# BILLING AND HUMAN RESOURCES SYSTEM

*Khalid Diriye, Jeffrey Arcuri*

*IT 380 Systems Analysis and Design*

*Fall Semester 2016*

*Final Report Submission*

*11/25/2016*

# *Table of Contents*

# *Introduction*

For our project, we chose to do a comprehensive design for the BHR (Billing and Human Resources) system. The requirements of TEM (Time Entry Menu) require an outside vendor to embed the time entry menu into the physically implemented BHR system. TEM will also require many interactions between head developers at NCWG and management staff. In additional to just handling scheduling the BHR system needs to keep track of the entire services that are offered via the web application used to connect.

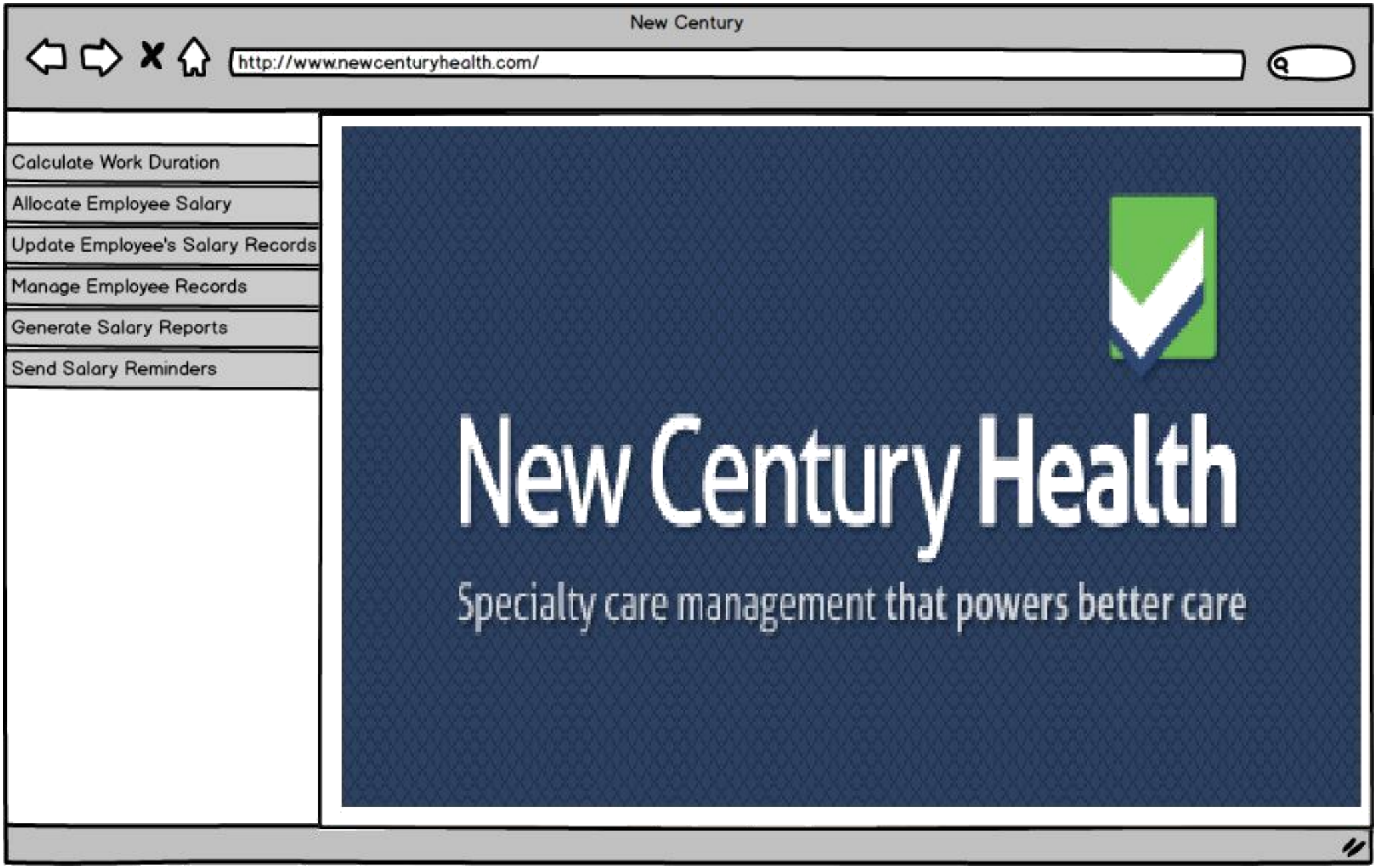
The project proved to be troublesome when it came to the shear amount of time taken going into details of what the maintenance the BHR web app would require. The amount of work requires significant break down by services. We had teams who worked on strictly BHR services, and another team dedicated to the TEM services. The following design document reflects all of those features and more.

For the companies that have never implemented a software based employee benefits system, this project could prove to be quiet a learning experience. We hope the following information is accurately portrayed a sample of how an employee benefit system would be coded into a company and become a reality.

Khalid Diriye is one of the project managers with 3 years of project management experience under his belt including experiences enterprise level implementations, human resource management, and many experiences in project planning with teams and other managers.

Jeff Arcuri is another one of the project managers with 6 years of billing experience. Jeff will is responsible for executing tasks and producing deliverables. Jeff with his excellent communication, status reporting, and risk management makes sure that projects that he works on are completed with great satisfaction.

*UI Design*


New Century
http://www.newcenturyhealth.com/
Calculate Work Duration
Allocate Employee Salary
Update Employee's Salary Records
Manage Employee Records
Generate Salary Reports
Send Salary Reminders
New Century Health
Specialty care management that powers better care

