AES System Requirements Specification Report

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Table of Contents

1. Introduction

1.1 Purpose

The Jacksonville branch of AES Structural Engineers suffers from a lack of job applicants due to a lack of awareness or knowledge of the company and its location.

The reason why is that the company website emphasizes the main company branch more than the others. This is a poor situation since prospective employees do not know much about the branch in question and will look somewhere else to apply. Another reason is that the career page does not offer any information or entice prospective employees to apply. Both reasons reduce job applicants and prospective employees when the branch tries to hire, which hurts the Jacksonville branch's efficiency, effectiveness, and morale.

 The Jacksonville branch of Atlantic Engineering Services needs more employees to take on more projects and to better divide up the workload. The issue is that there is a low number of job applicants for the company to pick from. The company website does not entice or attract any prospective employees because of a lack of detail and content on the career page and about the branches of the company. The proposed system will improve the content and presentation of the career page and the branches of the company.

1.2 Scope

The business domain that Atlantic Engineering Services is considered is a structural engineering firm. The company inspects buildings to see if the structural code is up to date and to see if there is no damage or violation, they restore buildings, climb buildings, and structurally design them as well as inspect processes. What part of their business is being changed is how they represent themselves to customers and potential employees which affects their workload, manpower, and their reputation up-front. This would also affect the workload of human resources and the ITS team.

1.3 Product overview

1.3.1 Product perspective

The career page & online application AES website update is related to the entire existing AES Corporate website. The website update's main functionality is passively bringing in more job applicants with improved and new webpages and a reimagined online application system. This main functionality is extremely necessary due to an unfulfilled functional requirement of the existing website stating that "The website shall provide content, a way to select position, and a way to apply for the position."

The website update interfaces with the existing website by integrating the new webpages and online system into the website. The features from the existing website that are included into the update was the "Keep in-touch" module that elicit for emails for company updates and the automated emailing system for email application reports to the C-suite.

The website update interfaces with the existing website with an updated Website Navigation Top Menu by having button with links that redirects to parts of the existing website along with new redirects for

the new webpages. Another couple UI interface are the bottom webpage handle and the color scheme following the design constraint of the existing website.

The website update will be developed in the same software and libraries that developed the existing website, which is the SquareSpace application.

The automated emailing system that is being used in the existing system will still be used to send the report of the application to the C-suite. The website will

The website update will the business's policies and procedures for data collection, data storage, data retention, and back up. The website update's performance and resource consumption will follow the constraints set by the SquareSpace application.

The website update will follow the same requirements for analytics except that there will be an extra analytic seeing the retention on the application section and what position the user chooses to apply for. The website follows the same availability, error handling, logging, auditing, and reporting standards. The website update will need to update scalability, and security because of new input methods, the expected increase in user traffic, and the increase in webpages needed to be supported by the existing system.

The website update will follow the same design constraints as the existing website for mobile screen size view of the website. The website update will follow the same adaption constraints as the existing website which is that the website only supports the English language and will operate on all desktop and mobile phone operating system that can support a browser. The website update will support all browsers running the chromium engine or that is supported by the SquareSpace software.
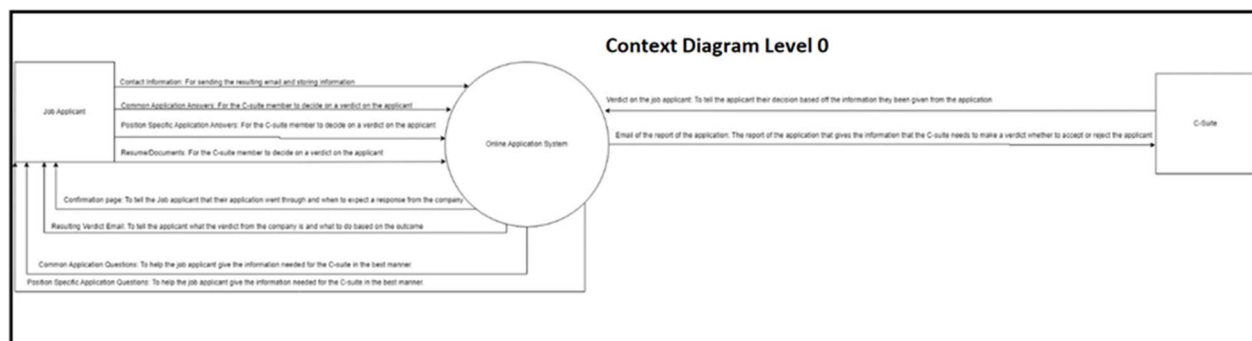
1.3.2 Product functions

The career page & online application AES website update's major functions include the following:

Top Navigation Menu: The website shall have a new Top Navigation Menu with improved buttons that clears the somewhat poor contrast on the website and new buttons that direct to parts of the new system.

Improved Career Page: The career webpage is an improvement to the existing webpage. It adds content about the company and its culture, and it links the webpages for each office location. The improved application section has a list of positions to search from and a menu that filters by department and location.

Job Description Page: The job description page shall provide and display content that is the full job description of the open position item linked to the job description page to ensure that prospective employees can make an informed decision to apply. Additionally, the job description page shall provide buttons linked to the position's application and a redirect back to the career page.

Office Branch Webpages: The webpage displays content that tells the user where the office is located, their job specialty, and the business area operations.

Online Application System: The online application system elicits information from the user that will supply a report of the application that can accurately show whether the job applicant is qualified for the position so the C-suite member can decide. The system will have questions that are common in all the applications but questions that are specific to that open position. The system also has a summary page at the end of the application. At the submission the report is sent to the C-suite via automated email, and they decide whether to save, accept, or reject the application which will save to the database based whether they accept or save, or reject the application.

