

**Ex.no:1**

## **1. IMAGE MAPPING**

**Date:**

### **AIM:**

To use image mapping technique for showing the information of it in web pages using HTML.

### **ALGORITHM:**

**Step 1:** Start

**Step 2:** Get the image selected and link it to the package.

```

```

**Step 3:** Determine the size of the image .It is very important because if the size of the image is changed then the area coordinates will also require

updation. 

```

```

**Step 4:** Determine the coordinates of the areas that want to mapped.It can be done in three shapes which are rectangle,circle and polygons.Coordinates can be found easily by using MS.Paint.

```
<area Shape="rect" Coords="20,20,78,78" href="Rook.html">
```

**Step 5:** The mapped area is directed to another web page displaying the information about the mapped area.

**Step 6:** Stop

### **PROGRAM:**

#### **Chess.html**

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
<title>Chess</title>
```

```
</head>
```

```
<body>
```

<h1>CHESS</h1>

<p>A brief description about chess game is given</p>

<ul>

<li>Chess is a board game between two players.</li>

<li>Chess is an abstract strategy game and involves no hidden information.</li>

<li>It is played on a chessboard with 64 squares arranged in an eight-by-eight grid.</li>

<li>At the start, each player controls sixteen pieces: one king, one queen, two rooks, two bishops, two knights, and eight pawns.</li>

<li>The player controlling the white pieces moves first, followed by the player controlling the black pieces.</li>

<li>The object of the game is to checkmate the opponent's king, whereby the king is under immediate attack (in "check") and there is no way for it to escape.</li>

<li>There are also several ways a game can end in a draw.</li>

</ul>



<map Name="Chess">

<area Shape="rect" Coords="20,20,78,78" href="Rook.html">

<area Shape="rect" Coords="78,20,134,78" href="Knight.html">

<area Shape="rect" Coords="134,20,190,78" href="Bishop.html">

<area Shape="rect" Coords="190,20,250,78" href="Queen.html">

<area Shape="rect" Coords="250,20,306,78" href="King.html">

<area Shape="rect" Coords="306,20,364,78" href="Bishop.html">

<area Shape="rect" Coords="364,20,422,78" href="Knight.html">

<area Shape="rect" Coords="422,20,478,78" href="Rook.html">

<area Shape="rect" Coords="20,78,478,134" href="Pawns.html">

<area Shape="rect" Coords="20,420,78,480" href="Rook.html">

```

<area Shape="rect" Coords="78,420,134,480" href="Knight.html">
<area Shape="rect" Coords="134,420,190,480" href="Bishop.html">
<area Shape="rect" Coords="190,420,250,480" href="Queen.html">
<area Shape="rect" Coords="250,420,306,480" href="King.html">
<area Shape="rect" Coords="306,450,364,480" href="Bishop.html">
<area Shape="rect" Coords="364,420,422,480" href="Knight.html">
<area Shape="rect" Coords="422,420,480,480" href="Rook.html">
<area Shape="rect" Coords="20,364,478,420" href="Pawns.html">
</map>

```

```

<h2>Chess pieces and its count</h2>

```

```

<table>
<tr>
<th>S.No</th>
<th>Pieces</th>
<th>White</th>
<th>Black</th>
<th>Total</th>
</tr>
<tr>
<td>1.</td>
<td>Rook</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>2.</td>

```

<td>Knight</td>

<td>2</td>

<td>2</td>

<td>4</td>

</tr>

<tr>

<td>3.</td>

<td>Bishop</td>

<td>2</td>

<td>2</td>

<td>4</td>

</tr>

<tr>

<td>4.</td>

<td>Queen</td>

<td>1</td>

<td>1</td>

<td>2</td>

</tr>

<tr>

<td>5.</td>

<td>Pawns</td>

<td>8</td>

<td>8</td>

<td>16</td>

</tr>

</table>

<p>Thus totally we have 32 chess pieces in the game.</p>

</body>

</html>

## Output:





### Chess pieces and its count

S.No	Pieces	White	Black	Total
1.	Rook	2	2	4
2.	Knight	2	2	4
3.	Bishop	2	2	4
4.	Queen	1	1	2
5.	King	1	1	2
6.	Pawns	8	8	16

Thus totally we have 32 chess pieces in the game.



## Rook.html

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
<title>Rook</title>
```

```
</head>
```

```
<body>
```

```
<h2>Rook</h2>
```

```

```

```
<ul>
```

```
<li>The rook is the second most powerful piece in chess! It is a long-range piece and is notorious for delivering back-rank checkmates!</li>
```

```
<li>When a game begins, each side starts with two rooks.</li>
```

```
<li>The rooks begin the game in the corners of the chessboard: White's rooks start the game on a1 and h1, while Black's rooks are located on a8 and h8.</li>
```

```
<li>The rook is considered a major piece (like the queen) and is worth five points.</li>
```

<li>As mentioned, the rook is the second most powerful piece (behind the queen).</li>

<li>The rook can move forward, backward or sideways, but cannot move diagonally (like a queen or a bishop).</li>

<li>The rook can move up or down vertically on any file.</li>

<li>In the following diagram, you can see the rook's potential moves highlighted on the e-file.</li>