New Century

http://www.newcenturyhealth.com/HR/TimeIn

**Calculate Work Duration**

Select Employee

Select Department

Select Job Title

Time Out Duration

10/24/16

10/28/16

Submit

Employee Time Out

**Set Start Time: 10/24/16**
**Set End Time: 10/28/16**

**Employee Name: Jerry Y. Greg**

**Employee Department: Human Resources**

**Employee Job Title: Lead Human Resource Manager**

**Time's Clocked Out**

---

**10/24/16 >> 00:04:28 pm**

**10/25/16 >> 00:02:50 pm**

**10/26/16 >> 00:07:30 pm**

**10/27/16 >> 00:04:28 pm**

**10/28/16 >> 00:04:28 pm**

New Century

http://www.newcenturyhealth.com/HR/TimeOut

**Calculate Work Duration**

Select Employee

Select Department

Select Job Title

Time In Duration

10/24/16

10/28/16

Submit

Employee Time Out

**Set Start Time: 10/24/16**
**Set End Time: 10/28/16**

**Employee Name: Jerry Y. Greg**

**Employee Department: Human Resources**

**Employee Job Title: Lead Human Resource Manager**

**Time's Clocked In**

---

10/24/16 >> 00:05:28 am

10/25/16 >> 00:06:00 am

10/26/16 >> 00:07:30 am

10/27/16 >> 00:05:30 am

10/28/16 >> 00:04:30 am

New Century

http://www.newcenturyhealth.com/HR/WorkingTime

