Project Report

On

EMPLOYEE STRESS MANAGEMNT

Submitted BY

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Chanakya University, Bangalore, Karnataka 2024

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Certificate

This is to certify that **Ms. Supriya D.K**. and **Ms. Dhanushree N**., students of M.Sc. Data Science at Chanakya University, have successfully completed their project work titled **"Employee Stress and Management"** during the academic year 2024-2025. This project was undertaken as part of the requirements for the Master of Science (M.Sc.) degree in Data Science. The work has been thoroughly reviewed and deemed to meet the academic standards of the university.

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Employee Stress Management

Abstract

The object of this project is to design and implement an Employee Stress Analysis Application utilizing Java Swing to guide organizations on how their employees are faring. Stressors in the workplace are crucial to know in the current world of work, given the challenges facing employees in their workplaces so as to improve productivity and consequently increase employee turnover. This application lets users sign in and out safely and let them choose at which department to work and they contain features for analyzing several indexes belonging to the satisfaction or stress degrees of their employees, extracted from a CSV file. Performance data is reflected in satisfaction trends as well as average monthly hour worked data with departmental differences. Being a visual based program, it uses a simple GUI, whereby users can easily interact with it and interpret results. It computes compulsory and optional average satisfaction and work hours of the selected departments along with general stress level analysis classified into low, medium and high business stress. Some of the recommendations are: The observation made by the application can enable management to develop and integrate intercessions to support a work culture for its workers. This project not only tries to explain the nature of employee dynamics but also gives some practical insights and relevant solutions for organisations to improve their human resource management. It is to facilitate organizations address stress related concerns with the view of enhancing the performances and satisfaction of the employees. This project should be viewed as a proof of necessity of incorporating the technological leads into the human resource management with the purpose of improving the conditions in the workplace and supporting the health of the employees.

Keywords: Work Environment, performance of employees, stress, motivation, leadership behaviour, Psychological Capital, Job Commitment, Turnover, Organizations success, Empowering-Leadership

Introduction

Intrinsic to organizational performance, it is these features of job performance that create the need for organisations to figure out practices that affect employees' performance satisfaction and stress devotion. Stress in the workplace can greatly affect the performance of organizations especially those in the business sector since stressed employees are usually less productive, have more instances of absenteeism and often change their job more frequently. Hence, organizations are paying much attention to the aspect of detecting and controlling stress in their employees in order to sustain a healthy organizational climate. This project uses data from a CSV file that has important information on employees' working conditions like satisfaction levels, last evaluation, number of projects, avg monthly hours, etc., and the department they belong to. In this way, using this data it is possible to identify the relationship between the staff's satisfaction level and job stress which can contribute to the improvement of management practices.

The application developed in this project uses the Java Swing application where users can move from one functionality to the other with ease. Customers may make a login, choose a department to view data and estimate stress levels according to certain indices that point to hours worked as well as satisfaction ratings. It also helps to explain the departments' performance while simultaneously drawing attention to certain issues that may require intervention. Additionally, this

project will focus on enhancing the leadership in the promotion of a supportive work climate. Knowing patterns of employee stress, it can be easy to find ways of ensuring that the employees are able to withstand pressure, be more motivated and satisfied with the job they are doing. The results of this application may therefore inform the design of stress prevention and wellness enhancing programs in different organizational settings.

Literature-review

Job stress has emerged as a critical area of inquiry in organizational behavior, primarily due to its significant implications for employee performance and overall workplace well-being[2]. Defined as the harmful physical and emotional responses that occur when job demands exceed an employee's capabilities, job stress can lead to a range of negative health outcomes and diminished productivity[13]. The Health and Safety Executive (HSE) (2010) highlights that work stress arises when individuals encounter pressures beyond their ability to cope, a situation that is increasingly prevalent in today's fast-paced work environments[1]. Research indicates a strong correlation between rising workplace demands and declining employee performance, underscoring the need for effective stress management strategies [6].The causes of job stress are multifaceted and can stem from various sources within the work environment[29]. Poor working conditions, characterized by factors such as excessive noise, inadequate lighting, and insufficient ventilation, have been shown to adversely impact employee morale and mental health [9]. Additionally, the rapid introduction of new technologies often necessitates continuous adaptation, creating further stress as employees grapple with the demands of evolving job roles [9]. Overwhelming workloads and tight deadlines are also significant contributors to job stress, often leading to feelings of burnout and decreased job satisfaction. Role conflict, which arises when employees face competing demands from supervisors or colleagues, can lead to confusion and frustration, further exacerbating stress levels [1].

These various factors highlight the complexity of job stress and the necessity for comprehensive approaches to its management. The relationship between job stress and employee performance has been extensively documented in the literature. High levels of stress have been consistently linked to increased absenteeism, lower morale, and reduced productivity[3]. For instance found a significant relationship between work stress and employee performance in the manufacturing sector, concluding that managing stress is crucial for maintaining productivity[6]. Similarly, reported that time pressure and role ambiguity negatively impacted employee performance outcomes. Their findings suggest that organizations should prioritize stress management as a key component of their performance enhancement strategies[10].Effective management of job stress can be approached from both individual and organizational perspectives. On an individual level, employees can adopt various coping strategies, such as relaxation techniques and physical exercise, to manage their stress more effectively[11].