<li>It is considerably more valuable than a pawn (one point), a knight (three points), and a bishop (also three points) is but less valuable than a queen (nine points).</li>

<li>A rook can move any number of squares along a rank or file, but cannot leap over other pieces.</li>

<li>Along with the king, a rook is involved during the king's castling move.</li>

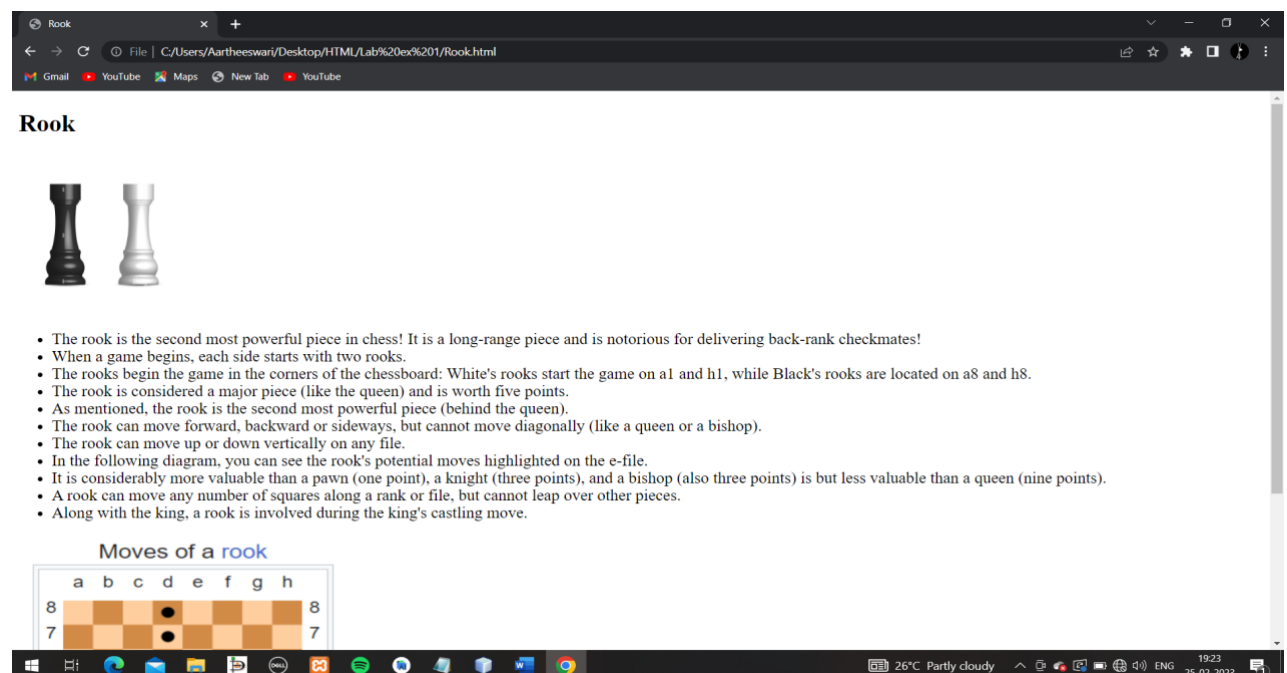
</ul>



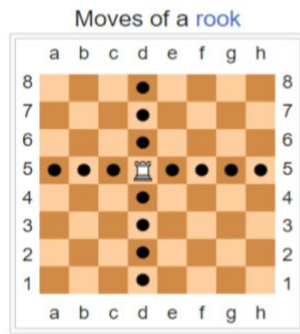
</body>

</html>

## Output:



- It is considerably more valuable than a pawn (one point), a knight (three points), and a bishop (also three points) is but less valuable than a queen (nine points).
- A rook can move any number of squares along a rank or file, but cannot leap over other pieces.
- Along with the king, a rook is involved during the king's castling move.



## Knight.html

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
<title>Knight</title>
```

```
</head>
```

```
<body>
```

```
<h2>Knight</h2>
```

```

```

```
<ul>
```

```
<li>When a game begins, each side starts with two knights. White's knights start the game on b1 and g1, while Black's knights begin on b8 and g8.</li>
```

```
<li>A knight moves to any of the closest squares that are not on the same rank, file, or diagonal.</li>
```

```
<li>The knight moves multiple squares each move.</li>
```

```
<li>It either moves up or down one square vertically and over two squares horizontally OR up or down two squares vertically and over one square horizontally.</li>
```