1.3.3 User characteristics
The prospective employees will be providing the data in the improved application and viewing the content from the webpages.

Employers and the marketing team can judge candidates and accept or reject their applications with an email back to the candidate.

Human resources will be answering and forwarding emails, texts, calls from users, and messages and modifications from the system.

The intended group of users are prospective employees who want to send an online application or wish to learn more about the company and open positions.

The education level and experience of a prospective employee is someone who could have a BA or MA in civil, structural, or architectural engineering, a BA or MA in a business or marketing-related degree, A BA or MA in an architectural-related degree, and experience in drafting or using drafting software.

The age range of the prospective employee can be from 21 to 65, but they must be technologically literate enough to understand or use drafting and engineering software.

Physical disabilities that are possible to have and still be considered a prospective employee depend on the role that the prospective employee applied for. Engineers must be able to scale and navigate construction sites or buildings, so disabilities encompass that idea. Drafters and other roles are allowed to be accepted with more disabilities as long as they can still conduct business.

The same thing for Perceptual disabilities as well as needing to be able to navigate databases, drawings, and auto-cad code. The possible disabilities could be color blindness and vision loss.

1.3.4 Limitations

a) Regulatory policies: The website update will need to follow the business policies and the company procedure for data collection, and data back-up and retention. Therefore, the supplier will need to ensure that the website complies with any relevant data laws, regulations, or contracts with other organizations.

b) Hardware limitations: The hardware will have to follow the constraints of the SquareSpace application. The hardware and servers will have to follow the constraints of the database and automated emailing system that could impact the performance of the website.

c) Interfaces to other applications: The website update will interface with the existing website by integrating new webpages and a new online application system into the website. The supplier will need to ensure that the SquareSpace application can smoothly integrate the update into the existing website.

d) Parallel operation: The website update will have to follow the website's parallel operation with the automated emailing system. The website update will have to make a parallel operation that supports concurrent read/write operations efficiently and effectively. Furthermore, constraints will need to be added to parallel operation for the automated emailing system for more efficiency and effectiveness.

e) Audit functions: The website update will need to follow the same auditing and reporting standards as the existing website. This means the supplier will need to ensure that the website has the necessary audit functions to track user activity and report on any issues or errors that can be integrated with the update. The supplier will also need to track user activity in the database.

f) Control functions: The website update will need to follow the same error handling, logging, and reporting standards as the existing website. This means the supplier must ensure that the website has the proper control functions to handle errors, log user activity, and report on any issues or errors.

g) Higher-order language requirements: The supplier will need to ensure that the SquareSpace application is compatible with the functionality of the update.

h) Signal handshake protocols: The supplier will have to use both XON-XOFF and ACK-NACK to ensure smooth data transfer between emails and the database.

i) Quality requirements: The supplier must ensure that the website meets high-quality standards of performance and resource consumption standards, as well as having a low "click count" for user traffic.

j) Criticality of the application: Since the business already has a sufficient number of clients, the business is not worried in the sense of success but it is necessary to passively bring in more job candidates and applicants. Therefore, the supplier will have to choose a deadline that will ensure the product is developed effectively in a timely manner.

k) Safety and security considerations: The supplier will need to update the scalability and security of the website to handle the expected increase in user traffic, and that user data and the database are being protected from error, and unauthorized access and malicious attacks on the system.

l) Physical/mental considerations: The supplier will need to ensure that communication, milestones, and meetings of the project are routine and have a facilitated structure. The supplier will need to decide on the location of the meetings and whether they are remote or in-person. The supplier will need to accept delays on features or milestones for any academic related reasons such as a test or a college class lecture.

1.4 Definitions

2. References

Company Representatives (Sponsors):

Kathleen Kostage

Jude Kostage

Matt Kaufman

Elicitation:

Collin Kostage

Dominic Kessell

Reports & Notes:

- Business Analysis Notes

- Business Requirements Specification (BRS)

- User Characteristics

Websites:

- https://www.aespj.com
- https://www.aespj.com/careers

Readings:

- **Business or Mission Analysis.**
- IEEE 29148-2018 6.2 Business or mission analysis process
- IEEE 29148-2018 8.2. BRS example outline
- IEEE 29148-2018 9 Business requirements specification (BRS) content
- The Business Analysis Process: 8 Steps to Being an Effective Business Analyst **Business or Mission Analysis.**
- **Research / Information Literacy.**
- "Software Requirements 3rd Edition by Karl E. Wiegers

Wireframes / Prototypes:

Prototype: https://github.com/CEN-3073-KK/AES-Structural-Engineering/blob/main/CEN%203073%20AES%20career%20website%20update%20prototype%20draft%20%231.pdf

Wireframe:

AES-wireframe-cataloge---Wireframe-cc-Premium1676349409.pdf

AES-wireframe-path.2.pdf

3. Specific Requirements

Business

Non-disclosure of classified building plans for military bases or structures #1
The business shall not disclose classified building plans for military bases or structures.

This rule comes from contracts or explicit instructions given by the U.S Department of Defense (DOD) to complete this rule we should only use images and media of military buildings that are publicly known and that do not reveal classified information or information that is not allowed to be disclosed.

Proper examples of the following rule:

001-0001: Prospective employees using the career webpage for applying to an open position in the company or to find information about the company.

Priority: High

Business Rule

Functions

Making the application report #2

The system shall produce a full report of the application that will highlight and emphasize the information that the C-suite needs to know for better readability and faster decision-making from the C-suite, and faster response emails for job applicants.