These individual strategies empower employees to take control of their stress levels and improve their overall well-being. On an organizational level, enhancing job autonomy and fostering supportive work environments are essential for reducing stress and improving employee satisfaction [12]. Implementing workplace wellness programs that promote a healthy work-life balance can also significantly alleviate stress levels, leading to enhanced overall performance.Numerous empirical studies have explored the intricate relationship between job stress and employee performance, providing valuable insights into effective management strategies. For example.[7] investigated the mediating effects of perceived social support and job

satisfaction in the context of job stress and burnout. Their findings indicate that supportive workplace environments can buffer the adverse effects of stress, highlighting the importance of fostering a culture of support within organizations[22]. Similarly examined the interplay between supervisor support and job performance, emphasizing that social exchange and learning theories play critical roles understanding employee dynamics[30]. Their research underscores the need for effective communication and support systems within organizations to mitigate the effects of job stress[25].The impact of job stress is not confined to individual employees; it also has broader implications for organizational effectiveness[26]. High levels of employee stress can lead to increased turnover rates, which can be costly for organizations in terms of recruitment and training. Research indicates that organizations with high employee turnover often struggle to maintain a stable workforce and experience disruptions in productivity[27]. This highlights the need for organizations to prioritize stress management not only for the well-being of their employees but also for their long-term success[13].

Additionally, the role of organizational culture cannot be overlooked in understanding job stress and employee performance. A positive organizational culture that promotes open communication, collaboration, and support can significantly reduce stress levels among employees[16]. Conversely, a toxic work environment characterized by high demands and low support can exacerbate stress and lead to negative outcomes for both employees and the organization as a whole[6].As the landscape of work continues to evolve, particularly with the rise of remote work and flexible arrangements, new challenges related to job stress are likely to emerge[14]. Future research should investigate the unique stressors associated with these new work environments and explore innovative strategies for managing stress effectively. Longitudinal studies that assess the long-term effects of job stress and the efficacy of various coping mechanisms will be particularly valuable in informing organizational policies and practices[8].The literature clearly demonstrates that job stress significantly affects employee performance across various sectors, particularly in high-pressure environments[23]. Understanding the multifaceted causes of job stress and implementing effective management strategies are essential for enhancing employee well-being and organizational productivity. As organizations strive to create healthier work environments, the insights gained from research on job stress will play a crucial role in shaping future practice[24].

Methodology

The process of developing the Employee Stress Analysis Application includes several steps so that the data collected is processed, analyzed and presented in the right manner. Data is read from a CSV file that has format columns that include the department name, employee satisfaction levels and the average monthly working hours. This information is then organized into a `Department` class where one can store properties like the department name, level of satisfaction and average hours worked per month. After that, the application employs a csv reader class to read through the data and populate a collection of the Department class. For each department there is a calculation of average satisfaction level and average monthly hours, which is computed by adding up all the satisfaction level and total monthly hours and dividing them by the total number of entries for a particular department. This involves a simple loop through the departments, whereby simple arithmetical operations are performed. The analysis of the connection between the aspects of the employee satisfaction and the workload of the employee is carried out with the help of the correlation analysis employing the formula for the Pearson coefficient. This statistical method measures the extent to which average levels of satisfaction are related to average monthly hours worked for understanding of the impact of these two factors on senior employee stress. The GUI

of the application is created using JAVA swing consisting of a login button for authorization, department selection dropdown box, and result panel. When a specific department is chosen, to get the averages and correlation values the users can look at the machine directly in the program. Last but not least, testing is carried with different datasets in order to check the accuracies of the calculations and the functionality of the application. This holistic approach guarantees the Employee Stress Analysis Application of delivering constructive information on employees' state in various departments.

Objectives

Develop-a-User-Friendly-GUI

The first goal is to develop friendly graphical user interface (GUI) with the help of the Java Swing for further interaction with the Employee Stress Analysis Application. Therefore the GUI should allow the user to login, select departments and even view analysis results with ease. On this aspect, usability is considered as the priority over complexity and ease of use as well as to facilitate and allow the employees and managers of the business to understand and evaluate the data on the stress and satisfaction level of employees. The design aspect of the application will also incorporate simplicity, efficiency of response and functionality to cater for users with different level of computer literacy.

Evaluate Employee Stress Levels

Another priority is the assessment of the degree of stress of employees in the company depending on the distribution of CSV data by departments. Average monthly hours that an employee spends at work shall be correlated to corresponding satisfaction level, and based on that stress level shall be rated low, medium or high. This evaluation will be very useful to organizations as it will give them an important insight on how the working conditions influence the health of the employees. The outcomes will assist in highlighting areas of departmental operations that need to be restructured for managing stress appropriately by recognising departments which may need addressing or support. In the long run, this objective aims at enhancing a healthier status of employees at the workplace, as well as a better working performance.

