

Configuration Manual

MSc Internship
Cybersecurity

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MSc Project Submission Sheet
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Configuration Manual

Surya Prakash Subramaniam Govindaraj
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1 System Requirements

The minimum system requirements needed for this specification,
Operating System (OS): Windows 10, 7, Linux, Ubuntu or MAC
Minimum Storage: 30 GB
Minimum RAM: 4 GB

2 Process to Run

The application runs with the help of Eclipse IDE, where the application is developed in Java Programming Language and MYSQL database as Backend, where the frontend of the application is developed using HTML, CSS, JavaScript. The below figures represent the code of the application to run, where it is setup with MYSQL Database, Eclipse IDE Kepler and Tomcat 8 to run the application. Similarly, for cloud deployment AWS Cloud server is used, its deployed using Elastic Beanstalk which is an inbuilt cloud deployment application and it follows some security features in it. The screenshots of the code developed can be found below

```
<tr>
  <td>&nbsp;</td>
  <td>&nbsp;</td>
  <td><h1 align="center">Registration</h1></td>
</tr>
<tr>
  <td>&nbsp;</td>
  <td>&nbsp;</td>
  <td><table width="366" height="288" border="1" bgcolor="#AA7FAA" align="right">
    <tr>
      <td width="109">Name</td>
      <td width="139"><input type="text" name="cname" required></td>
    </tr>
    <tr>
      <td>Password</td>
      <td><input type="password" name="pwd" required></td>
    </tr>
    <tr>
      <td>Gender</td>
      <td><select name="gender">
<option value="male">Male</option>
<option value="female">Female</option>
</select></td>
    </tr>
    <tr>
      <td>Mac Address </td>
      <td><input type="text" name="mac_address" value="<%=sb.toString() %>"></td>
    </tr>
    <tr>
      <td>E-mail</td>
      <td><input type="text" name="mail"></td>
    </tr>
    <tr>
      <td>Mobile No </td>
      <td><input type="text" name="mobileNo"></td>
    </tr>
    <tr>
      <td>&nbsp;</td>
      <td><input type="submit" name="Submit" value="Submit">
<input type="reset" name="Submit2" value="Reset"></td>
    </tr>
  </table> </td>
</tr>
```

Figure.1 Registration page JSP

```

protected void doPost(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException
{
    String sql="insert into emp values(?, ?, ?, ?, ?, ?)";
    String uname = request.getParameter("cname").toString();
    String pwd = request.getParameter("pwd").toString();
    String gender = request.getParameter("gender").toString();
    String mac_address = request.getParameter("mac_address").toString();
    String mail = request.getParameter("mail").toString();
    String mbileNo = request.getParameter("mobileNo").toString();

    String driver = "com.mysql.jdbc.Driver";
    String connectionUrl = "jdbc:mysql://localhost:3306/";
    String database = "intrusion";
    String userid = "root";
    String password = "root";
    try
    {
        Class.forName(driver);
        Connection conn = DriverManager.getConnection(connectionUrl+database, userid, password);

        Statement st = conn.createStatement();

        st.executeUpdate("INSERT INTO registration (name,password,Gender,Mac_Address,Email,mobileNo) "
            +"VALUES ('"+uname+"','"+pwd+"','"+gender+"','"+mac_address+"','"+mail+"','"+mobileNo+"')");
        System.out.println("Insert Success");

        response.sendRedirect("home.jsp");
    }
    catch(Exception ex)
    {
        System.out.println(ex);
    }
}
}