```
<li>This movement can be remembered as an "L-shape" because it looks like a capital "L".</li>
```




- <li>The knight is the only piece that can leap over other pieces.</li>
  - <li>The knight is the trickiest piece in chess! It moves very differently than other pieces and can deliver the dreaded fork or even a smothered mate!</li>
  - <li>The knight is unique for two major reasons:It is the only piece that can hop or jump over another piece, and every time it moves it alternates from a light-square to a dark-square, or vice-versa.</li>
  - <li>The knight is considered a minor piece (like a bishop) and is worth three points.</li>
  - <li>It is considerably more valuable than a pawn (which is worth one point), equally valuable as a bishop (also three points), but less valuable than a rook (five points) and a queen (nine points).</li>
  - <li>Another unique aspect of the knight is that it always alternates between the two colors.</li>
  - <li>If a knight starts on a light-square and makes a legal move, it always ends on a dark-square.</li>
  - <li>If a knight starts on a dark-square, it always ends on a light-square.</li>
  - <li>This is the opposite of a bishop, which is confined to one square color for the entire game.</li>
  - <li>Always remember that a knight captures a piece only if it lands on the occupied square, not if it jumps over it! Another cool thing about knights!They can deliver devastating forks and smothered mates!</li>
  - <li>A fork is when two or more pieces are attacked simultaneously.</li>
  - <li>Even though this can be achieved by other pieces, the knight is the best-suited piece for this type of attack because it can attack multiple pieces that are more valuable than itself in a single move.</li>
  - <li>An advanced technique that only a knight can perform is called a smothered mate.</li>
  - <li>A smothered mate is the name for a checkmate that occurs when a king is surrounded by their own pieces and cannot move out of check.</li>
- </ul>
- 

</body>

</html>

## Output:

**Knight**

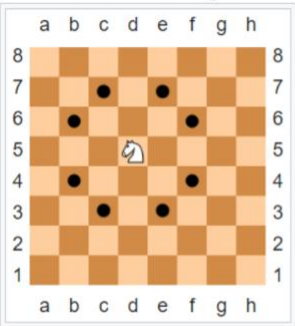


- When a game begins, each side starts with two knights. White's knights start the game on b1 and g1, while Black's knights begin on b8 and g8.
- A knight moves to any of the closest squares that are not on the same rank, file, or diagonal.
- The knight moves multiple squares each move.
- It either moves up or down one square vertically and over two squares horizontally OR up or down two squares vertically and over one square horizontally.
- This movement can be remembered as an "L-shape" because it looks like a capital "L".
- The knight is the only piece that can leap over other pieces.
- The knight is the trickiest piece in chess! It moves very differently than other pieces and can deliver the dreaded fork or even a smothered mate!
- The knight is unique for two major reasons: It is the only piece that can hop or jump over another piece, and every time it moves it alternates from a light-square to a dark-square, or vice-versa.
- The knight is considered a minor piece (like a bishop) and is worth three points.
- It is considerably more valuable than a pawn (which is worth one point), equally valuable as a bishop (also three points), but less valuable than a rook (five points) and a queen (nine points).
- Another unique aspect of the knight is that it always alternates between the two colors.
- If a knight starts on a light-square and makes a legal move, it always ends on a dark-square.
- If a knight starts on a dark-square, it always ends on a light-square.
- This is the opposite of a bishop, which is confined to one square color for the entire game.
- Always remember that a knight captures a piece only if it lands on the occupied square, not if it jumps over it! Another cool thing about knights! They can deliver devastating forks and smothered mates!

It is considerably more valuable than a pawn (which is worth one point), equally valuable as a bishop (also three points), but less valuable than a rook (five points) and a queen (nine points).

- Another unique aspect of the knight is that it always alternates between the two colors.
- If a knight starts on a light-square and makes a legal move, it always ends on a dark-square.
- If a knight starts on a dark-square, it always ends on a light-square.
- This is the opposite of a bishop, which is confined to one square color for the entire game.
- Always remember that a knight captures a piece only if it lands on the occupied square, not if it jumps over it! Another cool thing about knights! They can deliver devastating forks and smothered mates!
- A fork is when two or more pieces are attacked simultaneously.
- Even though this can be achieved by other pieces, the knight is the best-suited piece for this type of attack because it can attack multiple pieces that are more valuable than itself in a single move.
- An advanced technique that only a knight can perform is called a smothered mate.
- A smothered mate is the name for a checkmate that occurs when a king is surrounded by their own pieces and cannot move out of check.

**Moves of a knight**



## Bishop.html

```
<!DOCTYPE html>

<html>

<head>

<title>Bishop</title>

</head>

<body>

<h2>Bishop</h2>



<ul>

<li>A bishop can move any number of squares diagonally, but cannot leap over
other pieces.</li>

<li>The bishop is an interesting piece because it can move as far as it wants but
only on diagonals.</li>

<li>It is a long-range piece and can be very dangerous!</li>

<li>At the beginning of the game, each side starts with two bishops.</li>

<li>The light-squared bishop for White starts on the f1-square while Black's
light-squared bishop starts on the c8-square.</li>

<li>White's dark-squared bishop begins on the c1-square while Black's dark-
squared bishop begins on the f8-square.</li>

<li>The bishop is considered a minor piece (like a knight) and is worth three
points.</li>

<li>It is considerably more valuable than a pawn (which is worth one point),
equally valuable as a knight (also three points), but less valuable than a rook (five
points) or a queen (nine points).</li>

<li>The bishop is interesting because it never moves straight forward, backward
or side to side.</li>