Tasks to complete to fulfill the requirement:

- Discuss what the report needs to highlight or emphasize.
- Discuss how to highlight or emphasize the information (Use a filter?).
- Make a wireframe of the report.
- Make a Data Flow Diagram of the input of information from the prospective employee and the output of information into the report.
- Discuss what application questions will highlight or emphasize the information needed.

Constraint:

- Must be able to attach a docx. or pdf. File.
- Must be able to be displayed in an email format in plain text.

Must be able to visually alert the C-suite member to important information.

002-0001: Prospect employee filling out online application and emailing the confirmation and results to the C-suite member and job applicant.

Priority: High

Search filter for open positions #3

The system shall filter the open job positions based on the user's specification from input into the search filter for the prospective employee to find the intended open position.

Must complete ensuring the requirement is fulfilled:

- Find algorithms to sort the stored open position items by name, position, and role based on the values and data each object contains.
- Be able to reformat the webpage to suit the search filter.
- Have a user interface that allows them to filter the different positions.
- Have a wireframe of the search filter's user interface.

Constraints:

- Should not be able to negatively affect the webpage user interface or visibility after the filter. An example is when the user filters for a position, the format of the open position item changes unintentionally.
- Should not affect the links of the open position items' links to their job descriptions.
- The search filter user interface should not have text that has poor contrast with the background, small or thin text size, and poor positioning.

001-0001: Prospective employees using the career webpage for applying to an open position in the company or to find information about the company.

Priority: Moderate

Open Position items #4

The career webpage shall display open position items in the listed order that each displays the title of the position and a concise description of the open position. Open Position items contain a title of the open position, a concise short description of the position, values of roles and position types, and a link to their full job description page.

Tasks to complete to fulfill requirements:

- Make a position object that will hold the title, the desc, the values of role and position, and a link to their job desc page.
- Make user interface sketch of what the item will be displayed on the webpage.
- Ensure that it is compatible with the search filter functional requirement.
- Discuss with C-suite what the values of the roles and positions should be for each open position.

Constraints:

- The open position item should be only be linked to the job description page that relates to the position item
- The open position items should be displayed by the career page in a vertical list that are spaced out from each other to improve readability
- The open position item should be sorted by the search filter by only using the values and data.

001-0001: Prospective employees using the career webpage for applying to an open position in the company or to find information about the company.

Priority: High

Different Position application questions #5

The online application system shall have question items that only appear for some specific job application items that are linked to the position items to ensure that the C-suite can have better insight on making verdicts on job applicants while ensuring that the prospective employee can read and comprehend the application.

Tasks to fulfill the requirement:

- Discuss with the C-suite what questions should exist for each position or role.
- Make a question item object that stores the question and what position or role the is question for.
- Ensure that the system can format the position-specific questions section of the application based on the role or position they are applying for.

Constraints:

- Every role should have specific questions in their application. https://github.com/CEN-3073-KK/AES-Structural-Engineering/blob/main/CEN%203073%20AES%20online%20application%20system%20data%20flow%20diagram%20and%20description%20true.pdf

- Some application questions may appear for multiple positions or roles but may not appear for many other positions or roles. https://github.com/CEN-3073-KK/AES-Structural-Engineering/blob/main/CEN%203073%20AES%20online%20application%20system%20data%20flow%20diagram%20and%20description%20true.pdf

- The specific application questions must be addressed in a separate section in the application from the rest of the basic questions. The system should also see the specific questions and basic ones separately. https://github.com/CEN-3073-KK/AES-Structural-Engineering/blob/main/CEN%203073%20AES%20online%20application%20system%20data%20flow%20diagram%20and%20description%20true.pdf

002-0001: Prospect employee filling out online application and emailing the confirmation and results to the C-suite member and job applicant.

Priority: High

Job description page content #6

The job description page shall provide and display content that is the full job description of the open position item linked to the job description page to ensure that prospective employees can make an informed decision to apply.

Tasks to fulfill the requirement:

- Find the job descriptions for each position, if not then discuss with C-suite on what the job descriptions would entail for the positions without one.
- Make the plain text of the content.
- Format the text based on the user interface design.
- Ensure readability with different window sizes and formats.

Constraints:

- The job description page should only display images that are jpg. or png.
- The job description page should only provide links to pages that don't have any extra unsecured DNS root servers. Otherwise, this would be a compromised website.
- The text provided should not have a tiny text size or text color that does not contrast the background.

001-0001: Prospective employees using the career webpage for applying to an open position in the company or to find information about the company.

Priority: Moderate

Content of company culture #8

The career page shall provide content about the culture of the company, employee testimonials, and social media integration to entice prospective employees to apply.

Tasks to fulfill the requirement:

- Interview employees for testimonials about the company.
- Discuss with the C-suite about testimonials and office culture in the company.
- Discuss with the C-suite about social media integration.
- Interview C-suite on how they view the office culture.
- Make a draft and discuss it with the C-suite

Constraints:

- The text provided should not have a tiny text size or text color that does not contrast the background.

- The content should only provide positive statements about the office culture and employee testimonials.
- The content should only use media from Youtube, .jpeg files, or .png files

001-0001: Prospective employees using the career webpage for applying to an open position in the company or to find information about the company.

Priority: Moderate

Content of company #9

The career page shall provide general information about the company, the mission and vision statement, and a brief mention of noteworthy projects to entice prospective employees to apply.