**Calculate Work Duration**

Select Employee

Select Department

Select Job Title

Time In Duration

10/24/16

10/28/16

Time Out Duration

10/24/16

10/28/16

Working Time Scheduled Time

Clock In Time

8 0 0 AM

Clock In Out

3 0 0 PM

Submit

Employee Time Out

**Set Start Time: 10/24/16**
**Set End Time: 10/28/16**

**Employee Name: Jerry Y. Greg**

**Employee Department: Human Resources**

**Employee Job Title: Lead Human Resource Manager**


**Time's Clocked In**

---

**10/24/16 >> 00:05:28 am**

**10/25/16 >> 00:06:00 am**

**10/26/16 >> 00:07:30 am**

**10/27/16 >> 00:05:30 am**

**10/28/16 >> 00:04:30 am**

**Time's Clocked Out**

---

**10/24/16 >> 00:04:28 pm**

**10/25/16 >> 00:02:50 pm**

**10/26/16 >> 00:07:30 pm**

**10/27/16 >> 00:04:28 pm**

**10/28/16 >> 00:04:28 pm**

TOTAL WORKING TIME: 7 Hours

New Century

http://www.newcenturyhealth.com/HR/empinformation

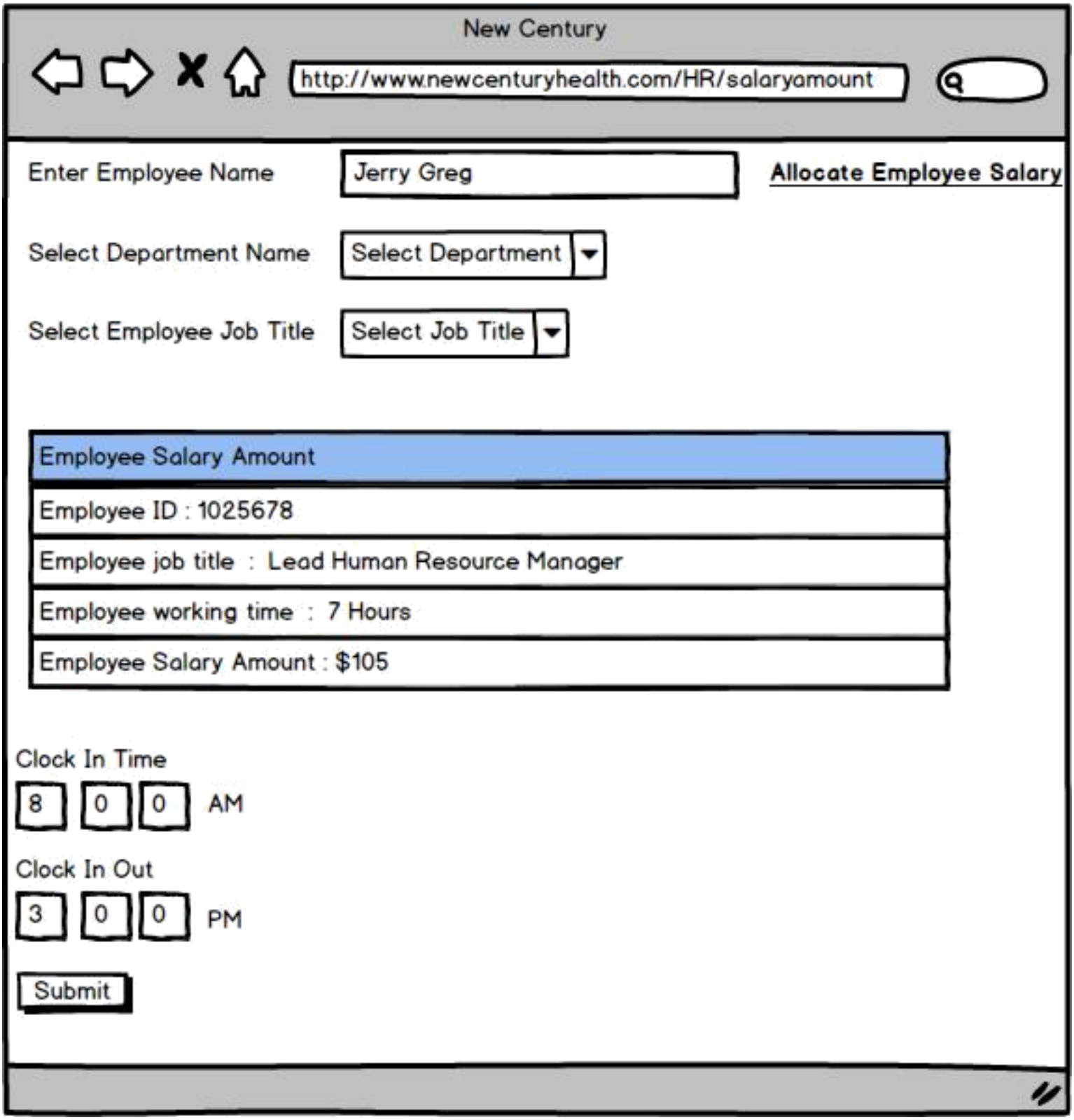
**Calculate Work Duration**

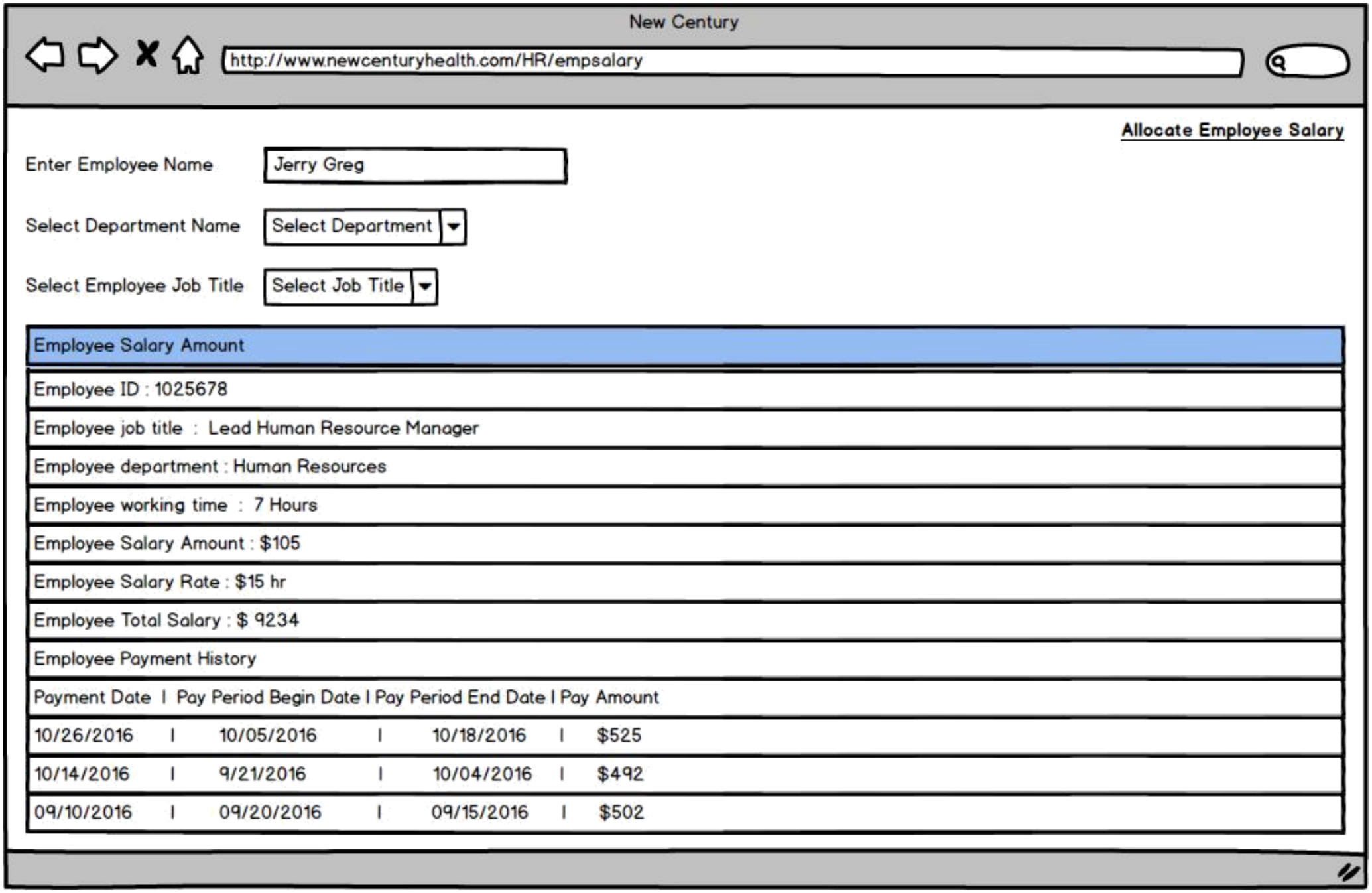
Enter Employee Name: Jerry Greg

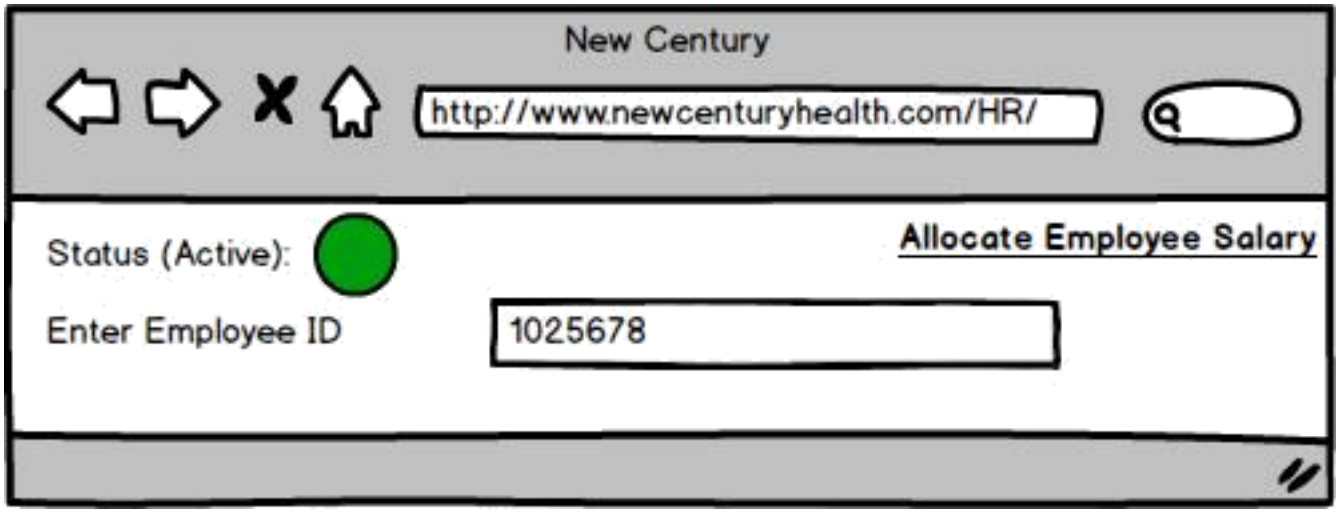
Select Department Name: Select Department

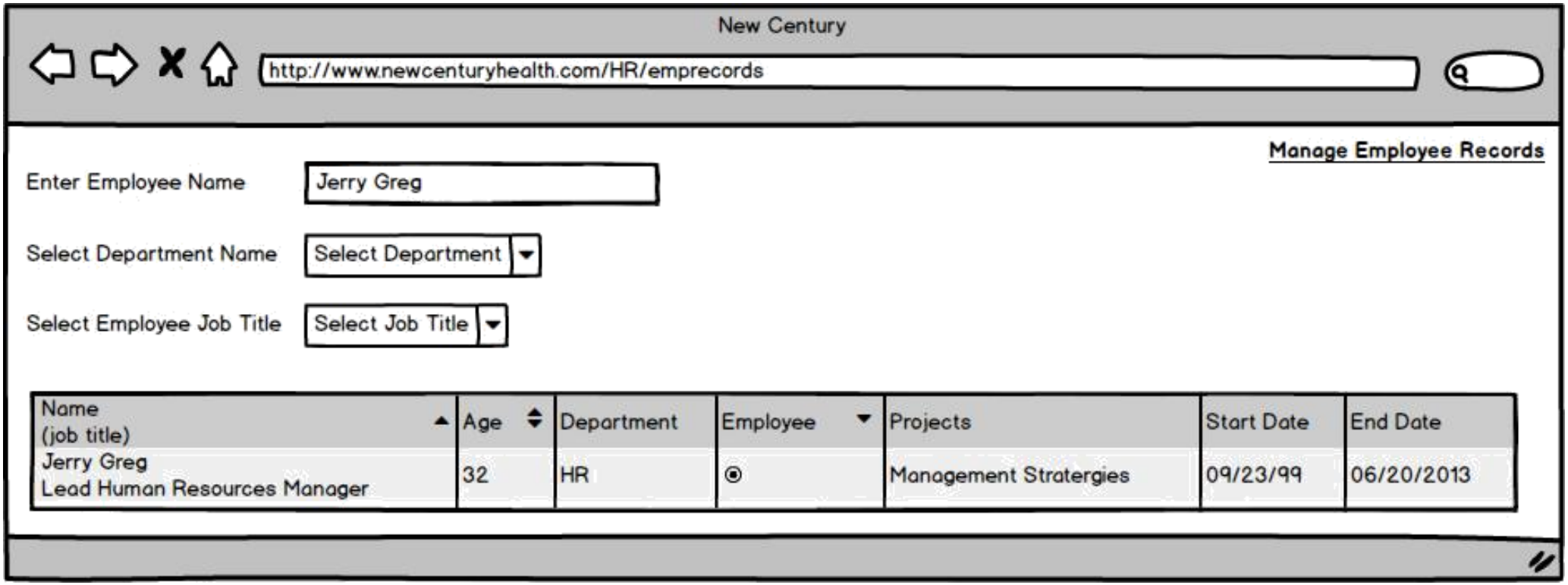
Select Employee Job Title: Select Job Title