<li>It cannot hop over other pieces like a knight. The bishop moves only on
diagonals.</li>
```

<li>Every bishop is confined to half of the board, as it can move only on its respective light or dark squares.</li>

<li>A light-squared bishop can move only on light squares, while a dark-squared bishop can move only on dark squares.</li>

<li>The two bishops work well together if they are on adjacent diagonals—look how many squares these two bishops control!</li>

<li>A bishop can never change from a light-squared bishop to a dark-squared bishop or vice-versa.</li>

<li>It can capture an enemy piece by moving to the occupied square and can move as many squares as it likes, as long as it is not blocked by another piece or an occupied square.</li>

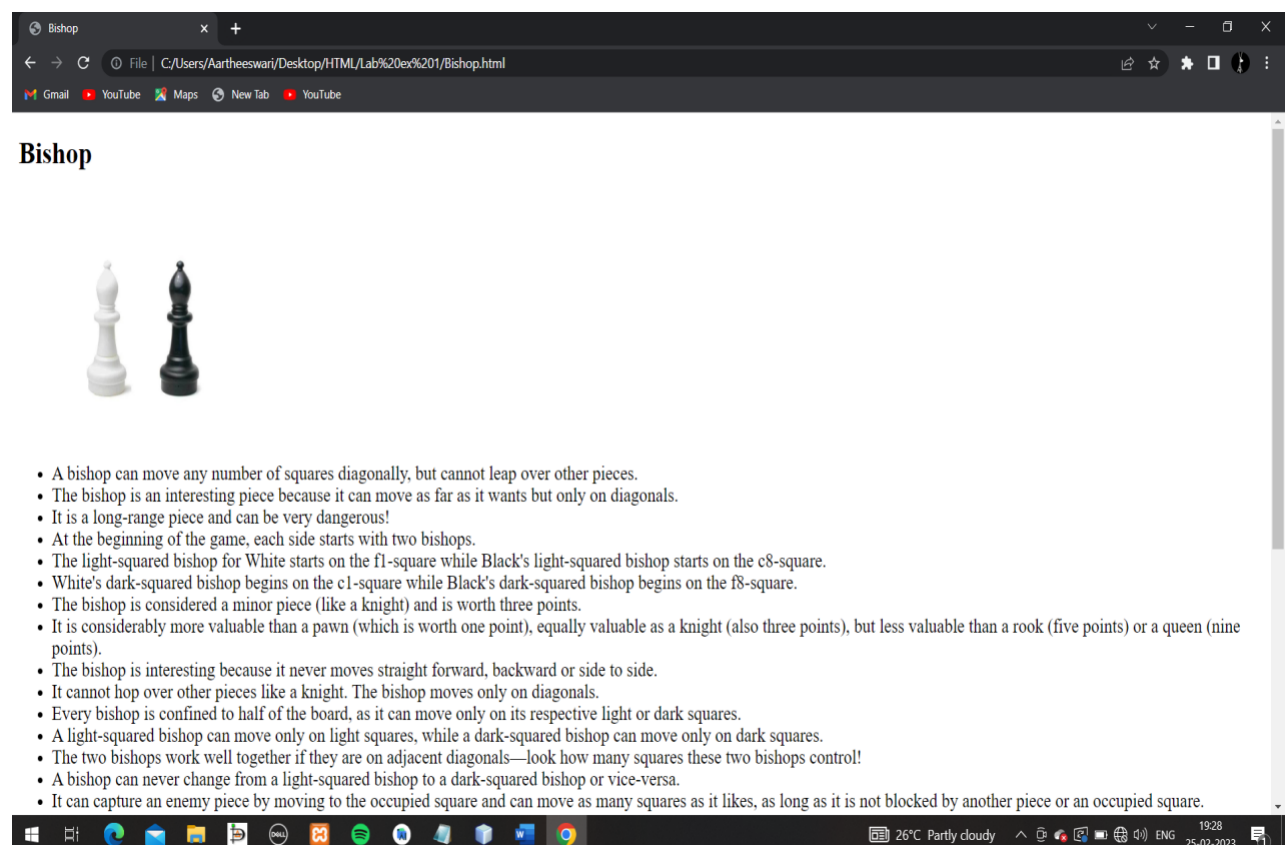
</ul>

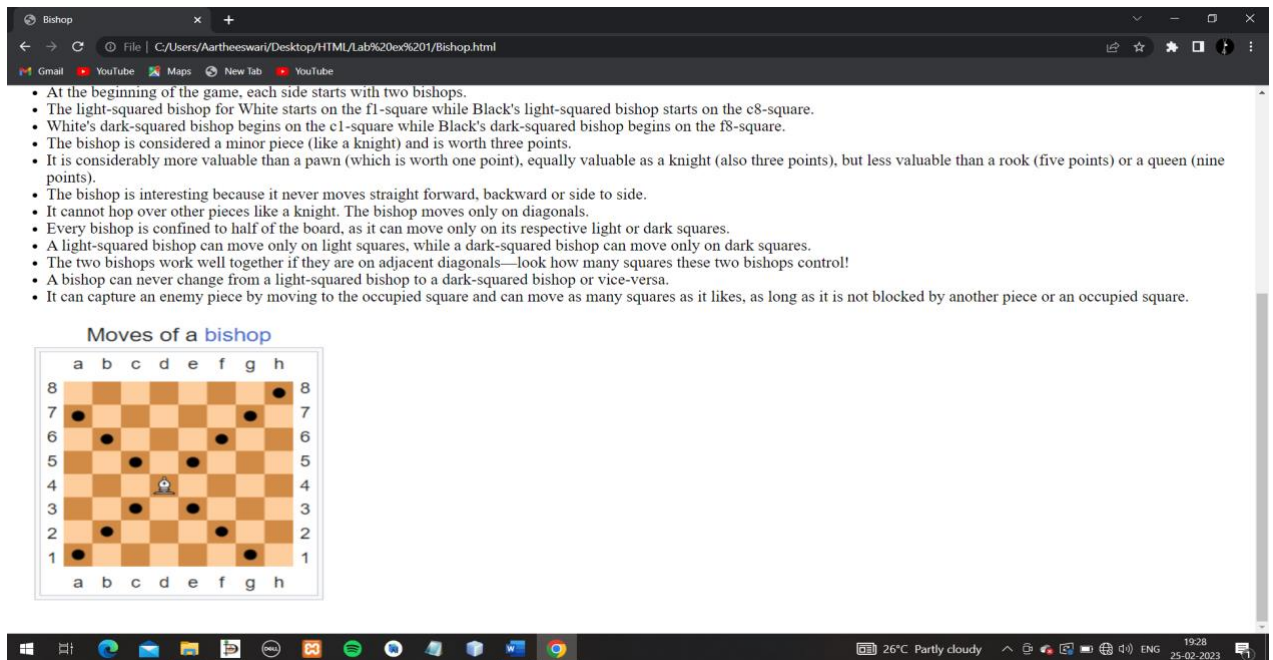


</body>

</html>

## Output:





## Queen.html

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
<title>Queen</title>
```

```
</head>
```

```
<body>
```

```
<h2>Queen</h2>
```

```