Tasks to fulfill the requirement:

- Discuss with the C-suite key points that should be in the content.
- Interview the C-suite on how what they think of the company and their most noteworthy project or project that must be mentioned in the content.
- Gather more information from documents that detail mission and vision statements.
- Make a draft and discuss it with the C-suite.

Constraints:

- The text provided should not have a tiny text size or text color that does not contrast the background.
- The content should only provide information about projects that are not under any form of a non-disclosure agreement or contract.
- The content should only use media from Youtube, .jpeg files, or .png files.

001-0001: Prospective employees using the career webpage for applying to an open position in the company or to find information about the company.

Priority: Moderate

Content of company branches #10

The career page shall provide content that gives information on each branch's location in the business to entice prospective employees to apply.

Tasks to fulfill the requirement:

- Interview employees for testimonials about the company.
- Discuss with the C-suite about what to mention for each branch
- Discuss with the C-suite appointment times for photo shooting.
- Interview C-suite that has leadership in the branches for testimonials.
- Make a draft and discuss it with the C-suite.

Constraints:

- The information of each branch must include a picture of the outside of the branch office building, a group photo of the employees of the branch, what the branch specializes in, a noteworthy project, and the location of the business operating space.
- The career page should only use .jpg or .png images and Youtube media.
- The text provided should not have a tiny text size or text color that does not contrast the background.

001-0001: Prospective employees using the career webpage for applying to an open position in the company or to find information about the company.

Priority: Moderate

Submission items #11

The online application system shall provide a summary page that will allow the prospective employee to review their application before submitting it for better user readability of the application.

Tasks to fulfill the requirement:

- Ensure that links to previous page works.
- Ensure that the submission button sends the email.
- Ensure that the submission send the user to the confirmation page.

Constraints:

- The job applicant should only be sent to the confirmation page when they submit.
- The summary page should be able to scroll by the prospective employee through the application.
- The summary page should be able to display the answers within 1 second.

002-0001: Prospect employee filling out online application and emailing the confirmation and results to the C-suite member and job applicant.

Priority: High

Summary page #12

The online application system shall provide a summary page that will allow the prospective employee to review their application before submitting it for better user readability of the application.

Tasks to fulfill the requirement:

- Ensure that links to previous page works.
- Ensure that the submission button sends the email.
- Ensure that the submission send the user to the confirmation page.

Constraints:

- The job applicant should only be sent to the confirmation page when they submit.
- The summary page should be able to scroll by the prospective employee through the application.
- The summary page should be able to display the answers within 1 second.

002-0001: Prospect employee filling out online application and emailing the confirmation and results to the C-suite member and job applicant.

Priority: Low

Application status email #13
The online application system shall provide an application status email to the job applicant once the C-suite member makes a verdict on the status of the application to automate responses better and for sake of making the product owners comfortable answering the verdict.

Tasks to fulfill the requirement:

- Discuss with the C-suite the content of both responses to the job applicant.
- Automate the email being sent from the emailed report of the application with the buttons.
- implement a method of sending an automated email from an email.

Constraints:

- The application status email should only provide two answers which are a reject or an accept.
- The application status email should only be sent by the C-suite select a choice from their report email.
- Job applicant does not have to respond to the rejection email but must respond to the acceptance email within 2 weeks.

002-0001: Prospect employee filling out online application and emailing the confirmation and results to the C-suite member and job applicant.

Priority: High

Answer items #18
The online application system shall provide answer items that will store the input of the answer given by the prospective employee and the question ID relating to it.

Tasks to fulfill the requirement:

- Make the answer items hold the input of the answer given by the prospective employee and the question ID relating to it.
- Link the answer id to the questions.

Constraints:

- CON-1. The user can answer the question item as many times as they need to before submission
- CON-2. The text in the answer box should be a tiny size or color that does not contrast the background.
- CON-3. The text in the answer choices should be a tiny size or color that does not contrast the background.

002-0001: Prospect employee filling out online application and emailing the confirmation and results to the C-suite member and job applicant.

Priority: Low

Question items #19
The online application system shall provide question items that will display the question itself and be linked to the answer item with an answer item ID.

Tasks to fulfill the requirement:

- make the question item objects hold the question, the id, and the answer id.
- Link the question item to the answer item.

Constraints:

- CON-1. The user can view the question item as many times as they need to before submission.
- CON-2. The text provided should not have a tiny text size or text color that does not contrast the background.
- CON-3. The question should be clearly and concisely stated to the prospective employee during the application process.

002-0001: Prospect employee filling out online application and emailing the confirmation and results to the C-suite member and job applicant.

Priority: Moderate

Analytical tracking of the user data #20
The career page should have analytics that provides insights into the effectiveness of the job postings, application process, and job applicant engagement. These insights can be used to improve the career page's performance and make data-driven hiring decisions.

Tasks to fulfill the requirement:

- Discuss with the product manager and C-suite what data should be tracked by the website.
- Decide what method to store the analytics.
- Link the website to where the analytics will be stored to output data there.

Constraints:

- CON-1. The data that is stored should be secured according to the data protection policy.
- CON-2. The data being tracked should relate to the traffic of the website and answers from the application.
- CON-3. As soon as the user clicks on a link or item, the career page should store the action.

002-0001: Prospect employee filling out online application and emailing the confirmation and results to the C-suite member and job applicant.

Priority: High

Database of submission items #21

The online application system shall have a database to store accepted or saved application reports for the C-suite member to reference and for analytics to provide insight into the effectiveness of the application, job posting, sources of prospective employees, and marketing.

Tasks to fulfill the requirement:

- Design the schema of the database.
- Discuss the size of the database and where it should be located with the C-suite or product manager.
- Implement database into a company server or section of a storage space.
- Implement links to the database from the online application system.