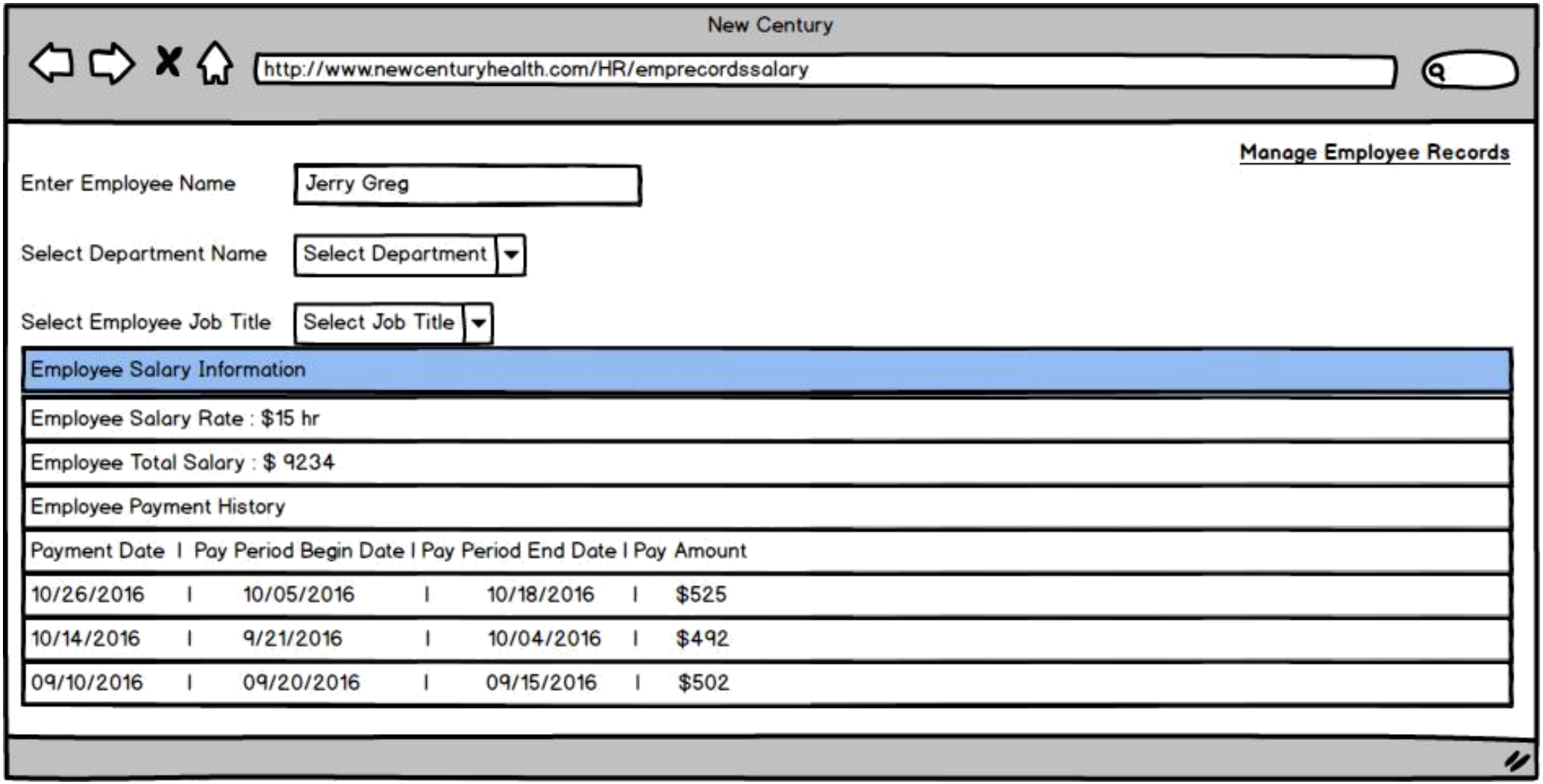

| Employee ID |
| --- |
| 1025678 |
| Employee first name |
| - Jerry |
| Employee last name |
| - Greg |
| Employee job title |
| - Lead Human Resource Manager |
| Employee department |
| - Human Resources |

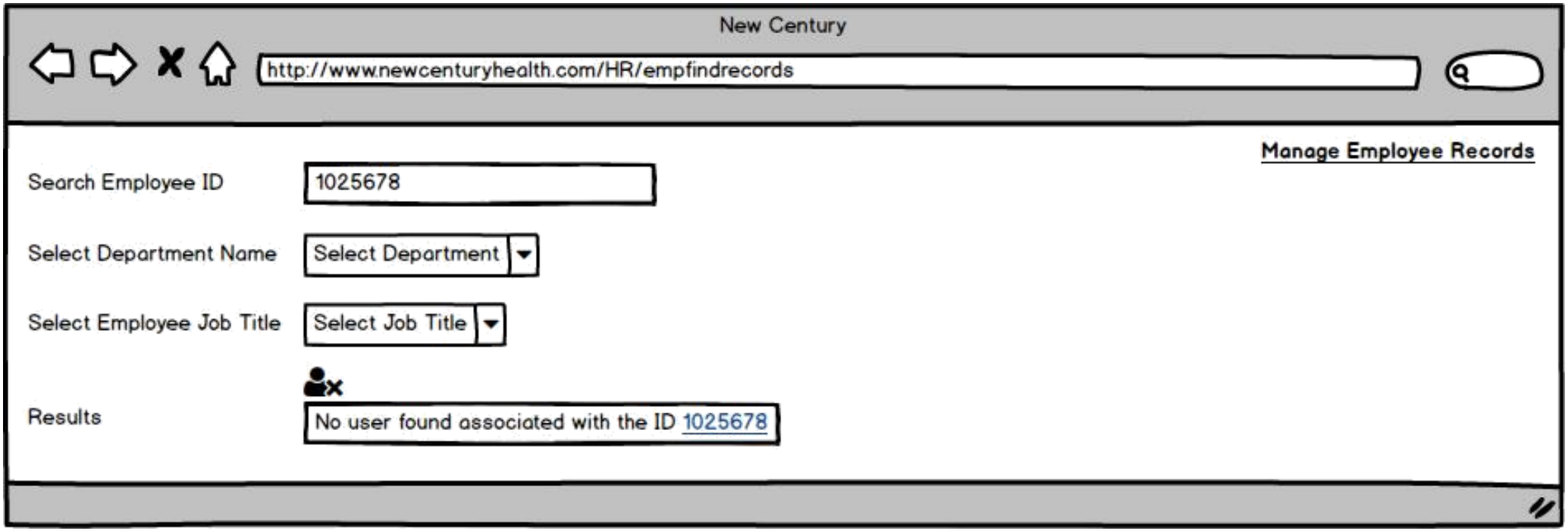

New Century
http://www.newcenturyhealth.com/HR/salaryamount
Enter Employee Name
Jerry Greg
Allocate Employee Salary
Select Department Name
Select Department
Select Employee Job Title
Select Job Title
Employee Salary Amount
Employee ID : 1025678
Employee job title : Lead Human Resource Manager
Employee working time : 7 Hours
Employee Salary Amount : $105
Clock In Time
8
0
0
AM
Clock In Out
3
0
0
PM
Submit