```

```
<ul>
```

```
<li>The queen is the most powerful of all of the chess pieces and is often used in early and brutal attacks.</li>
```

```
<li>It is important to learn how to make your opponent fear your dangerous queen!</li>
```

```
<li>At the beginning of the game, the white queen is placed on the d1-square, and the black queen starts on the d8-square (directly next to the kings).</li>
```

```
<li>It is worth noting that the white queen is placed on a light square, and the black queen is placed on a dark square.</li>
```

<li>The queen is more valuable than any other piece. The queen is worth nine points, a pawn is worth one point, a bishop and knight are worth three points, and a rook is worth five points.</li>

<li>As mentioned, the queen is the most powerful piece. This is because the queen can attack (or defend) more squares than any other piece!</li>

<li>The queen moves similarly to multiple pieces. It can move in any direction like a king (but the queen is not limited to a single square). The queen can move the same way a rook can, moving freely up and down on any file and left and right on any rank.</li>

<li>The queen can also move freely on any diagonal like a bishop.</li>

<li>The queen can move as many squares as it likes as long as it is not blocked by another piece or occupied square.</li>

<li>The queen can capture an enemy piece by moving to the occupied square.</li>

<li>One easy way to remember how the queen moves is that it moves like a rook and bishop combined.</li>

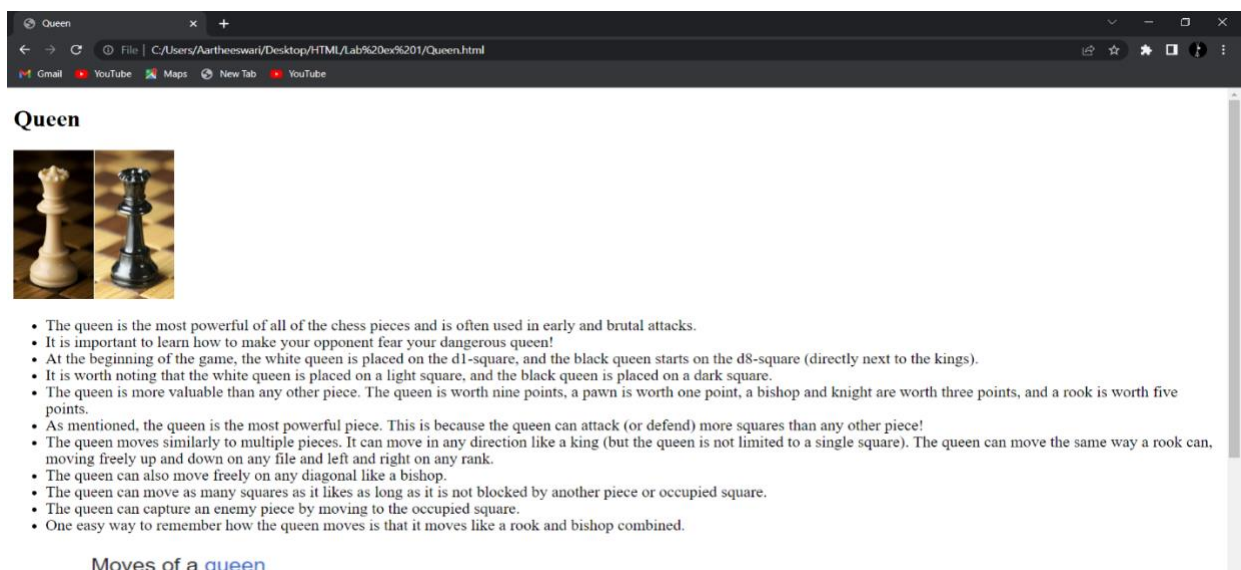
</ul>



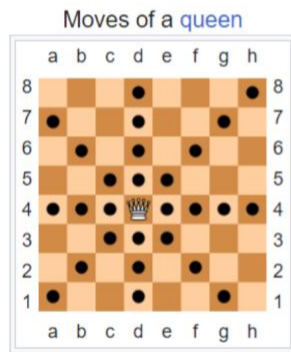
</body>

</html>

## Output:



- The queen can also move freely on any diagonal like a bishop.
- The queen can move as many squares as it likes as long as it is not blocked by another piece or occupied square.
- The queen can capture an enemy piece by moving to the occupied square.
- One easy way to remember how the queen moves is that it moves like a rook and bishop combined.



## King.html

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
<title>King</title>
```

```
</head>
```

```
<body>
```

```
<h2>King</h2>
```

```

```

```
<ul>
```

```
<li>The king is not the most powerful chess piece, but it is the most important one! If a king is put in checkmate, then the game is over! </li>
```

```
<li>The king is less powerful than almost every chess piece, but it is also unique: the king is the only piece that can never be captured! If a king is attacked, it is in "check." At the beginning of the game, the white king starts on the e1 square, and the black king starts on e8.</li>
```