Constraints:

- CON-1. The database should not reach 90% capacity.
- CON-2. The submission items should be stored in the database within 5 seconds.
- CON-3. The ITS and C-suite are the only members allowed to delete items from the database.
- CON-4: separate the accepted and saved job candidates.

002-0001: Prospect employee filling out online application and emailing the confirmation and results to the C-suite member and job applicant.

Priority: High

Performance

Saving the data from the draft of the job application #7

The drafted data that was inputted by the user in the online application system should be able to be saved in case the user decides to redirect to the previous page and redirect back to the same page to ensure that the progress of the application for prospective employees is safe and ease the use of the application.

Tasks to fulfill the requirement:

- Make a draft item that holds all the answers and inputs.
- decide to use server, cookies, or local browser storage to hold the draft item.
- implement the method of storing the draft item.
- implement a way of putting back the data where it was.

Constraints:

- The application page must load within 10 seconds.
- The storage method must be secure against SQL injection and other code injections in case of affecting the submission database.
- The data must be loaded back into the website within 2 seconds.

002-0001: Prospect employee filling out online application and emailing the confirmation and results to the C-suite member and job applicant.

Priority: Low

Each application must load within 5 seconds #14

The job description page should direct the user to the proper application page and load it within 5 seconds to ensure the user is properly loaded and user engagement.

Tasks to fulfill the requirement:

- test ping the webpage
- ensure that the network of the website is stable enough to maintain the speed of loading a new page.

Constraints:

- All applications should load the full page entirely and display all the sections on the page.
- All buttons to redirects should be loaded within 5 seconds as well.

- Answer items should be able to be interacted with as soon as the webpage loads.

002-0001: Prospect employee filling out online application and emailing the confirmation and results to the C-suite member and job applicant.

Priority: Moderate

Emails from the online application system must be delivered to the recipient within 5 seconds #15

The online application system should have delivered their emails to the recipient within 5 seconds after being prompted to ensure user engagement and stability of the automated email system.

Tasks to fulfill the requirement:

- set up the emailing system that will email for the online application system
- test ping from the webpage to the email system.
- validate the requirement via test email delivery from the system.

Constraints:

- CON-1. The emails will only have to go to a single job applicant at a time.
- CON-2. The emails to the C-suite will be sent to some specific members.
- CON-3. The email for the C-suite will include a compressed attachment of the files attached.

002-0001: Prospect employee filling out online application and emailing the confirmation and results to the C-suite member and job applicant.

Priority: Moderate

The application system should delete the submission item when the C-suite member rejects the applicant or within the next 21 days if the C-suite member doesn't reply #16

The application system should delete the submission item from the database when the C-suite member rejects the applicant or within the next 14 days if the C-suite member doesn't reply to ensure the stability of the database and the scalability of the application system.

Tasks to fulfill the requirement:

- Make a timer that will count down 14 days.
- automate the timer being assigned to each submission in the db.
- automate the deletion of the submission item.

Constraints:

- The timer to delete will start counting down as soon as the submission item is in the database.

- The db will only delete the submission items that have timedout.
- The db will securely delete the submission item to ensure stability and security of the db.

002-0001: Prospect employee filling out online application and emailing the confirmation and results to the C-suite member and job applicant.

Priority: Moderate

Tag: Logical Datastore

The online application system should provide different answer types #17
The online application system should provide different answer method types which include text inputs, multiple choice, check boxes, and true or false statements.

Tasks to fulfill the requirement:

- Assign a choice variable that will hold the choice of the user and the question Id relating to it.
- Sketch a design of the format of the question choices.

Constraints:

- A multiple-choice question will only have one answer or choice.
- A check box question will have many choices and could have many answers.
- A true or false question will only have a binary choice.

002-0001: Prospect employee filling out online application and emailing the confirmation and results to the C-suite member and job applicant.

Priority: Low

Usability

Effectiveness #22:
The online application system must have a completion rate of at least 80% among the users who apply. This is to ensure that that the system is effective in gathering job applicants.

002-0001: Prospect employee filling out online application and emailing the confirmation and results to the C-suite member and job applicant.

Efficiency #23:
The time it takes for a user to navigate to a specific webpage should be no more than seconds. This is to ensure that the system is allowing users to find information and access other systems efficiently.

001-0001: Prospective employees using the career webpage for applying to an open position in the company or to find information about the company.

Satisfaction #24:

User satisfaction with the career page and application system should be at least 75% based on user feedback from surveys and observations. This is to ensure that that the users are comfortable and satisfied with the new additional content, and improved application process.

002-0001: Prospect employee filling out online application and emailing the confirmation and results to the C-suite member and job applicant.

User Interface #25:

The user interface for the website and online application system should be clear, concise, and consistent to use. The instructions and labels should be clear, understandable, and easy to see. This is to ensure that users can navigate to the webpages.

001-0001: Prospective employees using the career webpage for applying to an open position in the company or to find information about the company.

Interface

Inputs # 26:

User Input on the website.

  a. Name of item: User input
  b. Description of purpose: This input is used to allow users to interact with the software and input information such as interacting with content and selecting redirects to different webpages.
  c. Source of input: User
  d. Valid range, accuracy, and/or tolerance: The software should be designed to accept a wide range of user inputs within reasonable limits.
  e. Units of measure: N/A
  f. Timing: User inputs should be processed as soon as the user interacts with the item. The process should be validated for accuracy and completeness in the loading process.
  g. Relationships to other inputs/outputs: User inputs may be used to activate other existing system functions or redirect to a different webpage.
  h. Screen formats/organization: User inputs should be entered in a clear and clear and concise manner that can be easily understood while not making it overbear.
  i. Window formats/organization: N/A
  j. Data formats: User inputs should be formatted according to predefined standards from the existing system.
  k. Command formats: N/A
  l. End messages: N/A

001-0001: Prospective employees using the career webpage for applying to an open position in the company or to find information about the company.