```

Figure.2 Registration Controller

```

<body>
<form method="post" action="fileUploadController">
  <div id="main">
    <div id="header">
      <div id="logo">
        <div id="logo_text">
          <!-- class="logo_colour", allows you to change the colour of the text -->
          <h1><a href="index.html">HoneyPot Intrusion System<span class="logo_colour"></span></a></h1>
        </div>
      </div>
      <div id="menubar">
        <ul id="menu">
          <!-- put class="selected" in the li tag for the selected page - to highlight which page you're on -->
          <li class="selected"><a href="index.html">Home</a></li>
          <li><a href="home.jsp">LogOut</a></li>
        </ul>
      </div>
    </div>
    <div id="site_content">
      <div id="content">
        <!-- insert the page content here -->
        <h1>HoneyPot Intrusion Detection</h1>
        <table width="529" height="351" border="0" align="right">
        <tr>
        <td>&nbsp;</td>
        <td>&nbsp;</td>
        <td>&nbsp;</td>
        </tr>
        <tr>
        <td>&nbsp;</td>
        <td>&nbsp;</td>
        <td><table width="468" height="211" border="1">
          <tr>
            <td width="200">Select the File</td>
            <td width="8">&nbsp;</td>
            <td width="239"><input name="filePath" type="file"></td>
          </tr>
        </td>&nbsp;</td>

```

Figure.3 File Upload JSP

```

protected void doPost(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {
    String fileName = request.getParameter("filePath");
    System.out.println("fileName::"+fileName);
    String userName = "Elango";

    String driver = "com.mysql.jdbc.Driver";
    String connectionUrl = "jdbc:mysql://localhost:3306/";
    String database = "intrusion";
    String userid = "root";
    String password = "root";

    BufferedReader br = null;
    FileReader fr = null;

    DateFormat sdf = new SimpleDateFormat("yyyy/MM/dd HH:mm:ss");
    Date date = new Date();
    System.out.println(sdf.format(date).toString());

    String reason = "File Size Limit Exceeded";

    try {
        File file = new File("F:\\\\"+fileName);
        //br = new BufferedReader(new FileReader(FILENAME));
        fr = new FileReader(file);
        br = new BufferedReader(fr);

        long fileSize = file.length();

        System.out.println("File size in bytes is: " + fileSize);
        System.out.println("File size in KB is : " + (double)fileSize/1024);
        System.out.println("File size in MB is : " + (double)fileSize/(1024*1024));

        String sCurrentLine;
        System.out.println("fileSize::"+fileSize);
        if(fileSize<100)
        {

            while ((sCurrentLine = br.readLine()) != null)
            {

```

Figure.4 File Upload Controller

```

public void insertDataIntoSensor(String inputDatas,String fileName)
{
    String userName = "Elango";
    String driver = "com.mysql.jdbc.Driver";
    String connectionUrl = "jdbc:mysql://localhost:3306/";
    String database = "intrusion";
    String userid = "root";
    String password = "root";
    try
    {
        Class.forName(driver);
        Connection conn = DriverManager.getConnection(connectionUrl+database, userid, password);

        Statement st = conn.createStatement();

        st.executeUpdate("INSERT INTO FileUpload (UserName,FileData,FileName) "
            +"VALUES ('"+userName+"','"+inputDatas.trim()+"','"+fileName+"')");
        //System.out.println("Insert Success");

        //response.sendRedirect("index.jsp");
        st.close();
        conn.close();

    }
    catch(Exception ex)
    {
        System.out.println(ex);
    }
}

```

Figure.5 File Upload Controller

```

<body>
<form method="post" action="fileDownloadController">
  <div id="main">
    <div id="header">
      <div id="logo">
        <div id="logo_text">
          <!-- class="logo_colour", allows you to change the colour of the text -->
          <h1><a href="index.html">Honeypot Intrusion System<span class="logo_colour"></span></a></h1>
        </div>
      </div>
    <div id="menubar">
      <ul id="menu">
        <!-- put class="selected" in the li tag for the selected page - to highlight which page you're on -->
        <li class="selected"><a href="index.html">Home</a></li>
        <li><a href="home.jsp">LogOut</a></li>
      </ul>
    </div>
    <div id="site_content">
      <div id="content">
        <!-- insert the page content here -->
        <h1>HoneyPot Intrusion Detection</h1>
        <table width="529" height="351" border="0" align="right">
        <tr>
        <td>&nbsp;</td>
        <td>&nbsp;</td>
        <td>&nbsp;</td>
        </tr>
        <tr>
        <td>&nbsp;</td>
        <td>&nbsp;</td>
        <td><table width="468" height="211" border="1">
        <tr>
        <td width="200">Search the File</td>
        <td width="8">&nbsp;</td>
        <td width="239"><input name="filePath" type="text"></td>
        </tr>
        <tr>
        <td>&nbsp;</td>