```
<li>The pawns on the second and seventh ranks protect the kings, but always be mindful of the f2 and f7 squares—these squares are usually involved in very quick checkmates, as pawns on these squares are the only ones protected solely by the king when a game begins!</li>
```



<li>The king's movement is limited compared to other chess pieces. It can move one square in any direction. In the following position, the king can move to any of the highlighted squares.</li>

<li>When a king is attacked, it is in check.</li>

<li>A king cannot move into check (that is considered an illegal move), and if a king is put in check, it must get out of check. </li>

<li>There are three ways to get out of check: Move the king out of check, block the check with another piece and capture the piece putting the king in check.</li>

<li>If a king is in check and none of these options are legal, then a checkmate has occurred and the game is over!</li>

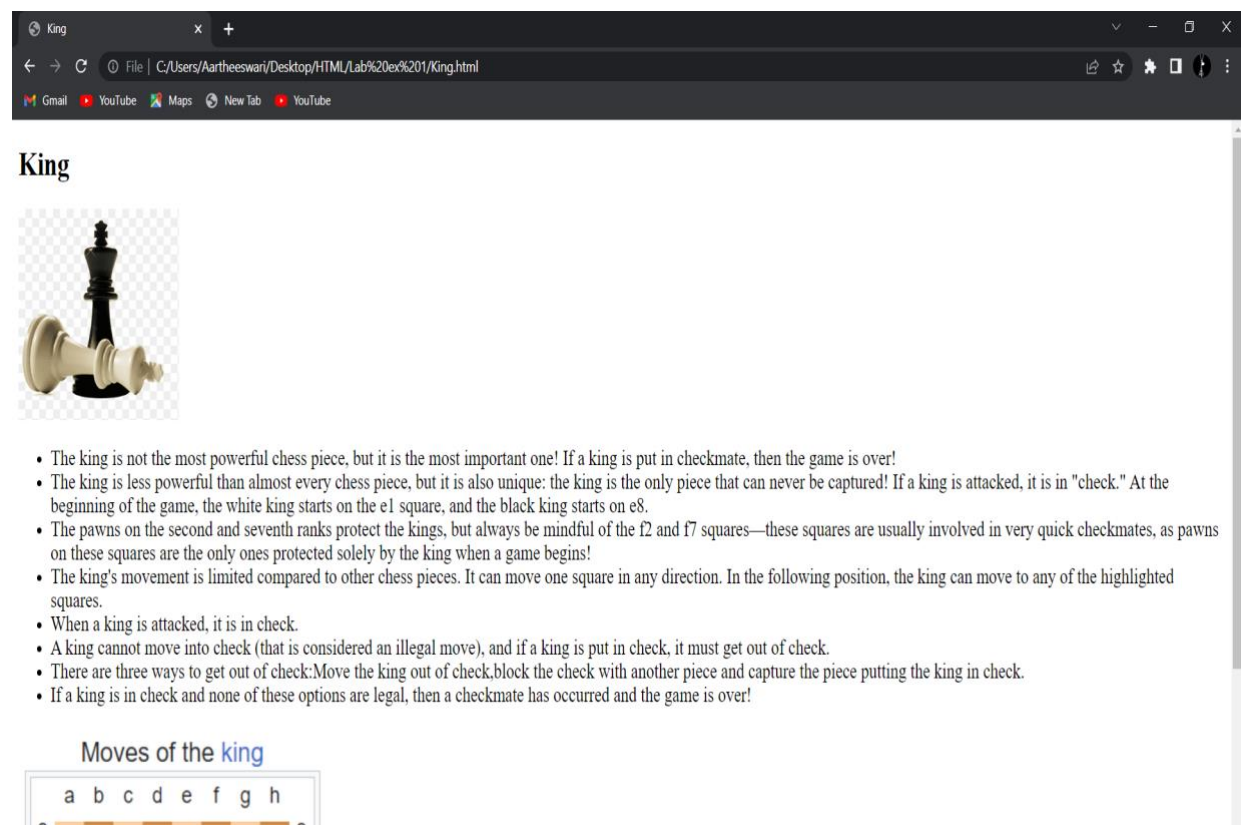
</ul>



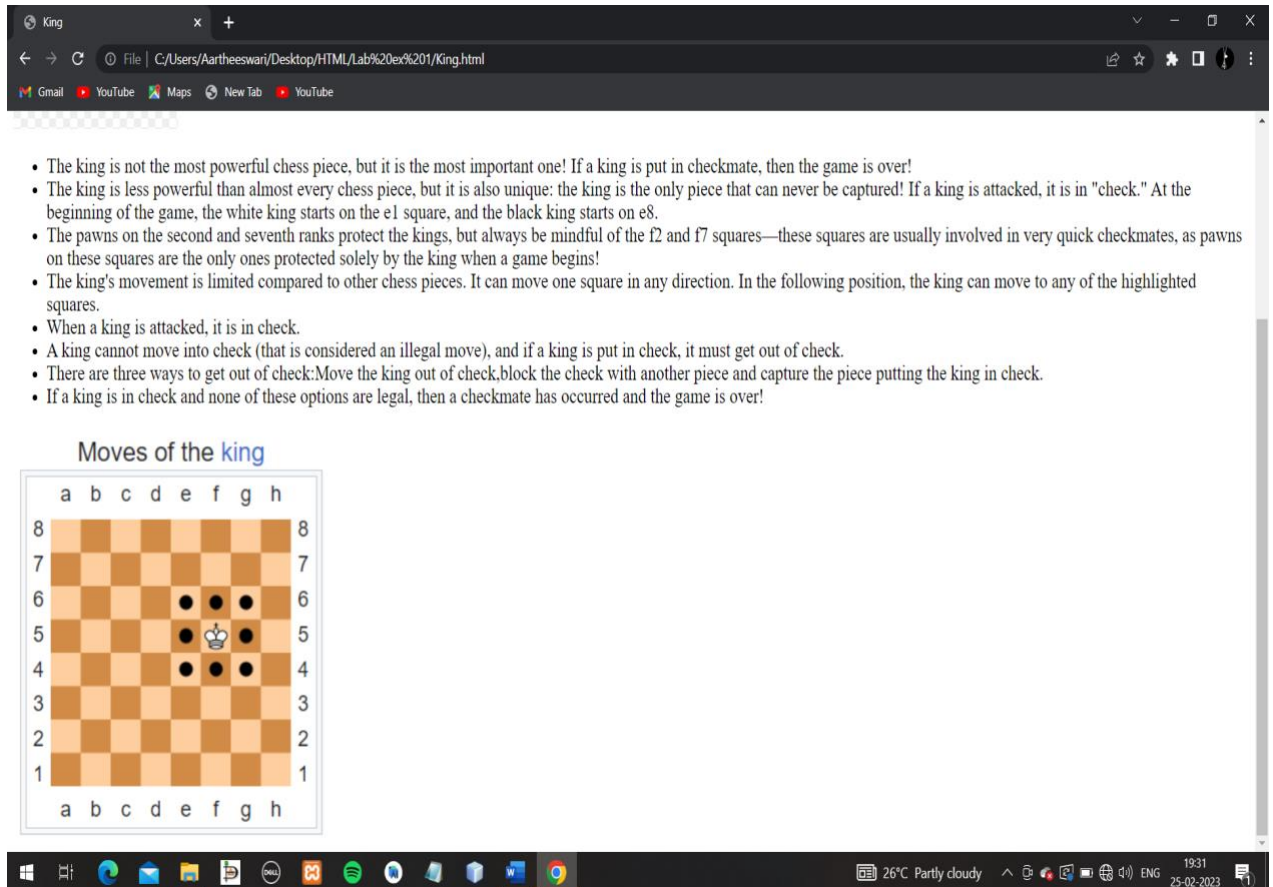
</body>

</html>

## Output:







## Pawns.html