User Input on the online application system

a. Name of item: Answer item
b. Description of purpose: This input is used to allow users to interact with the system and input information such as an answer to a question in the application, contact information, and resumes.
c. Source of input: User
d. Valid range, accuracy, and/or tolerance: The software should be designed to accept a wide range of user inputs within reasonable limits.
e. Units of measure: N/A
m. Timing: User inputs should be processed as soon as the user interacts with the item. The process should be validated for accuracy and completeness in the loading process.
f. Relationships to other inputs/outputs: User inputs may be used to generate a report and maybe verified whether if it is completed.
a. Screen formats/organization: User inputs should be entered in a clear and clear and concise manner that can be easily understood while not making it overbear.
g. Window formats/organization: N/A
h. Data formats: User inputs should be formatted according to the predefined standards from the prototype and questions implemented.
i. Command formats: N/A
j. End messages: N/A

002-0001: Prospect employee filling out online application and emailing the confirmation and results to the C-suite member and job applicant.

Outputs #27:

Application Report email.

b. Name of item: Application report
c. Description of purpose: This output provides C-suite with a report of a submission of a job application.
d. Destination of output: Email
e. Valid range, accuracy, and/or tolerance: Application report should be accurate and up-to-date.
f. Units of measure: N/A
g. Timing: The report should be pre-generated and loaded in real-time. The process should be validated by the email system for accuracy and completeness in the loading process.
h. Relationships to other inputs/outputs: Application status updates may be linked to user inputs such as job application reference numbers or email addresses.

i.   Screen formats/organization: Application report should be organized in a clear and concise manner that can be easily understood while not making it overbear.

j.   Window formats/organization: Be able to be formatted in an email.

k.   Data formats: The application report should be formatted according to the predefined standards from the prototype and questions implemented.

l.   Command formats: N/A

m.   End messages: N/A

002-0001: Prospect employee filling out online application and emailing the confirmation and results to the C-suite member and job applicant.

Application Status email.

a.   Name of item: Application status updates

b.   Description of purpose: This output provides users with updates on the status of their job applications.

c.   Destination of output: Email

d.   Valid range, accuracy, and/or tolerance: Application status updates should be accurate and up-to-date.

e.   Units of measure: N/A

f.   Timing: The report should be pre-generated and loaded in real-time. The process should be validated by the email system for accuracy and completeness in the loading process.

g.   Relationships to other inputs/outputs: Application status updates may be linked to user inputs such as job application reference numbers or email addresses.

h.   Screen formats/organization: Application status updates should be organized in a clear and concise manner that can be easily understood while not making it overbear.

n.   Window formats/organization: Be able to be formatted in an email.

i.   Data formats: Application status updates should be formatted according to predefined standards.

j.   Command formats: N/A

k.   End messages: N/A

002-0001: Prospect employee filling out online application and emailing the confirmation and results to the C-suite member and job applicant.

Webpage redirects.

a.   Name of item: Redirects.

b.   Description of purpose: Redirects the user to the desired page based on the user or system.

c.   Destination of output: Webpage

d.   Valid range, accuracy, and/or tolerance: Link should go within the website and no external redirects.

  e. Units of measure: N/A

  f. Timing: Should be activated as soon as it is clicked on.

  g. Relationships to other inputs/outputs: It can bring the user to the online application system, and to sections of the existing system.

  h. Screen formats/organization: The webpage redirects should be organized in a clear and concise manner that can be easily understood while not making it overbear.

  i. Window formats/organization: N/A

  j. Data formats: User inputs should be formatted according to the predefined standards from the prototype and questions implemented.

  k. Command formats: N/A

  l. End messages: N/A

001-0001: Prospective employees using the career webpage for applying to an open position in the company or to find information about the company.

Logical Datastore

Application Report being Stored #28:

a) Types of information used by various functions:

- Question answers.
- User information including name and email address.
- Time and date of report generation and saving.
- Images and other documents.

b) Frequency of use:

- Reports will be added into the database when a job applicant applies and if the C-suite accepts or saves the report.

c) Accessing capabilities:

- The database should have read and write capabilities for authorized users.
- The database should have backup and recovery capabilities in case of data loss.

d) Data entities and their relationships:

- There will be a one-to-many relationship between the user and saved reports entities. This allows a user to submit multiple reports.
- Each saved report entity will have a unique identifier for retrieval purposes. This is so the C-suite can call upon the document when needed. This can be an Id number.

e) Integrity constraints:

- The database should enforce referential integrity between the user and stored report entities.
- The database should ensure that the saved reports are associated with the proper job applicant.

f) Data retention requirements:

- The saved reports should be retained for 21 days as defined by the organization's data retention policies. See [#16](#16).
- The database should be capable of archiving or deleting saved reports after 21 days have elapsed to comply with the business's data retention policies.

002-0001: Prospect employee filling out online application and emailing the confirmation and results to the C-suite member and job applicant.

Priority: High

Tag: Logical Datastore

Design Constraints

Front End design of webpages:

Color and contrast #29:

- The new and improved webpages color coordination of the text, background, and buttons should follow the existing websites and company brand.

  001-0001: Prospective employees using the career webpage for applying to an open position in the company or to find information about the company.