```

Figure.6 File Download JSP

```

protected void doPost(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

    String requestFileName = request.getParameter("filePath").toString();
    ResultSet resultSet = null;

    String driver = "com.mysql.jdbc.Driver";
    String connectionUrl = "jdbc:mysql://localhost:3306/";
    String database = "intrusion";
    String userid = "root";
    String password = "root";
    String fileData = "";
    try
    {
        Class.forName(driver);
        Connection conn = DriverManager.getConnection(connectionUrl+database, userid, password);

        conn.createStatement();
        Statement st = conn.createStatement();
        resultSet = st.executeQuery("select UserName,FileName,FileData from fileupload where FileName='"+requestFileName+"'");

        while(resultSet.next())
        {
            fileData = resultSet.getString("FileData");
            System.out.println("fileData:"+fileData);
        }
        conn.close();
    }
    catch(Exception ex)
    {
        System.out.println(ex);
    }
}

```

Figure.7 File Download Controller

```

protected void doPost(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException
{
    String name = request.getParameter("userName").toString();
    String pwd = request.getParameter("password").toString();
    try
    {
        StringBuilder sb = new StringBuilder();
        InetAddress ip;

        ip = InetAddress.getLocalHost();

        NetworkInterface network = NetworkInterface.getByInetAddress(ip);
        byte[] mac = network.getHardwareAddress();
        System.out.print("MAC address : ");

        for (int i = 0; i < mac.length; i++) {
            sb.append(String.format("%02X%s", mac[i], (i < mac.length - 1) ? "-" : ""));
        }
        System.out.println(sb.toString());

        String dbName = "";
        String dbPwd = "";
        String driver = "com.mysql.jdbc.Driver";
        String connectionUrl = "jdbc:mysql://localhost:3306/";
        String database = "intrusion";
        String userid = "root";
        String password = "root";
        Connection connection = null;
        Statement statement = null;
        ResultSet resultSet = null;
        DateFormat sdf = new SimpleDateFormat("yyyy/MM/dd HH:mm:ss");
        Date date = new Date();
        System.out.println(sdf.format(date));
        Statement st = null;
        String reason="Non-Registered User";

        String mac_Address = "";
    }
}

```

Figure.8 Login Controller

3 Output

HoneyPot Intrusion Detection	
Registration	
Name	<input type="text"/>
Password	<input type="password"/>
Gender	Male ▾
Mac Address	0A-00-27-00-00-1A
E-mail	<input type="text"/>
Mobile No	<input type="text"/>
<input type="button" value="Submit"/> <input type="button" value="Reset"/>	

Figure.9 Registration Page

These above figures from Figure.1 to Figure.3 represents the code of the registration page, where it shows how any user can enter the information to register in here and it access through the MAC address of each user, and the Figure.9 shows the application after its running on the server.