```
<!DOCTYPE html>
```

```
<head>
```

```
<title>Pawns</title>
```

```
</head>
```

```
<body>
```

```
<h2>Pawns</h2>
```

```

```

```
<ul>
```

```
<li>The pawn is the least powerful chess piece, but it can be promoted into any
other chess piece (except for a king). As Philidor once said, "Pawns are the soul
of chess!"</li>
```

<li>When a game begins, each side starts with eight pawns. </li>

<li>The pawns begin the game on the second and seventh rank: White's pawns start on the second rank, while Black's pawns are located on the seventh rank.</li>

<li>A pawn is worth one point. It is considerably less valuable than the other pieces by itself, but in many positions, three pawns are equal to or even stronger than a minor piece (knight or bishop).</li>

<li>As mentioned, the pawn is the least powerful piece. A pawn moves forward one square unless it is that pawn's first move.</li>

<li> If it is the pawn's first move, then it can move one or two squares.</li>

<li>The pawn can only move forward if it is not blocked by another piece.</li>

<li>The pawn attacks or captures one square diagonally in each direction.</li>

<li>There is a special rule in chess regarding pawn captures known as en passant. If a white pawn is on the fifth rank and a black pawn's first move places it directly next to the white pawn, then the white pawn can capture the black pawn as if it moved just one square. This rule also works if a black pawn is on the fourth rank and a white pawn's first move places it directly next to the black pawn—in this case, the black pawn may capture the white pawn as if it moved just one square (but only for this move)!</li>

<li>Pawns have the unique ability to be able to promote into a knight, bishop, rook or queen! If a white pawn reaches the eighth rank or if a black pawn reaches the first rank, then that pawn gets promoted. It is up to the player who is promoting a pawn to decide which piece they are promoting to, although most of the time promoting to a queen is the desirable choice.</li>

<li>In rare instances, underpromotion is best.</li>

<li> Underpromotion occurs when a pawn is promoted to a knight, bishop, or rook instead of a queen.</li>

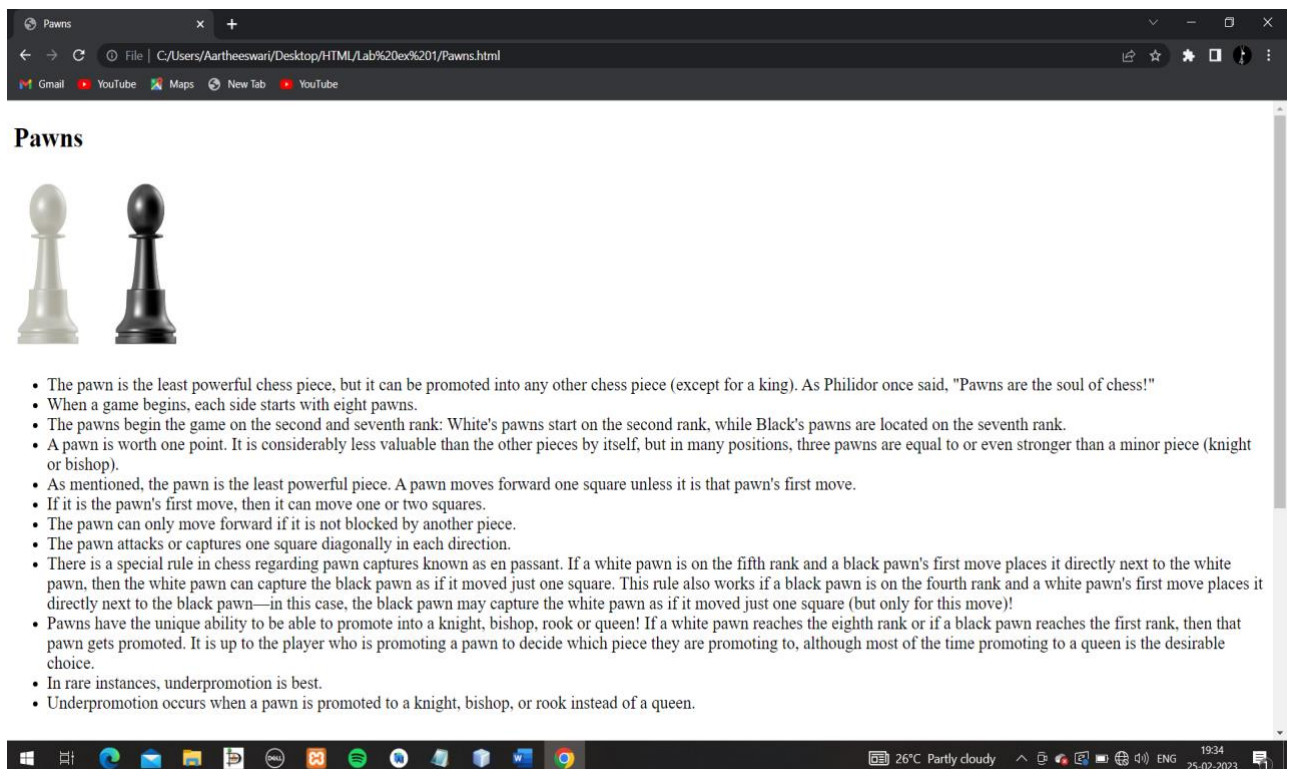
</ul>



</body>

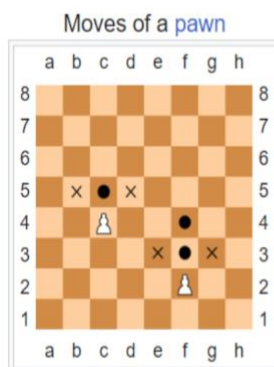
</html>

## Output:



pawn gets promoted. It is up to the player who is promoting a pawn to decide which piece they are promoting to, although most of the time promoting to a queen is the desirable choice.

- In rare instances, underpromotion is best.
- Underpromotion occurs when a pawn is promoted to a knight, bishop, or rook instead of a queen.



## RESULT:

Thus the html program for image mapping is written and executed successfully.