  Priority: Low

The Top handle #30:

- The navigation handle's design should include the company brand logo in the same manner as the existing website.

  001-0001: Prospective employees using the career webpage for applying to an open position in the company or to find information about the company.

  Priority: Low

The Bottom handle # 31:

- The product must contain the bottom existing website footer.

001-0001: Prospective employees using the career webpage for applying to an open position in the company or to find information about the company.

Priority: Low

4. Verification & Testing

Acceptance test designs

Alpha testing is a small test build for a small group of users testing the product that focus on the functionality and the comfort of the user. Beta testing is a larger test build of the product for a larger group of users focusing on the performance, stability, and bug testing. Alpha and beta test plans were discussed with stakeholders. The Alpha test plan involves a small group of test users, only three at most can be expert users while the rest of the test user participants will have to be gathered from local colleges and universities. The purpose of the that test is evaluate how the reports will highlight information, how the automated email system can handle a small number of users sending information at once that ensure stability, and to figure out if the database properly organized the data and stored them correctly. Another test that will be done is to see the reception on the content in the career page. The beta test plan was to increase the test user group and expand the demographic from college students to workers already in the industry. The purpose of the test is to ensure that the questions of the applications fulfill the requirement that they can highlight information important to the C-suite member. Another purpose is to evaluate the largescale stability and security of the automated email system and database that stores the reports.

Operation acceptance testing is a test that ensures that the system is ready to be used in a production environment. Operational acceptance test plans were discussed with the C-suite. The first set of tests were to ensure that the links on each web page work by using them, ensuring that the redirects are taking the proper amount of time allowed in the constraint, and loading the page correctly. The next set of tests were to ensure that the application system sends the emails within the time constraints as well as ensuring that the email sent the proper content and attachments. The system sends the emails to the correct recipients and the recipients that are allowed to receive the email.

Business

Non-disclosure of classified building plans for military bases or structures #1

Check any image before being published into the webpage.

The project manager will check the images for uploading onto the webpage.

001-0001: Prospective employees using the career webpage for applying to an open position in the company or to find information about the company.

Functions

Making the application report #2

Ensure that the output of the report is clear and expected.

The project manager and C-suite will both get an example report to verify if the format is clear.

002-0001: Prospect employee filling out online application and emailing the confirmation and results to the C-suite member and job applicant.

Search filter for open positions #3

All combinations of inputs will be tried.

The project manager or developer will test all inputs in the menu to verify if the filter selection is working as intended.

001-0001: Prospective employees using the career webpage for applying to an open position in the company or to find information about the company.

Open Position items #4

The open position items will be displayed in the website and will be tested by the beta test group.

The beta test group will ensure that the open position items are working as intended by interacting with it.

001-0001: Prospective employees using the career webpage for applying to an open position in the company or to find information about the company.

Different Position application questions #5

The beta test group will verify the application questions by interacting with them and submitting applications.

The beta test group will proceed through an application, interacting with each item thoroughly and submitting the results.

002-0001: Prospect employee filling out online application and emailing the confirmation and results to the C-suite member and job applicant.

Job description page content #6

The project manager will verify the content by viewing it on the published website and interacting with the text.

The project manager will interact with the text to ensure that the content is being displayed properly.

001-0001: Prospective employees using the career webpage for applying to an open position in the company or to find information about the company.

Content of company culture #8

The project manager will verify the content by viewing it on the published website and interacting with the text.

The project manager will interact with the text to ensure that the content is being displayed properly.

001-0001: Prospective employees using the career webpage for applying to an open position in the company or to find information about the company.

Content of company #9

The project manager will verify the content by viewing it on the published website and interacting with the text.

The project manager will interact with the text to ensure that the content is being displayed properly.

001-0001: Prospective employees using the career webpage for applying to an open position in the company or to find information about the company.

Content of company branches #10

The project manager will verify the content by viewing it on the published website and interacting with the text.

The project manager will interact with the text to ensure that the content is being displayed properly.

001-0001: Prospective employees using the career webpage for applying to an open position in the company or to find information about the company.

Submission items #11

002-0001: Prospect employee filling out online application and emailing the confirmation and results to the C-suite member and job applicant.

Summary page #12

The project manager will verify the content by viewing it on the published website and interacting with the text.

The project manager will interact with the text to ensure that the content is being displayed properly.

002-0001: Prospect employee filling out online application and emailing the confirmation and results to the C-suite member and job applicant.

Application status email #13

The application status email will be verified by the project manager by viewing the content and each output.

The project manager will verify each input of the application status email by interacting with content and text.

002-0001: Prospect employee filling out online application and emailing the confirmation and results to the C-suite member and job applicant.

Answer items #18

The project manager will interact with the items to ensure they work.

The project manager will interact with the items to ensure that they are accurate and free of errors.

002-0001: Prospect employee filling out online application and emailing the confirmation and results to the C-suite member and job applicant.

Question items #19

The project manager will interact with the items to ensure they work.

The project manager will interact with the items to ensure that they are accurate and free of errors.

002-0001: Prospect employee filling out online application and emailing the confirmation and results to the C-suite member and job applicant.

Analytical tracking of the user data #20

The project manager and C-Suite will review the process together to ensure that everything is working properly and intended.

The project manager and C-Suite will review the process together to ensure that the user tracking and data gathering are complying with the requirements and security constraints. See #21

002-0001: Prospect employee filling out online application and emailing the confirmation and results to the C-suite member and job applicant.

Database of submission items #21

The project manager and developers will verify the structure and statements of the database to prevent any anomalies from occurring.