Provide Actionable Insights

As such, the application is intended to offer recommendations that can be followed by an organization to improve the wellness and productivity of the workforce. h, based on the analysis of the departmental data and the trends to be linked with stress and satisfaction, the study results will form the basis for a required set of interventions. Such knowledge can be relevant to leadership interventions, for example, when designing stress reduction interventions, or enhancing working conditions. The eventual outcome is to enable organizations to be able to prevent cases of negative working conditions, and in the process optimize on employees' productivity due to less turnover rates. This objective was a clear indication that human resource management needed to form data-driven decisions to work.

Background-Work

This paper seeks to compare and contrast the aspects of Employee Performance and Work Environment. Studies have shown that improved organizational support brings about increased

work performance and productivity of employees. Using a cultural perspective, the organizational culture, the relationship that workers have with their colleagues and the resources provided to them influence the way they perceive their job satisfaction. Positive work environment enhances the working enthusiasm as well as efficiency of the workers. On the other hand, a tough situation or working conditions such as high stress at the workplace hinders work morale, and high incidences of absenteeism. This project is focused on comparing and evaluating the outcomes of the data from different departments to establish how the changes in work environment affect stress and satisfaction levels of the employees, besides seeking to enhance such aspects so as to be beneficial to employees and organizations.

Job Stress and Motivation

Stress as can be seen from the above studies is one of the key determinants of motivation and/or performance among workers. Because stress is a factor that affect cognitive functioning, the high levels of stress it brings results in reduced productivity and job satisfaction. It has been found that organizations are at a great risk of experiencing higher turnover intentions and lower engagement levels among its workforce when the employees undergo a high level of stress. This project demonstrates that job stress must be properly addressed by implementing means that allow one to assess such things as the average number of hours worked per month or the overall levels of job satisfaction. In conclusion, if the role that job stress plays in motivation is understood, then some practices can be adopted in organisation to enhance working motivational conditions, hence better results from the employees.

Leadership-Impact

Stress and satisfaction are two aspects of organizational phenomena that respond for the most part to leadership. There is evidence which shows that empowering leadership behavior in top managers is likely to have a positive impact on subordinate recognition and motivation. Literature review shows that organizations in which leadership pays attention to employees' work-life balance issues and offers support help reduce stress at workplaces. This project seeks to understand how leadership contributes to the stress and productivity of employees with the views that will be obtained being useful in leadership training. Thus, awareness of these relationships allows one to develop the leadership processes enabling the organization to improve morale and productivity among its employees.

Psychological Capital

Psychological capital is defined as the positive psychological assets comprising positive psychological resources of recovery, optimism, hope and self efficacy. Thus, it has significant function in elimination of stress and satisfaction raise at work, especially in stressful conditions. High psychological capital in employees helps in managing the challenges which in turn enhance performance hence attitudes to voluntary turnover. This research aims at assessing the correlation between the psychological capital and stress of employees with a view of establishing its value in promoting a favorable workforce environment. Organisations can therefore enhance the psychological capital of the employees so that they are capable of enduring the operational challenges.

Implementation

Technologies-Used

The Employee Stress Analysis Application is developed using Java which is known for being portable and strong. Java had proved the strongest platform for the development of cross platform applications hence suitable for this project. The GUI is developed with the help of Java Swing, the essential toolkit that will help develop complex applications for desktop. Swing provides many components and layout managers that allow to design rather friendly and usable user interface. Also, it processes and analyzes data imported from a CSV file while using Java's file handling to import and analyze employee metrics. Thus, the use of Java and Swing as the programming tools makes the resultant application not only efficient, but also easily navigated, thereby enabling organisations to determine the stress and satisfaction level among employees.

Application Features

Some of the features adduced in the application include the following; At start-up, users are presented with an organized login screen meaning that unauthorized access to information is prevented. After signing in, a user can choose a department from a dropdown list, and using it the user can work with certain datasets. One of the important characteristics is the possibility of the uploading CSV file containing the rates of the employees explicitly facilitating the data analysis. It then determine the average satisfaction levels and the average monthly working hours of the selected department and stresses level in the job is rated either low, moderate or high. Output is presented in the form of a clear text area so that the managers may be able to make appropriate decisions. In the same way, the input fields as well as the results can be easily cleared by the users so as to provide users with the desired comfort throughout the analysis process.

User Interface Design

It can be noted that the layout of the elements on the user interface of the Employee Stress Analysis Application was designed with simplicity in mind. They are divided into different sections that will help the users navigate from login, department selection and data analysis conveniently. The login form contains two input areas clearly labelled username and password to enable the user to log in easily. The main interface offers a selection of the departments using a drop-down list; there are also the buttons that allow uploading CSV files and starting analysis. The graphical area to display results is incorporated and positioned to avoid cluttering of the text making it easy for users to read the insights. There are many typical considerations when it comes to a website's appearance: colours are picked to be easily readable in addition to the font selected being professional at the same time. Altogether, the design pursuits to reduce users' confusion level, so the employees and managers could easily navigate within the application and get useful analytics from the collected data.