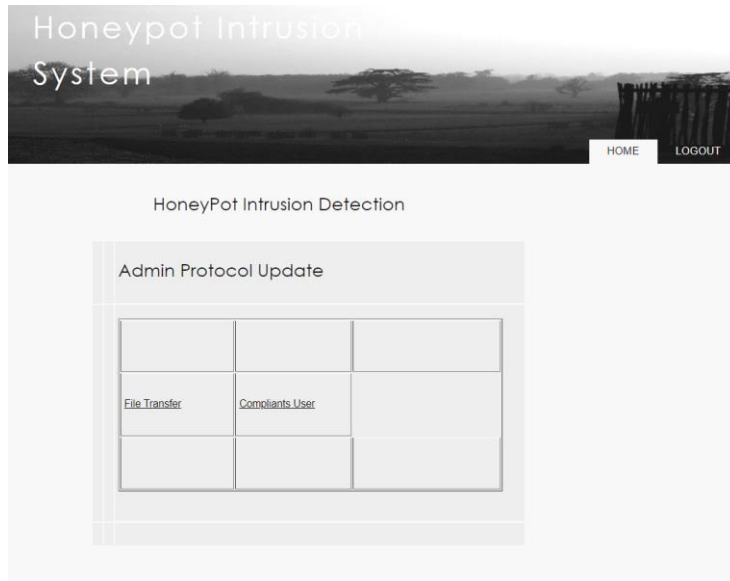


Figure.10 Admin page

HoneyPot Intrusion Detection

S.No	UserName	LoggedTime	Reason
1	test	2019/11/20 15:12:41	Non-Registered User
2	Elango	2019/11/20 15:17:45	File Size Limit Exceeded
3	gokul	2019/11/20 15:36:29	Non-Registered User
4	test	2019/11/23 21:46:12	Non-Registered User
5	test	2019/11/27 09:48:17	Non-Registered User
6	Joey	2019/11/29 08:26:20	Non-Registered User
7	Joey	2019/11/29 08:26:20	Non-Registered User
8	Joey	2019/11/29 08:26:20	Non-Registered User

Figure.11 Admin Complaint Page

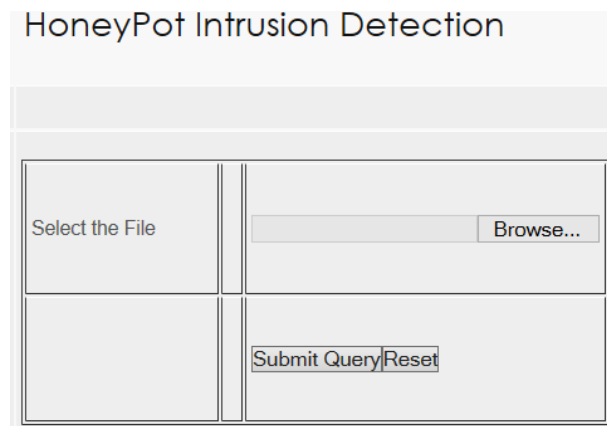
HoneyPot Intrusion Detection

Protocol Generator

Name	<input type="text"/>
Upload Size	500KB ▾
Download Size	1MB ▾
<input type="button" value="Submit"/> <input type="button" value="Reset"/>	

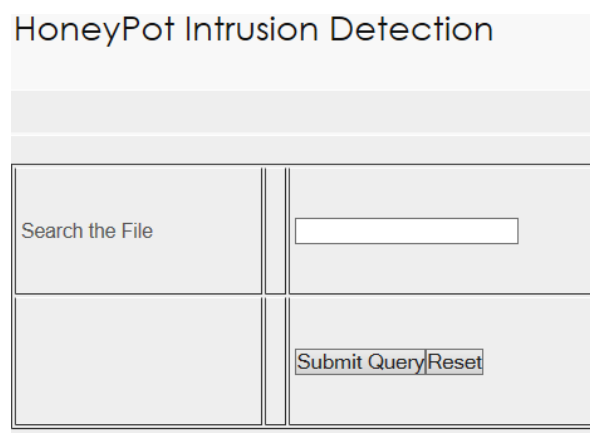
Figure.12 Admin file size increase page

The above figures from Figure.10 to Figure.12 represents the admin panel of the application, where only the admin has the access to increase size of the file which the user is uploading and he can also see whether a legitimate user is able to access or not.



HoneyPot Intrusion Detection	
Select the File	<input type="text"/> Browse...
	Submit Query Reset

Figure.13 File Upload Page



HoneyPot Intrusion Detection	
Search the File	<input type="text"/>
	Submit Query Reset

Figure.14 File Download Page

From the above figures, the Figure.13 and 14 represents the file upload and file download page of the user. In here only we can be able to upload and download a text file.

References

- [1] Guru99.com, 2019. [Online]. Available: <https://www.guru99.com/jsp-database-connection.html>. [Accessed: 11- Dec- 2019]
- [2] N. Minh, "JSP Servlet JDBC MySQL Create Read Update Delete (CRUD) Example", Codejava.net, 2019. [Online]. Available: <https://www.codejava.net/coding/jsp-servlet-jdbc-mysql-create-read-update-delete-crud-example>. [Accessed: 11- Dec- 2019].