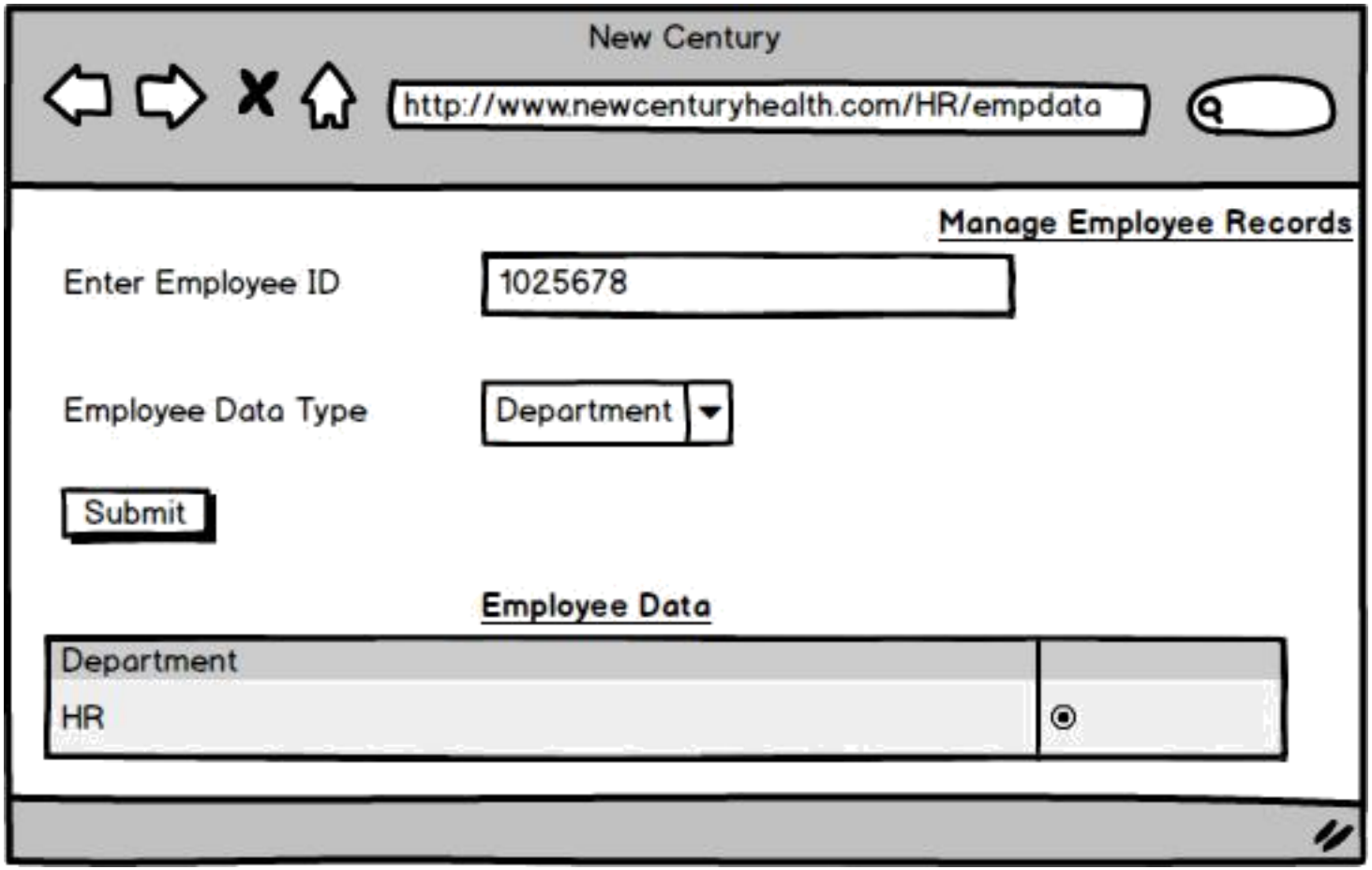

New Century
http://www.newcenturyhealth.com/HR/empsalary
Allocate Employee Salary
Enter Employee Name
Jerry Greg
Select Department Name
Select Department
Select Employee Job Title
Select Job Title
Employee Salary Amount
Employee ID : 1025678
Employee job title : Lead Human Resource Manager
Employee department : Human Resources
Employee working time : 7 Hours
Employee Salary Amount : $105
Employee Salary Rate : $15 hr
Employee Total Salary : $ 9234
Employee Payment History
Payment Date | Pay Period Begin Date | Pay Period End Date | Pay Amount
10/26/2016 | 10/05/2016 | 10/18/2016 | $525
10/14/2016 | 9/21/2016 | 10/04/2016 | $492
09/10/2016 | 09/20/2016 | 09/15/2016 | $502

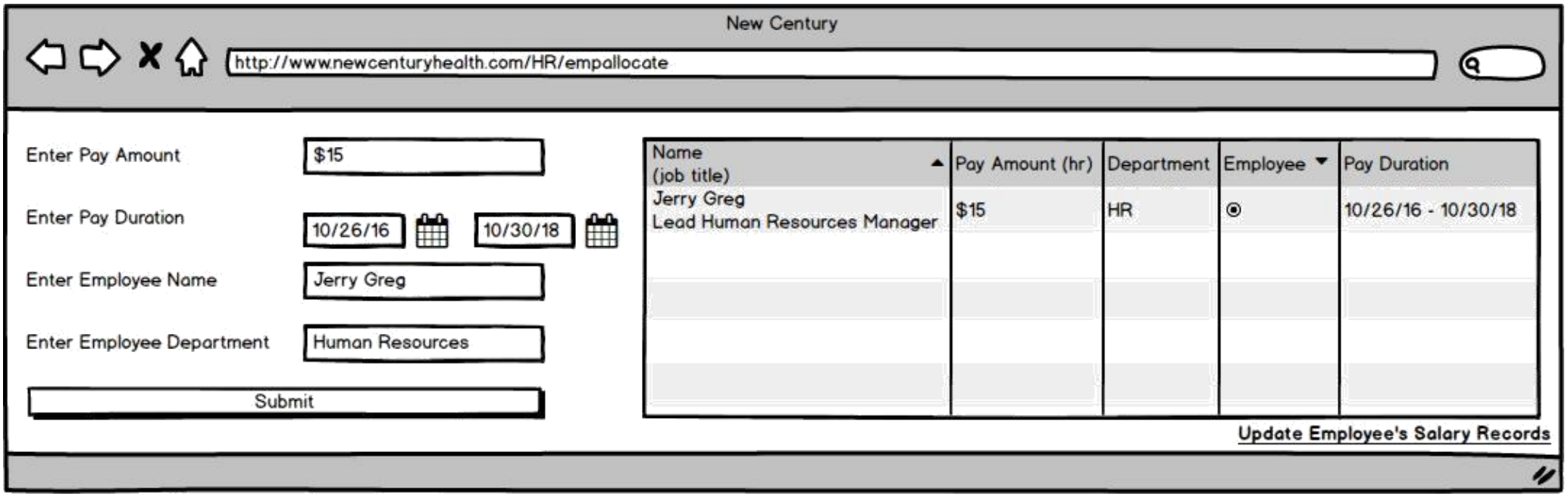

New Century
http://www.newcenturyhealth.com/HR/
Status (Active):
Allocate Employee Salary
Enter Employee ID
1025678