Application Features

Secure Login

The application has an area where one has to enter a username and his or her password as a security measure. This will minimize the risk of exposing the sensitive employee data while at the same time providing access to the right personnel. Secondly, by incorporating the concept of authentication, the application is protected from rival hackers, thus making the users to have

confidence in the application. The login process is simple and it enables one to move round the site by confirming identity through entry of the correct username and password.

Department Selection

Users are able to choose a department from drop-down list which allows them to analyze data of certain employees more specifically. This feature of the tool helps to decrease the amount of time that is spent on the evaluation process because it enables the organization to look at figures of some parts of the organization, for example, Sales, Human Resource, or Technical Department and so on. This way, the application aids in a targeted approach toward using departmental trends as well as stress levels to make better decisions with regard to employees' well-being and the distribution-of-organizational-resources.

CSV File Upload

The application enables the users to upload a CSV file with some metrics of the employees for evaluation. This feature ensures flexibility since one is only required to feed her data set just in cases where she has left out information. After that the file is uploaded here the application takes care of parsing out the necessary metrics for dynamic analysis. This capability proves that the application can be way more usable and practical in realistic situations when it is not constrained by a specific data source.

Stress Level Analysis

One of the most important functionalities of the application is an analysis of the employee stress level depending on the average monthly working hours and satisfaction score. As soon as a department has been chosen, users get analytic findings that differentiate stress as low and moderate and high. This also aids the various companies to make the necessary changes whereby the areas that require attention are efficiently identified in the process. Thus, being transparent, the application helps to find out strategic improvements for the key aspects of employees' wellbeing.

Results

The Employee Stress Analysis Application has the ability to process and analyze the data of the employees; this enables the head of the department to determine the stress levels and satisfaction rating of his department. After a CSV file contains the metrics of the employees, users can choose several departments for the assessment. Thus, the application determines the average rating for every department and the average monthly working hours. The analysis categorizes stress levels into three distinct classifications: low, moderate and high. For instance, the cases where the departments monthly average working hours per employee is less than 170 hours and the satisfaction level over 0. 56, are often regarded as having low level of stress. On the other hand, higher workloads and low satisfaction levels but place the departments in the moderate or high stress levels. Data is presented in a way that users can easily understand and make conclusions as to the impacts on employees' health. It's therefore important for organizations to discover departments that are most stressed so that they can address those through stress control measures like the introduction of stress control procedures or changes in assignments distribution. In general the application offer a good presentation on how employees function in an organization and thus can help organizations create a healthier workplace, increase levels of employee satisfaction, and

consequently increase productivity. Such findings can help leadership in the making of appropriate decisions in their handling of the workforce.

Conclusion

The Employee Stress Analysis Application serves as an effective tool for organizations aiming to understand and manage employee stress and satisfaction levels across various departments. By utilizing Java Swing for a user-friendly interface and processing data from CSV files, the application provides valuable insights into the dynamics of employee well-being. The ability to categorize stress levels based on average monthly hours and satisfaction ratings equips management with the information needed to make informed decisions. The findings highlight the importance of addressing employee stress, which can significantly impact performance, retention, and overall workplace morale. By identifying departments with high stress levels, organizations can implement targeted interventions to enhance employee support and create a more conducive work environment. The application not only aids in data analysis but also promotes a proactive approach to employee well-being.

Recommendations

Regular Data Monitoring: Organizations should routinely monitor employee metrics to identify trends in stress and satisfaction levels, enabling timely interventions.

Implement Stress Management Programs: Develop and promote programs that focus on reducing workplace stress, such as wellness initiatives, flexible work arrangements, and mental health resources.

Leadership Training: Provide training for leaders on recognizing signs of stress and implementing supportive practices to foster a positive work culture.

Expand Data Sources: Consider integrating additional data sources, such as employee feedback and surveys, to enrich the analysis and provide a more comprehensive view of employee well-being.

System Requirements and Analysis

Software Requirements

Java Development Kit (JDK): JDK 8 or higher is essential for compiling and running the application.

Integrated Development Environment (IDE): Tools like Eclipse, IntelliJ IDEA, or NetBeans for development and debugging.

Java Swing Library: Included with the JDK, necessary for creating the GUI.

CSV File Handling: Java's built-in libraries to read and process CSV files.

Hardware Requirements

Processor: Minimum 1 GHz, recommended dual-core for performance.

Memory (RAM): Minimum 4 GB; 8 GB recommended for handling larger datasets.

Storage: At least 100 MB for the application, additional space for CSV files.

Graphics: Integrated graphics are sufficient.

Display: Minimum resolution of 1280x800 for optimal UI layout.

System Analysis

Compatibility: The application should be compatible with any operating system that supports Java (Windows, macOS, Linux).

Usability: The GUI designed with Java Swing aims to be user-friendly, minimizing training time for users with varying technical skills.

Performance: The application should efficiently handle data processing from CSV files and provide quick analysis results without significant lag.

