Pseudocode for Iterated Prisoner's Dilemma Strategies

Iterated Prisoner's Dilemma Pseudocode

Algorithm 1 Always Cooperate Strategy

```
procedure AlwaysCooperate(p, i)
    p[i] ← 0                          ▷ Always cooperate, represented by 0
    return p[i]
end procedure
```

Algorithm 2 Always Defect Strategy

```
procedure AlwaysDefect(p, i)
    p[i] ← 1                          ▷ Always defect, represented by 1
    return p[i]
end procedure
```

Algorithm 3 Tit For Tat Strategy

```
procedure TitForTat(p1, p2, i)
    if i = 0 then
        p1[i] ← 0                     ▷ Cooperate in the first round
    else
        p1[i] ← p2[i − 1]             ▷ Mimic opponent's last action
    end if
    return p1[i]
end procedure
```

Algorithm 4 IPD Game Simulation

```
1: procedure IPDGameSimulation(Strategy1, Strategy2, p1, p2)
2:     for i ← 0 to 49 do                    ▷ Simulate 50 rounds of the game
3:         Execute strategy for Player 1 based on Strategy1
4:         Execute strategy for Player 2 based on Strategy2
5:     end for
6:     Define payoff matrix
7:     Calculate total payoffs using calc_payoffs
8:     Compare payoffs and determine winner
9: end procedure
```