Min Max Algorithm

AIM:

To solve any problem using min max algorithm

Program:

```
def minimax(depth, node_index, is_max, scores, height):
    # Base case: leaf node is reached
    if depth == height:
        return scores[node_index]

    if is_max:
        return max(
            minimax(depth + 1, node_index * 2, False, scores, height),
            minimax(depth + 1, node_index * 2 + 1, False, scores, height)
        )
    else:
        return min(
            minimax(depth + 1, node_index * 2, True, scores, height),
            minimax(depth + 1, node_index * 2 + 1, True, scores, height)
        )

# Example usage:
# Scores of the leaf nodes
scores = [3, 5, 6, 9, 1, 2, 0, -1]
height = 3  # Tree height

optimal_value = minimax(0, 0, True, scores, height)
print(f"The optimal value is: {optimal_value}")
```

Output:

```
The optimal value is: 5
```

Result:

The problem and output is verified