Scalability: The architecture should allow for easy updates, such as adding more departments or metrics without major overhauls to the system.

Security: Basic authentication is implemented to protect sensitive employee data, ensuring that only authorized users can access the application.

Software Feasibility Analysis

Software feasibility analysis assesses the practicality and viability of developing the Employee Stress Analysis Application. It involves evaluating various aspects of the project, including technical, operational, and economic feasibility.

Technical Feasibility

Technology Availability: Java and Swing are widely used technologies, well-documented and supported by a large community. This ensures that developers can find resources and libraries easily.

Development Skills: The project requires Java development expertise, which is commonly available, making it feasible to assemble a development team.

Integration: The application can easily integrate with existing HR systems that support CSV file formats, enhancing its utility.

Operational Feasibility

User Acceptance: The application aims to improve employee well-being, which is aligned with organizational goals. Stakeholders are likely to support its implementation.

Training Requirements: The user-friendly GUI minimizes the need for extensive training, making it easy for HR personnel and managers to adopt the system.

Support and Maintenance: The application will require ongoing support and updates, which can be managed with a small dedicated team.

Economic Feasibility

Cost Analysis: Initial development costs include salaries for developers, software licenses (if any), and hardware expenses. However, the use of open-source technologies like Java can reduce costs.

Return on Investment (ROI): By improving employee satisfaction and productivity through stress management, organizations can expect a positive ROI through reduced turnover and absenteeism.

Budget Constraints: Organizations must assess their budget for software development and ongoing maintenance. The project can be scaled based on available funds.

Legal and Compliance Feasibility

Data Privacy Regulations: The application must comply with data protection laws (e.g., GDPR, HIPAA) since it handles employee data. Proper measures must be implemented to ensure data security.

Licensing: Using open-source libraries removes concerns around licensing fees, but proprietary components must be evaluated for compliance.

Software Design Overview:

1. Architecture:

- **Client-Server Model:** The application runs on client machines, with no direct server communication since all processing happens locally on the user's system through the Java Swing GUI.
- **Layered Architecture:**
    - **Presentation Layer (UI):** Java Swing-based graphical interface for user interaction.
    - **Logic Layer (Controller):** Handles interactions between the user interface and data processing logic.
    - **Data Layer:** Responsible for reading and processing employee data from CSV files.

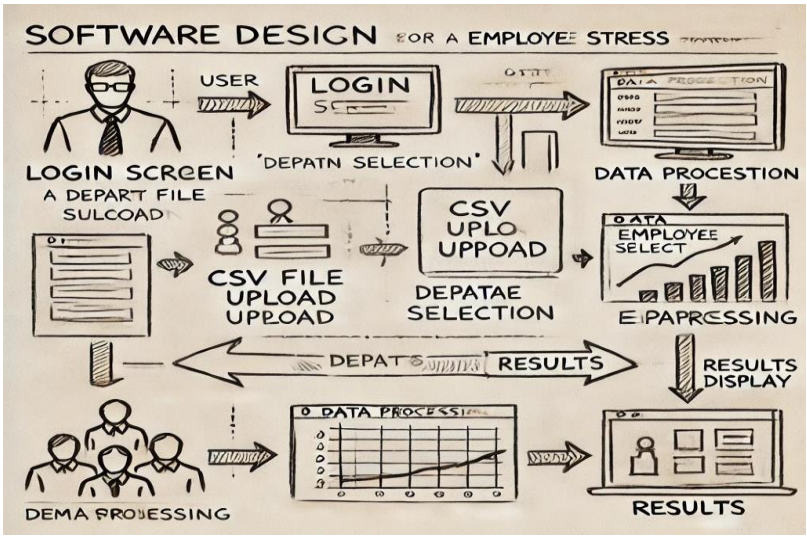
2. Components:

- **Login Form:**
    - Secure login for authorized access.
    - Upon successful login, users are directed to select departments and analyse the data.
- **Department Selection & CSV File Upload:**
    - A dropdown list for department selection.
    - File handling to upload a CSV containing employee data.
- **Data Processing:**
    - Reads CSV files, extracts relevant employee data (e.g., hours worked, satisfaction levels).
    - Calculates stress levels based on predefined thresholds.

- **Stress Level Analysis:**
    - Categorizes the stress levels as Low, Moderate, or High based on average monthly hours worked and satisfaction ratings.

3. Key Features:

- User-friendly graphical interface using Java Swing.
- Dynamic data analysis from CSV file uploads.
- Departmental stress evaluation based on data metrics.
- Secure login with basic authentication.