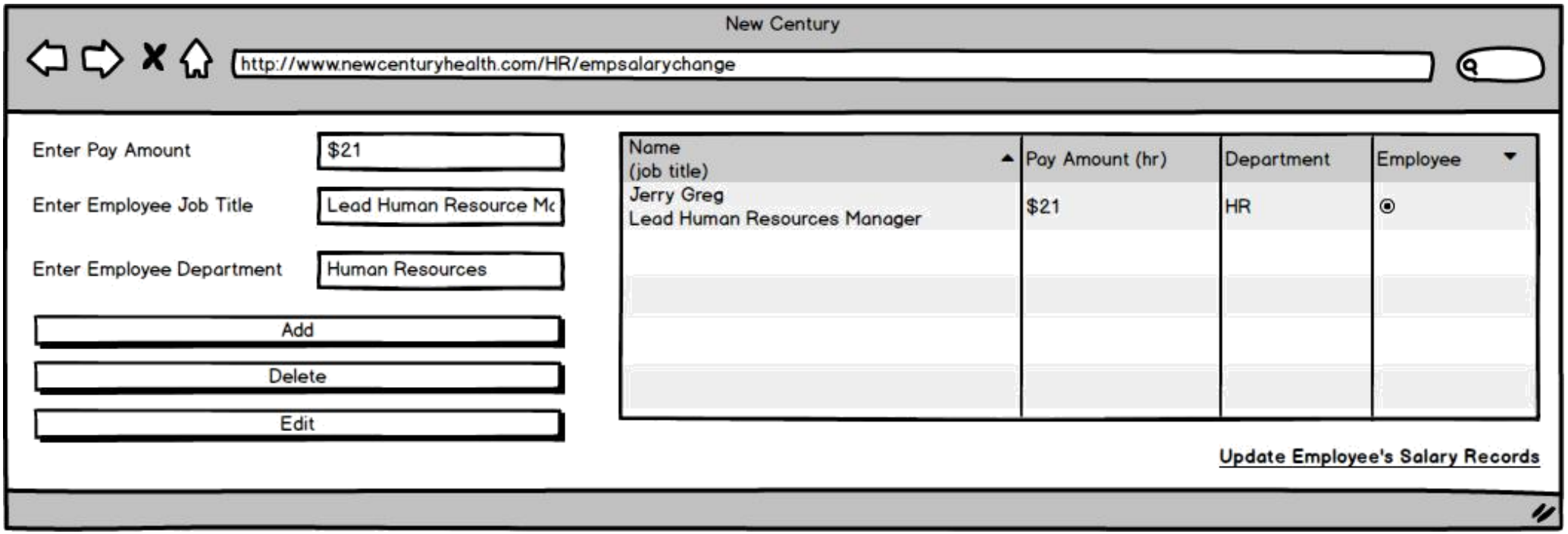

New Century
http://www.newcenturyhealth.com/HR/emprecords
Manage Employee Records
Enter Employee Name
Jerry Greg
Select Department Name
Select Department
Select Employee Job Title
Select Job Title
Name (job title)
Age
Department
Employee
Projects
Start Date
End Date
Jerry Greg
Lead Human Resources Manager
32
HR
Management Stratergies
09/23/99
06/20/2013


New Century
http://www.newcenturyhealth.com/HR/emprecordssalary
Manage Employee Records
Enter Employee Name
Jerry Greg
Select Department Name
Select Department
Select Employee Job Title
Select Job Title
Employee Salary Information
Employee Salary Rate : $15 hr
Employee Total Salary : $ 9234
Employee Payment History
Payment Date | Pay Period Begin Date | Pay Period End Date | Pay Amount
10/26/2016 | 10/05/2016 | 10/18/2016 | $525
10/14/2016 | 9/21/2016 | 10/04/2016 | $492
09/10/2016 | 09/20/2016 | 09/15/2016 | $502


New Century
http://www.newcenturyhealth.com/HR/empfindrecords
Manage Employee Records
Search Employee ID
1025678
Select Department Name
Select Department
Select Employee Job Title
Select Job Title
Results
No user found associated with the ID 1025678


New Century
http://www.newcenturyhealth.com/HR/empdata
Manage Employee Records
Enter Employee ID
1025678
Employee Data Type
Department
Submit
Employee Data
Department
HR


New Century
http://www.newcenturyhealth.com/HR/empallocate
Enter Pay Amount
$15
Enter Pay Duration
10/26/16
10/30/18
Enter Employee Name
Jerry Greg
Enter Employee Department
Human Resources
Submit
Name (job title)
Pay Amount (hr)
Department
Employee
Pay Duration
Jerry Greg
Lead Human Resources Manager
$15
HR
10/26/16 - 10/30/18
Update Employee's Salary Records


New Century
http://www.newcenturyhealth.com/HR/empsalarychange
Enter Pay Amount
$21
Enter Employee Job Title
Lead Human Resource Mc
Enter Employee Department
Human Resources
Add
Delete
Edit
Name (job title)
Pay Amount (hr)
Department
Employee
Jerry Greg
Lead Human Resources Manager
$21
HR
Update Employee's Salary Records

# *UI Design (Control Features)*

1. **Combo Box**

    - The combo box in this window allows the user to select from a variety of **existing** data related to the combo box search type. This decreases or almost eliminates the human error factor because the only data that can be selected is data related to the field.

2. **Calendar Controls**

    - Allow the user to set the employee's Time In and Time Out date duration based on the time entered the console to the right will display the data of dates set in the calendar.

3. **Text Input Box**

    - At the bottom, left hand of the window there exists Clock In and Clock Out input boxes. The integers entered these input boxes will send the system data to turn into working time. Error handling here is only based on whether the correct numbers are entered in. Based on the regular time schedule.

4. **Toggle Button**

    - One submit button to send the data entered to the console. Error handling is based on previous data inputs if no data has been enter the console will be blank and the user will receive a message box with a "No data entered" message.

5. **Picture Box**

    - The employee picture will show up here if found in the database otherwise default to the stock image.

6. **Console**

    - The console is where all the data is gathered from the previous inputs and displayed starting from the most top data entered all the way done the bottom. The console's height is adjustable expanding with the webpage.

