

Pseudocode

1 General Conditions

```
function GENERALCONDITIONS(startRow, startColumn, endRow, endField)
  if  $!(1 \leq \text{startRow} \leq 8) \parallel !(1 \leq \text{startColumn} \leq 8) \parallel !(1 \leq \text{endRow} \leq 8) \parallel$ 
 $!(1 \leq \text{endColumn} \leq 8)$  then
    return false
  end if
  if  $\text{isWhite} \neq \text{whitesTurn}$  then
    return false
  end if
  if  $\text{startRow} == \text{endRow} \ \&\& \ \text{startColumn} == \text{endColumn}$  then
    return false
  end if
end function

function CHECKENDFIELD(endRow, endColumn)
  if  $\text{Field}[\text{endRow}][\text{endColumn}].\text{empty} == \text{true}$  then
    return true
  end if
  if  $\text{Field}[\text{endRow}][\text{endColumn}].\text{Figure.isWhite} == \text{isWhite}$  then
    return false
  end if
  return true
end function
```

2 Pawn

```
if isWhite then
   $\text{stepDir} \leftarrow 1$ 
else
   $\text{stepDir} \leftarrow -1$ 
end if
 $\text{rowStep} \leftarrow \text{endRow} - \text{startRow}$ 
if  $(\text{Field}[\text{endRow}][\text{endColumn}].\text{empty} \ \&\& \ \text{columnDiff} == 1) \parallel (!\text{Field}[\text{endRow}][\text{endColumn}].\text{empty}$ 
 $\ \&\& \ \text{columnDiff} == 0)$  then
  return false
end if
if  $\text{columnDiff} == 0 \ \&\& \ \text{rowStep} == 1 * \text{stepDir}$  then
  return true
end if
if  $\text{columnDiff} == 0 \ \&\& \ \text{rowStep} == 2 * \text{stepDir} \ \&\& \ !\text{wasMoved}$  then
  if  $\text{Field}[\text{startRow} + 1][\text{endRow}].\text{empty}$  then
    return true
  end if
```

```

end if
if  $columnDiff == 1 \ \&\& \ rowStep == 1 * stepDir \ \&\& \ Field[endRow][endColumn].Figure.white \neq this.white$  then
    return true
end if
return false

```

3 Rook

```

if  $!((rowDiff == 0 \ \&\& \ columnDiff \neq 0) || (rowDiff \neq 0 \ \&\& \ columnDiff == 0))$ 
then
    return false
end if
if  $rowDiff == 0$  then
     $column \leftarrow \min(startColumn, endColumn)$ 
     $maxColumn \leftarrow \max(startColumn, endColumn)$ 
    while  $column < maxColumn$  do
        if  $Field[startRow][column].empty \neq true$  then
            return false
        end if
         $column \leftarrow column + 1$ 
    end while
else
     $row \leftarrow \min(startRow, endRow)$ 
     $maxRow \leftarrow \max(startRow, endRow)$ 
    while  $row < maxRow$  do
        if  $Field[startRow][column].empty \neq true$  then
            return false
        end if
         $column \leftarrow column + 1$ 
    end while
end if
return checkEndField(endRow, endColumn)

```

4 Knight

```

if  $!((rowDiff == 2 \ \&\& \ columnDiff == 1) || (rowDiff == 1 \ \&\& \ columnDiff == 2))$  then
    return false
end if
return checkEndField(endRow, endColumn)

```

5 Bishop

```

if  $rowDiff \neq columnDiff$  then

```

```

    return false
end if
if startRow < endRow then
    rowStep ← 1
else
    rowStep ← -1
end if
if startColumn < endColumn then
    columnStep ← 1
else
    columnStep ← -1
end if
row ← startRow
column ← startColumn
while row ≠ endRow do
    if Field[row][column].empty ≠ true then
        return false
    end if
    row ← row + rowStep
    column ← column + columnStep
end while
return checkEndField(endRow,endColumn)

```

6 Queen

```

if validBishopMove || validRookMove then
    return true
end if
return false

```

7 King

```

if rowDiff ≤ 1 && columnDiff ≤ 1 then
    return true
end if
return checkEndField(endRow,endColumn)

```