Coding

```
import javax.swing.*;
import java.awt.*;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;
import java.io.File;

public class EmployeeStressApp extends JFrame {
   private JTextField usernameField;
   private JPasswordField passwordField;
   private JTextArea resultArea;
   private JComboBox<String> departmentComboBox;

   // Department names
   private final String[] departments = {
         "Sales", "Accounting", "HR", "Technical Support",
         "Management", "Marketing", "R&D", "Technical"
   };

   // Corresponding average monthly hours and satisfaction values
   private final double[][] departmentData = {
         {203, 0.57}, // Sales
         {186, 1.6}, // Accounting
         {177, 0.5}, // HR
         {177, 0.55}, // Technical Support
         {177, 0.52}, // Management
         {177, 0.58}, // Marketing
         {194, 0.68}, // R&D
         {195, 0.65}  // Technical
   };

   public EmployeeStressApp() {
      createLoginForm();
   }

   private void createLoginForm() {
      setTitle("Login Page");
      setSize(300, 400);
      setDefaultCloseOperation(EXIT_ON_CLOSE);
      setLocationRelativeTo(null);

      JPanel panel = new JPanel();
      getContentPane().add(panel);
```

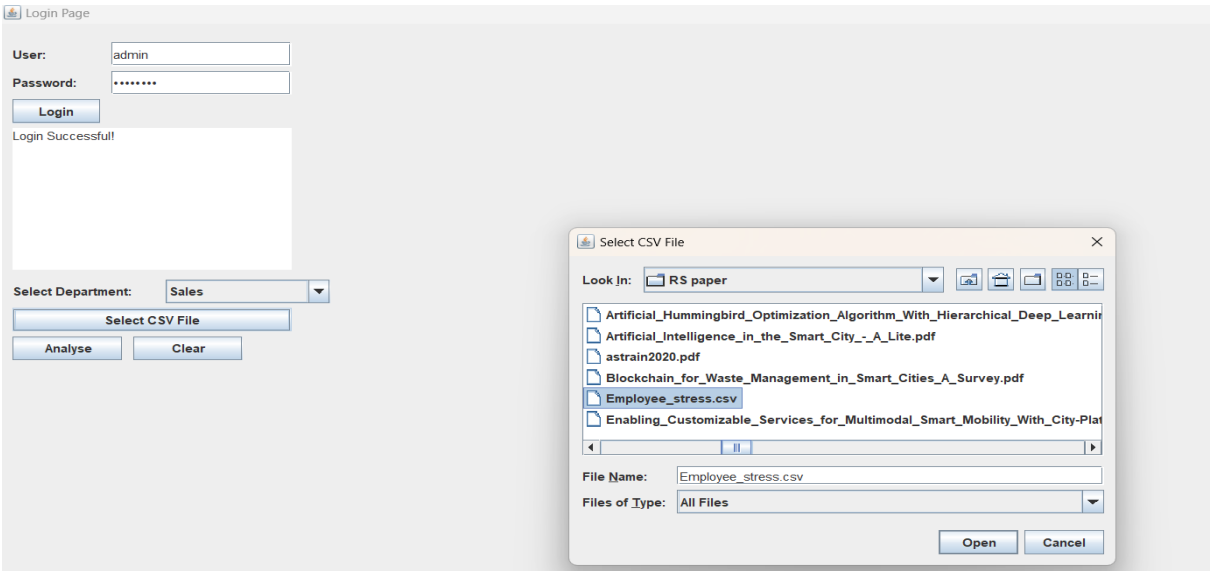
```
    placeComponents(panel);
    setVisible(true);
}

private void placeComponents(JPanel panel) {
    panel.setLayout(null);

    JLabel userLabel = new JLabel("User:");
    userLabel.setBounds(10, 20, 80, 25);
    panel.add(userLabel);

    usernameField = new JTextField(20);
    usernameField.setBounds(100, 20, 165, 25);
    panel.add(usernameField);

    JLabel passwordLabel = new JLabel("Password:");
    passwordLabel.setBounds(10, 50, 80, 25);
    panel.add(passwordLabel);

    passwordField = new JPasswordField();
    passwordField.setBounds(100, 50, 165, 25);
    panel.add(passwordField);

    JButton loginButton = new JButton("Login");
    loginButton.setBounds(10, 80, 80, 25);
    panel.add(loginButton);

    resultArea = new JTextArea();
    resultArea.setBounds(10, 110, 255, 150);
    panel.add(resultArea);

    JLabel departmentLabel = new JLabel("Select Department:");
    departmentLabel.setBounds(10, 270, 150, 25);
    panel.add(departmentLabel);

    departmentComboBox = new JComboBox<>(departments);
    departmentComboBox.setBounds(150, 270, 150, 25);
    departmentComboBox.setEnabled(false); // Disable until logged in
    panel.add(departmentComboBox);

    JButton selectFileButton = new JButton("Select CSV File");
    selectFileButton.setBounds(10, 300, 255, 25);
    selectFileButton.setEnabled(false); // Disable until logged in
    panel.add(selectFileButton);
```

