors for sparse matrices efficiently.
    - Uses the Arnoldi iteration or Lanczos methods under the hood, ensuring scalability for large matrices.