1. **Initialize Parameters**:
   * Set the parameters for the BPSO algorithm, such as population size, maximum iterations, number of colors, etc.
2. **Initialize Particles**:
   * Randomly initialize a population of particles representing potential solutions (graph colorings).
3. **Evaluate Fitness**:
   * Evaluate the fitness of each particle:
     + Convert the particle's position (coloring) into a graph coloring.
     + Calculate the fitness of the coloring based on the number of conflicts (adjacent vertices with the same color).
4. **Update Local and Global Best**:
   * Update the personal best solution (local best) for each particle and the global best solution (best overall solution found by any particle in the swarm).
5. **Main Loop**:
   * Iterate through the main loop until a termination criterion is met (e.g., maximum iterations reached):
     + Update velocities and positions of particles.
     + Evaluate fitness of new positions.
     + Update local and global best solutions.
6. **Termination Check**:
   * Check if the termination criterion is met. If yes, proceed to step 9 (End); otherwise, continue to the next iteration.
7. **Output Best Solution**:
   * Output the best solution found, i.e., the graph coloring with the minimum number of conflicts.