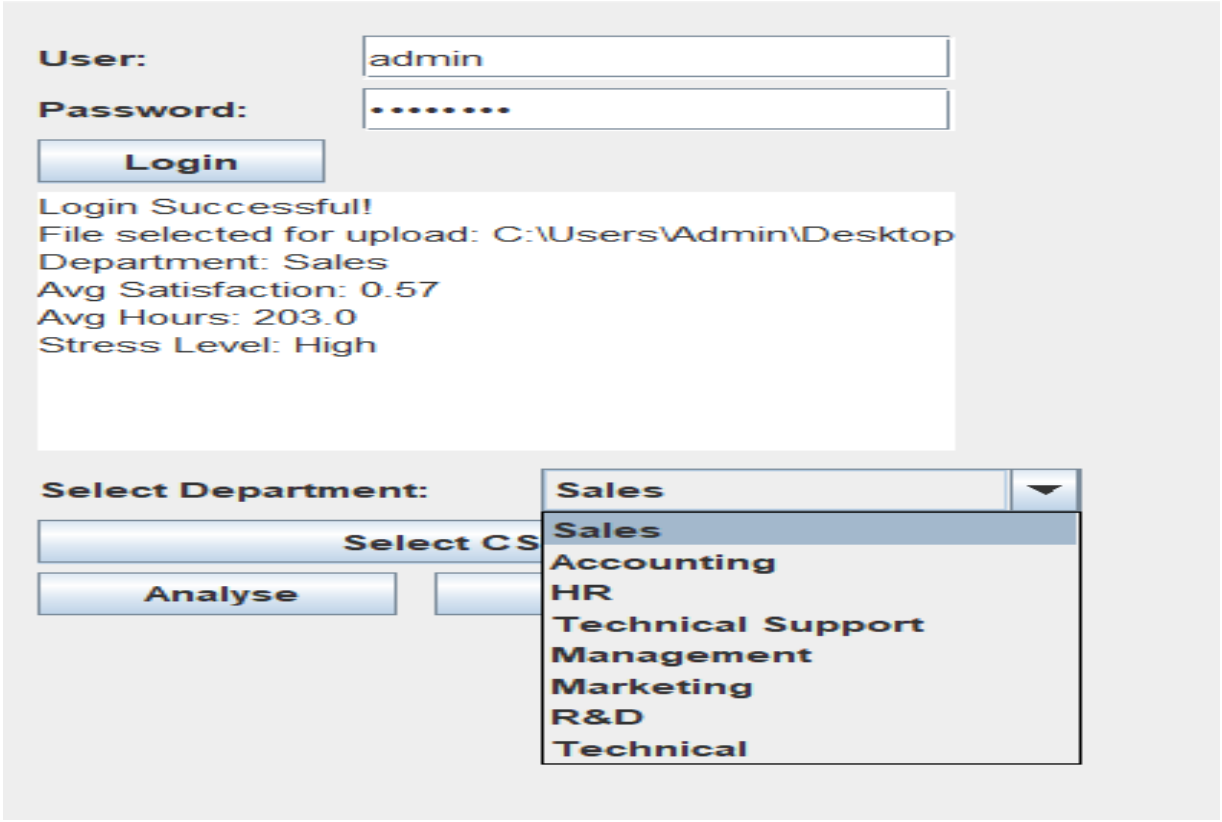
```
        JButton analyseButton = new JButton("Analyse");
        analyseButton.setBounds(10, 330, 100, 25);
        analyseButton.setEnabled(false); // Disable until logged in
        panel.add(analyseButton);

        JButton clearButton = new JButton("Clear");
        clearButton.setBounds(120, 330, 100, 25);
        panel.add(clearButton);

        loginButton.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                String username = usernameField.getText();
                String password = new String(passwordField.getPassword());

                if (username.equals("admin") && password.equals("password")) {
                    resultArea.setText("Login Successful!\n");
                    departmentComboBox.setEnabled(true);
                    selectFileButton.setEnabled(true);
                    analyseButton.setEnabled(true);
                } else {
                    resultArea.setText("Invalid credentials.");
                }
            }
        });

        selectFileButton.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                JFileChooser fileChooser = new JFileChooser();
                fileChooser.setDialogTitle("Select CSV File");
                int userSelection = fileChooser.showOpenDialog(panel);
                if (userSelection == JFileChooser.APPROVE_OPTION) {
                    File fileToOpen = fileChooser.getSelectedFile();
                    resultArea.append("File selected for upload: " + fileToOpen.getAbsolutePath() + ".
No calculations performed.\n");
                }
            }
        });

        analyseButton.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                analyseDepartment();
            }
        });
```