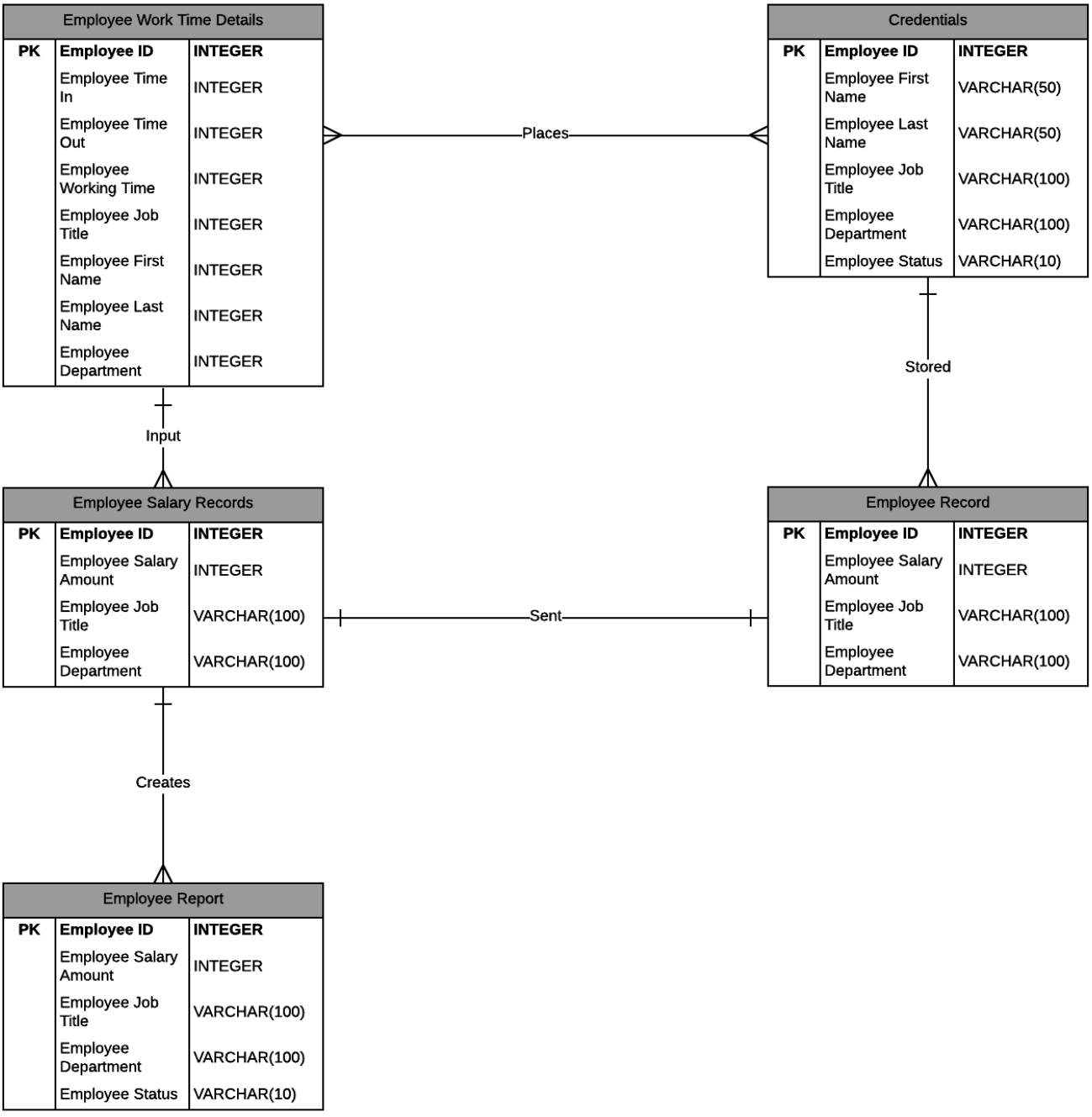
7. **On/Off Switches**

    - The switches disable certain portions of the website for a user if they don't want to view all content to allow for relevant information to be displayed for the user.

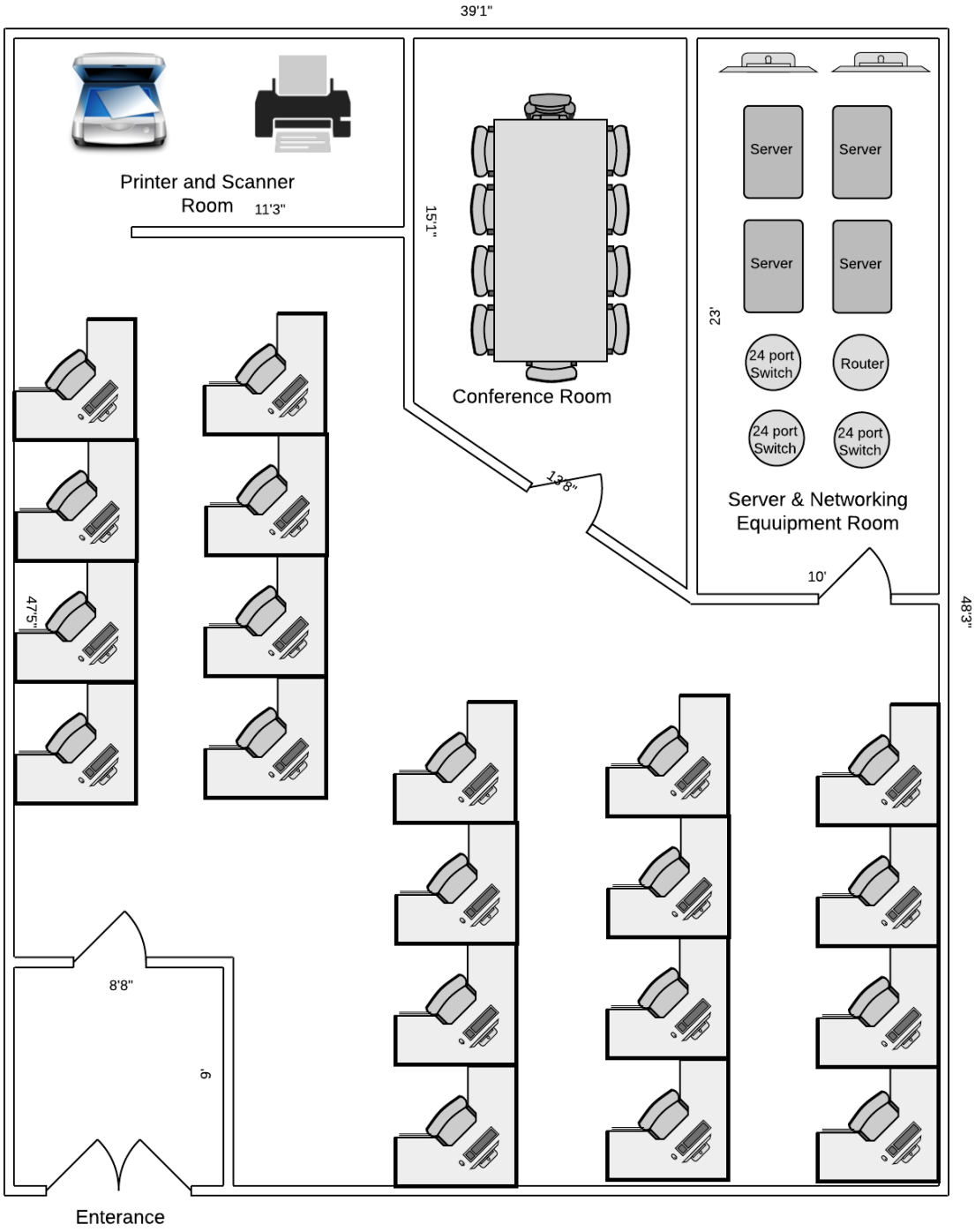
8. **Data Table Filters**

    - The data table filter at the top of Name and Employee allow the user to check for most recent users added into the data list

# *ERD*


Employee Work Time Details
PK
Employee ID
INTEGER
Employee Time In
INTEGER
Employee Time Out
INTEGER
Employee Working Time
INTEGER
Employee Job Title
INTEGER
Employee First Name
INTEGER
Employee Last Name
INTEGER
Employee Department
INTEGER
Places
Credentials
PK
Employee ID
INTEGER
Employee First Name
VARCHAR(50)
Employee Last Name
VARCHAR(50)
Employee Job Title
VARCHAR(100)
Employee Department
VARCHAR(100)
Employee Status
VARCHAR(10)
Stored
Input
Employee Salary Records
PK
Employee ID
INTEGER
Employee Salary Amount
INTEGER
Employee Job Title
VARCHAR(100)
Employee Department
VARCHAR(100)
Sent
Employee Record
PK
Employee ID
INTEGER
Employee Salary Amount
INTEGER
Employee Job Title
VARCHAR(100)
Employee Department
VARCHAR(100)
Creates
Employee Report
PK
Employee ID
INTEGER
Employee Salary Amount
INTEGER
Employee Job Title
VARCHAR(100)
Employee Department
VARCHAR(100)
Employee Status
VARCHAR(10)

# *System Architecture*



# System Architecture

## Summary

The three switches will allow for 24 devices to connect to them for a total of 72 potential ports available. This will allow for New Century to grow in the future. Currently the company needs 22 ports on a switch. 20 for each desktop, and 2 for the scanner and printer. The router will support up to four switches if needed.

Note: This floor layout does not include a bathroom or lunchroom because it is out of scope. This example does not consider dimensions. Instead, it gives an example of what New Centuries floor plan could look like

# *Implementation Plan*

**Training**

To assure that the transition to the new system will be smooth there will be training for all employees. This will help the employees understand how to enter data into the BHR system and how to attain information back from the system, such as salary reports. Training will be done online and there will be quizzes to ensure all employees understand how the system works. By training our employees about the new system it will save time and money because they will be educated about the BHR system.