The project manager and developers will check all SQL statements and ensure that the database is under the constraint of Boyce Codd Normal Form to prevent any anomalies from occurring.

002-0001: Prospect employee filling out online application and emailing the confirmation and results to the C-suite member and job applicant.

Performance

Saving the data from the draft of the job application #7

The project manager will check if the draft data is being stored.

The project manager will verify if the cookies are being used and that the draft data is being temporarily stored.

002-0001: Prospect employee filling out online application and emailing the confirmation and results to the C-suite member and job applicant.

Each application must load within 5 seconds #14

The alpha test group will check if each application loads within 5 seconds.

The alpha test group will check if each application loads within 5 seconds with both paths of webpage redirect and ensure that the load is complete by testing all inputs.

002-0001: Prospect employee filling out online application and emailing the confirmation and results to the C-suite member and job applicant.

Emails from the online application system must be delivered to the recipient within 5 seconds #15

The alpha test group will verify the requirement by submissions.

The alpha test group will send a series of various application submissions to a series of C-suite members from various test user emails to verify the requirement and to see the loads are complete.

002-0001: Prospect employee filling out online application and emailing the confirmation and results to the C-suite member and job applicant.

The application system should delete the submission item when the C-suite member rejects the applicant or within the next 21 days if the C-suite member doesn't reply #16

The project manager will verify if an applicant's report email will be deleted once rejected and will automatically delete itself in 21 days.

The project manager will check the data base constraints, automation, and process/output of the deletion and seeing if any are failed in being met. The project manager will verify if the constraints for the deletion will activate the process.

002-0001: Prospect employee filling out online application and emailing the confirmation and results to the C-suite member and job applicant.

The online application system should provide different answer types #17

The project manager will check an application.

The project manager will check an application to ensure that there various answer types for text, buttons, and files.

002-0001: Prospect employee filling out online application and emailing the confirmation and results to the C-suite member and job applicant.

Usability

Effectiveness #22:

The effectiveness of the online application system will be verified by the C-suite 2 months after release.

The C-suite, the project manager, and development team will have a meeting that reviews the effectiveness of the product.

Efficiency #23:

The efficiency of the online application system will be verified by the C-suite 2 months after release.

The C-suite, the project manager, and development team will have a meeting that reviews the efficiency of the product.

Satisfaction #24:

The satisfaction of the online application system will be verified by the C-suite 4 months after release.

The C-suite, the project manager, and development team will have a meeting that reviews the user satisfaction of the product.

User Interface #25:

The user interface of the online application system will be verified by the C-suite 4 months after release.

The C-suite, the project manager, and development team will have a meeting that reviews the user interface that the product is using.

Interface

Inputs # 26:

User Input on the website.

The project manager will check all the inputs on the website.

The project manager will interact with every button and input method on each webpage to ensure that they working properly and as intended.

User Input on the online application system

The project manager will check each section of the application and each position section for every application.

The project manager will interact with each button, text input, and file submission item for each application section and each position question application sections.

Outputs #27:

Application Report email.

The project manager and a C-suite member will check if the process and output is working properly and is complying with all the constraints and business rules.

The project manager and a C-suite member will verify the process and the output of the report, the C-suite will observe whether the report email fits the constraints and the project manager will ensure that the process and output follow the business rules.

Application Status email.

The project manager, developers, and alpha test group will check if the process and output are working properly and is complying with all the constraints and business rules.

The project manager and an alpha test group will verify the process and the output of the email, the C-suite will observe whether the email email fits the constraints and the project manage will ensure that the process and output follows the business rules.

Webpage redirects.

The project manager will check if the redirect process works as intended.

The project manager will interact with each button that redirects to another webpage and verify the process meets the constraints.

Logical Datastore

Application Report being Stored #28:

The project manager, developers, and alpha test group will check if the saved applications are being stored properly and as intended.

The project manager, developers, and alpha test group will verify if the saved applications are being properly stored through records and tests with various conditions by using various test user emails and testing the automation of the database.

Design Constraints

Front End design of webpages:

Color and contrast #29:

The project manager and alpha test group will check if the color and contrast met the requirements and constraints.

The project manager and alpha test group will verify if the color and contrast by ensuring if the users can see it clearly and easily.

The Top handle #30:

The project manager and alpha test group would verify if the Top handle met the requirements and constraints.

The project manager and alpha test group would verify if the Top handle loads in properly and matches the existing websites.

The Bottom handle # 31:

The project manager and alpha test group would verify if the Bottom handle met the requirements and constraints.

The project manager and alpha test group would verify if the Bottom handle loads in properly and matches the existing websites.

5. Appendices

5.1 Assumptions and dependencies

- Improving the website will increase job applications from prospective employees.
- A detailed plan is needed for the ITS team to implement and develop.
- Elicitation and feedback are needed for the success of the update.
- The target demographic is prospective employees who are civil or structural engineers or people with the skill to draft and design.
- The target demographic for people with those qualities are recent college graduates and people in the industry wishing to find a better job.
- The age demographic is 22 - 60. (Our newest hire is an older gentleman)
- Improving the website will give other company branches more recognition.
- This rule comes from contracts or explicit instructions given by the U.S Department of Defense (DOD) who has classified information and security programs to protect sensitive information relating to military buildings which include building plans or designs that can reveal classified information. To complete this rule we should only use images and media that comply to the contracts and explicit instruction by using images of military buildings that are publicly known and that does not reveal classified information or information that is not allowed to be disclosed.

5.2 Acronyms and abbreviations

- AES - Atlantic Engineering Services
- SE - Structural Engineer