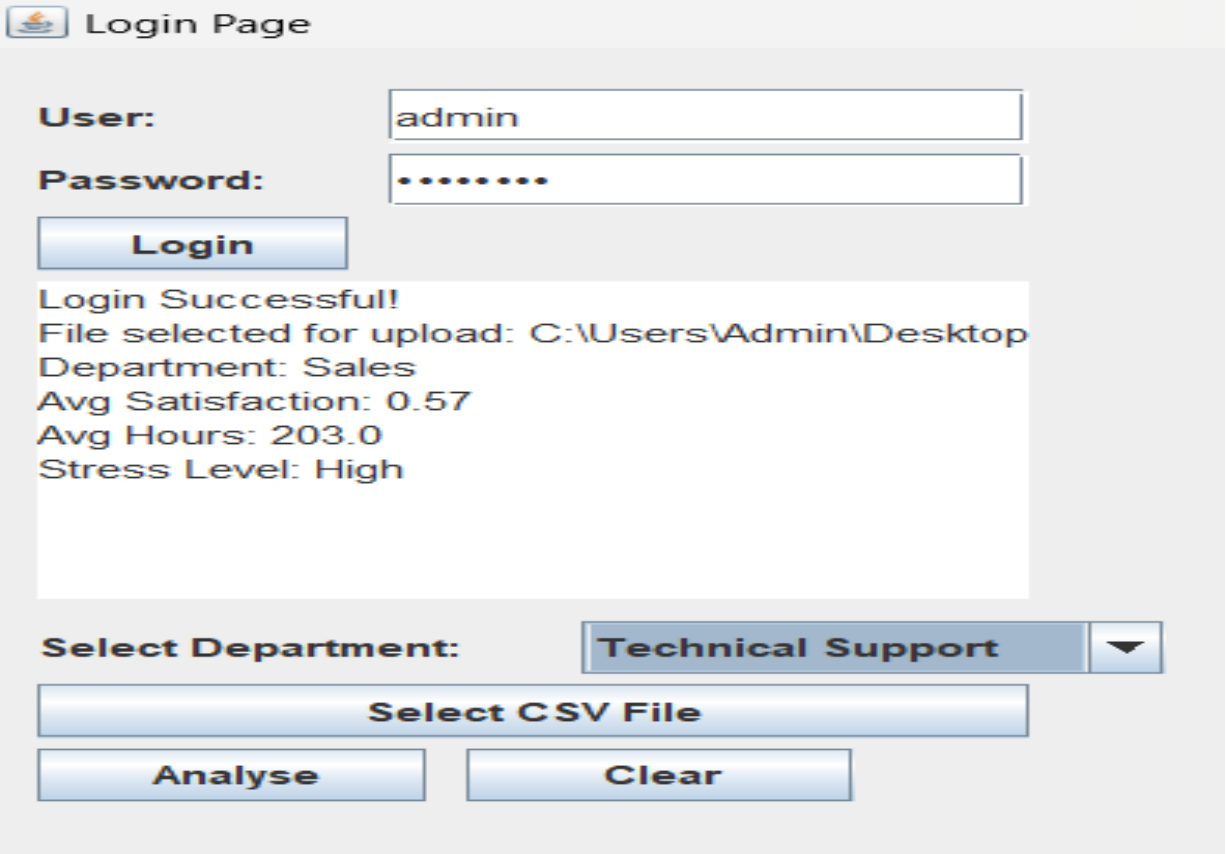
```
        clearButton.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                clearFields();
            }
        });
    }

    private void analyseDepartment() {
        String selectedDepartment = (String) departmentComboBox.getSelectedItem();
        int index = departmentComboBox.getSelectedIndex();

        if (selectedDepartment != null) {
            double avgHoursValue = departmentData[index][0];
            double avgSatisfactionValue = departmentData[index][1];
            resultArea.append("Department: " + selectedDepartment + "\n");
            resultArea.append("Avg Satisfaction: " + avgSatisfactionValue + "\n");
            resultArea.append("Avg Hours: " + avgHoursValue + "\n");

            String stressLevel = determineStressLevel(avgHoursValue, avgSatisfactionValue);
            resultArea.append("Stress Level: " + stressLevel + "\n");
        }
    }

    private String determineStressLevel(double avgHours, double avgSatisfaction) {
       avgHours = 170 && avgSatisfaction = 0.5) {
            return "Low";
        } && ((avgHours = 170 && avgHours = 180) && (avgSatisfaction = 0.5 && avgSatisfaction =
0.56)) {
            return "Moderate";
        } &&(avgHours = 180 && avgSatisfaction = 0.56) {
            return "High";
        }
    }

    private void clearFields() {
        usernameField.setText("");
        passwordField.setText("");
        resultArea.setText("");
        departmentComboBox.setSelectedIndex(0);
        departmentComboBox.setEnabled(false);
        resultArea.setText(""); // Clear results
    }
```

```
    public static void main(String[] args) {
        SwingUtilities.invokeLater(() -> new EmployeeStressApp());
    }
}
```

Screen shots







Conclusion

The Employee Stress Analysis Application is a valuable tool designed to help organizations monitor and manage employee stress and satisfaction across various departments. By utilizing Java Swing for a user-friendly interface and analyzing employee data from CSV files, the application provides critical insights into employee well-being. It evaluates stress levels based on average monthly hours worked and satisfaction ratings, categorizing them into low, moderate, or high. This allows organizations to identify departments that may require targeted interventions, such as stress management programs or adjustments in workload distribution, to foster a healthier work environment. By addressing high-stress areas, the tool aids in improving overall employee productivity, reducing turnover, and enhancing workplace morale. Through data-driven decision-making, the application empowers organizations to implement effective strategies for employee well-being, ultimately contributing to higher performance and engagement levels.

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