**Testing**

There will be extensive testing before releasing this product to New Century. The IT department will need to perform manual testing on all features of the BHR system. Once the testing is done we will release the product to a beta testing group within New Century. They will express their opinions on the system and any improvements that could be made.

**Legacy System**

The BHR system will implement the old system. It will take the data from the old system and integrate it into the new functionality available from the BHR system. The BHR system will also send new data to a different location. This will ensure that the legacy system does not become a necessity for the company to function.

**Support**

Our IT department will support the legacy and BHR system. They will fix any bugs found, develop new functionality, and meet end user needs. The IT department will support these systems until they are no longer supported by the company. They will also be in close contact with the end users so the customers know what the IT department is working on and how the progress is going. Informing New Century about our progress will improve our communication and guarantee the customers are getting what they asked for.

# *Security Plan*

Employees handling personal data in an organization need to receive appropriate awareness training as well for the new system to receive regular updates to safeguard the data entrusted to the employees. Appropriate roles and responsibilities assigned for each of the BHR and TEM teams should align with the organization's security policy. Controls have been placed to protect from unauthorized access, disclosure, modification, destruction or interface.

The controls include the following:

- Actions in the system done by HR should be recorded
- Employee information can be entered, updated, or deleted only by personnel in HR department.
- The system must provide security to all logins done by the HR department
- BHR system must approve project policies.
- The system must maintain the security of company information

The BHR team being the ones to implement the system into the business plays a role with the HR department. HR's job is to keep a fully database full of records to ensure employees get the correct adjustments to their scheduling. Employees have access to sensitive information in NCWG so the role for HR is to monitor those employees. Employees will be receiving periodic reminders and updates on their scheduling. These updates will correspond with security practices to mitigate any threats.

Employee information is valuable to those who are willing to get at any means to protect the employee the BHR team will be monitoring incoming network traffic this way when a change in the employee. HR will only have the power to make these changes they will identify via a static domain from the NCWG servers. To prevent unauthorized access to any of the employee's sensitive information, access must be revoked immediate upon suspicious activity and terminated. This also includes the return of any assets of NCWG the employee may have in their possession for further investigation.

The HR department being the hub of the BHR system includes several servers to approve administrative login access. Each HR employee is required to generate a private and public key once a login is success a notice is sent to the servers and sent out to the BHR team it will then be documented into the records. If HR wishes to access login records they must fill out a request form that is forwarded over to the BHR team and after paper work has been submitted will give them a public key to access servers.

BHR system will have an interactive dashboard that internally check if a project has met current standards and procedures by using the integrated AI to create set-associative templates that the HR team can use to fill out. If all fields have not been met the system will reject the policy, however if all fields have been properly met the system will send out a approval notice to the HR and BHR teams. The approval process uses a company based design from NCWG and will offer quick & easy policy proposals in the future.

NCWG's information being a very a very crucial step in the security plan process it's the system job to define roles and responsibilities of tasks it's given. Defining the appropriate access to sensitive information for the task, and determining level of importance will allow company information to be handled a priority matter. Phases will be taken in the system to check for level of importance and task completion. Company information is very important so with the use of the BHR system and the HR team NCWG should be able to know who and what is shared.

# Jeff Arcuri

1801 Monks Ave, 127, Mankato, MN 5600
(612) 321-6409 jeffrey.arcuri@mnsu.edu

## Objective

Fourth year student pursuing Computer Information Technology degree at Minnesota State University, Mankato. Looking for a quality assurance position with an emphasis in information security. Available to work 25 hours per week during the school year and full time over the summer of 2017.

## Work Experience

**Maverick Software Consulting** April 2016 – Current
Software Engineer Intern (20 hours/week)

- Participated in agile development process.
- Involved in the interview process for potential employees.
- Analyzed and managed an automation test suite on a daily basis.
- Tested browser and desktop applications using automated and manual testing.
- Reported, documented, and verified bugs.

**Sam's Club** May 2014 – April 2016
Packager in Bakery (8 hours/week)

- Became independent, resourceful, efficient, and provided excellent customer service.
- Cross trained to work in other areas of the bakery to expand knowledge and teach others.

**Valleyfair Amusement Park** May 2012 – November 2013
Assistant Team Lead (70 hours/week)
Seasonal

- Utilized effective communication skills while leading 5-10 people on a daily basis.
- Enhanced skills in organizing and prioritizing.
- Improved critical thinking and problem solving skills.

## Education

**Minnesota State University, Mankato – Mankato, MN** August 2014 – Current

- Computer Information Technology undergraduate student with a 3.39 GPA.
- Achieved the Dean's list for 5 semesters.
- Member and risk management representative for Tau Kappa Epsilon (TKE).

## Technology Skills

- MATLAB, C++, C#, Visual Studio, Selenium, Python, Java, Autodesk Inventor, Microsoft Office, Skype, Slack, VMware, Jabber and WebEx

# Khalid Diriye

614 West Bridge Street Apt. 206 | Owatonna, MN 55060 | 507-210-7776 | khalid.diriye@mnsu.edu

## OBJECTIVE

Seeking an Information Security Analyst position where I can use my expertise in virus control, risk management, and a wide range of vulnerabilities and threats. Strong critical thinking with emphasis in communication and leadership to create a better team environment.

## SKILLS

- Windows, Linux, and Mac expertise | VMware or VMBox
- Hardware/Software repair and assessment | System security maintenance and assurance

## EDUCATION

**Minnesota State University, Mankato**

- Location: Mankato, MN
- Degree: Bachelors of Science | 2014 – Present (Expected graduation 2018)
- Major: Computer Information Technology

## EXPERIENCE

**Mankato State University**
**Information Security Student Analyst | Mankato, MN, 56001**
[Jan 2016 – Present]

- Perform technical/non-technical security research and analysis.
- Execute routine automated vulnerability scans of all Information Technology assets.
- Assist in improving security awareness on campus through active campaigns and interactive training.
- Contribute to building a framework that others can use to increase overall awareness on security topics.
- Maintain the Information Assurance and Cybersecurity website.

**Bosch**
**Cycle Coordinator | Owatonna, MN, 55060**
[Jun 2015 – Aug 2015]

- Maintain data of part inventory for shipping division.
- Moving large parts out of containers for counting.
- Receive new stock and record on handheld device to be counted in the future.

**Riverland Community College**
**Technical Support Specialist | Owatonna, MN, 55060**
[Oct 2013 – May 2015]

- Reassemble computers after making repairs or replacing parts.
- Assessed and securely maintained Mac, Windows, and Linux systems.
- Reinstall software programs or adjust settings on existing software to fix machine malfunctions.
- Maintain parts inventories and order any additional parts needed for repairs.

# *Billing & Human Resources Survey*

**Billing Procedure & Human Resources Questionnaire**

The New Century staff would like to know your experience involving the insurance and appointment scheduling procedures. This information will remain anonymous and is used to improve our patients overall experience. If you have any questions regarding the questionnaire, please contact our receptionist.

A. Your Experience
Please answer each of the following questions on a scale of 1 to 10 with 1 being lowest and 10 being highest regarding user satisfaction.

Billing Procedure

1. How would you rate your overall experience of the billing procedure? _____
2. How would you rate user friendliness of the billing procedure? _____
3. How would you rate the efficiency of the billing procedure? _____

Human Resources

1. How would you rate your overall experience of the HR procedure? _____
2. How would you rate user friendliness of the HR procedure? _____
3. How would you rate the efficiency of the HR procedure? _____

Your Suggestions
Please give any examples or comments of your experience.

_____
_____
_____
_____
_____
_____