```
import numpy as np
def edit_distance(s1, s2, ins_cost=1, del_cost=1, sub_cost=1):
    m, n = len(s1), len(s2)
    dp = np.zeros((m + 1, n + 1))
    # Initialize base cases
    for i in range(m + 1):
        dp[i][0] = i * del_cost
    for j in range(n + 1):
        dp[0][j] = j * ins_cost
    # Compute the DP table
    for i in range(1, m + 1):
         for j in range(1, n + 1):
             cost\_sub = 0 if s1[i - 1] == s2[j - 1] else sub\_cost
             dp[i][j] = min(
                  dp[i - 1][j] + del_cost,
                                                      # Deletion
                  dp[i][j - 1] + ins_cost,
                                                      # Insertion
                  dp[i - 1][j - 1] + cost_sub # Substitution
    # Backtrace to find the alignment
    alignment = []
    i, j = m, n
    while i > 0 or j > 0:
         if i > 0 and dp[i][j] == dp[i - 1][j] + del_cost:
             alignment.append((s1[i - 1], '-', 'Deletion'))
             i -= 1
         elif j > 0 and dp[i][j] == dp[i][j - 1] + ins_cost:
             alignment.append(('-', s2[j - 1], 'Insertion'))
             j -= 1
         else:
             alignment.append((s1[i - 1], s2[j - 1], 'Substitution' if s1[i - 1] != s2[j - 1] else 'Match'))
             j -= 1
    alignment.reverse()
    return dp[m][n], alignment
# Example usage
s1 = "kitten"
s2 = "sitting"
distance, alignment = edit_distance(s1, s2, ins_cost=1, del_cost=1, sub_cost=2)
print(f"Minimum Edit Distance: {distance}")
print("Alignment:")
for step in alignment:
    print(step)
→ Minimum Edit Distance: 5.0
     Alignment:
     Alignment:
('-', 's', 'Insertion')
('k', '-', 'Deletion')
('i', 'i', 'Match')
('t', 't', 'Match')
('t', 't', 'Match')
('-', 'i', 'Insertion')
('e', '-', 'Deletion')
('n', 'n', 'Match')
('-', 'g', 'Insertion')
```