

**Program:***rsa.html*

```
<html>
<head>
  <title>RSA Encryption</title>
  <meta name="viewport" content="width=device-width, initiascale=1.0">
</head>
<body>
  <center>
    <h1>RSA Algorithm</h1>
    <h2>Implemented Using HTML & Javascript</h2>
    <hr>
    <table>
      <tr>
        <td>Enter First Prime Number:</td>
        <td><input type="number" value="53" id="p"></td>
      </tr>
      <tr>
        <td>Enter Second Prime Number:</td>
        <td><input type="number" value="59" id="q"></p>
      </td>
    </tr>
    <tr>
      <td>Enter the Message(cipher text):<br>[A=1, B=2,...]</td>
      <td><input type="number" value="89" id="msg"></p>
    </td>
    </tr>
    <tr>
      <td>Public Key:</td>
```

```

        <td>
            <p id="publickey"></p>
        </td>
    </tr>
    <tr>
        <td>Exponent:</td>
        <td>
            <p id="exponent"></p>
        </td>
    </tr>
    <tr>
        <td>Private Key:</td>
        <td>
            <p id="privatekey"></p>
        </td>
    </tr>
    <tr>
        <td>Cipher Text:</td>
        <td>
            <p id="ciphertext"></p>
        </td>
    </tr>
    <tr>
        <td><button onclick="RSA();">Apply RSA</button></td>
    </tr>
</table>
</center>
</body>
<script type="text/javascript">

```

```

function RSA()
{
    var gcd, p, q, no, n, t, e, i, x;
    gcd = function (a, b) { return (!b) ? a : gcd(b, a % b); };
    p = document.getElementById('p').value;
    q = document.getElementById('q').value;
    no = document.getElementById('msg').value;
    n = p * q;
    t = (p - 1) * (q - 1);
    for (e = 2; e < t; e++)
    {
        if (gcd(e, t) == 1)
        {
            break;
        }
    }
    for (i = 0; i < 10; i++)
    {
        x = 1 + i * t
        if (x % e == 0)
        {
            d = x / e;
            break;
        }
    }
    ctt = Math.pow(no, e).toFixed(0);
    document.getElementById('publickey').innerHTML = n;
    document.getElementById('exponent').innerHTML = e;
}

```

```
document.getElementById('privatekey').innerHTML = d;  
document.getElementById('ciphertext').innerHTML = ct;  
}  
</script>  
</html>
```