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|  |  | Application tracking system  By Kurt Muller, Joy He, & Seth Aker |

# Project Overview

## Purpose

The Applicant Tracking System (ATS) project aimed to develop a comprehensive solution for a talent acquisition company, streamlining the recruitment process through the implementation of Microsoft Power Platform technologies. The primary goal was to create an end-to-end system that enables the Human Resources (HR) team to manage job listings, receive applications, and facilitate a seamless workflow for application approval, interview scheduling, deployment decisions, and equipment ordering.

## Scope

The scope of the project encompassed the design and implementation of various components within the Microsoft Power Platform, including Power Pages, Microsoft Dataverse, Power Automate (Business Process Flows and Approval Flow), Power Apps (Model Driven App), and Azure DevOps Boards. The focus was on achieving both functional and non-functional requirements to ensure a robust and user-friendly Applicant Tracking System.

## Objectives

1. **Database Management:**
   * Store applicant information and applications in a Microsoft Dataverse database.
   * Utilize Microsoft Dataverse for managing job listings and related applications.
2. **User Interface and Experience:**
   * Design a Power Pages Site to provide users with a user-friendly interface for viewing current job listings and submitting applications.
   * Develop Model Driven applications to track the status of applications.
3. **Structured Development Approach:**
   * Implement and enforce roles through security groups and security roles for controlled access.
   * Utilize Azure DevOps Boards to track work items and monitor project progress.
4. **End-to-End Workflow:**
   * Establish business process flows to guide users through each stage of the application process.
   * Implement an approval workflow for efficient application approval processes.

# Stakeholder analysis

**Stakeholder List**

Here we outline all our stakeholders and look at their specific needs within this ATS. Below is an outline of such:

### HR Team Members:

Role:

* Responsible for creating and managing job listings.
* Reviewing and managing incoming applications.

Responsibilities:

* Ensuring job listings are accurate and meet organizational needs.
* Efficiently managing the application review process.

Interests:

* Smooth workflow for job listing creation and application management.
* Access to comprehensive applicant information.

Requirements:

* Ability to easily create and manage job listings.
* Streamlined process for reviewing and managing incoming applications.
* Access to comprehensive applicant information stored in the database.

Needs:

* Efficient tools for job listing creation and application management.
* User-friendly interfaces for quick and effective decision-making.

### Recruiters:

Role:

* Reviewing submitted applications.
* Recommending candidates for further consideration.

Responsibilities:

* Conducting initial assessments of applicants.
* Recommending suitable candidates for approval.

Interests:

* Clear visibility into all submitted applications.
* Efficient workflow for reviewing and recommending candidates.

Requirements:

* Clear visibility into all submitted applications.
* Efficient workflow for reviewing and recommending candidates.
* Integration with interview scheduling and feedback recording.

Needs:

* User-friendly interface for easy navigation and application review.
* Seamless integration with interview scheduling tools.

### Hiring Managers:

Role:

* Participating in the interview process.
* Providing input on candidate suitability.

Responsibilities:

* Scheduling and managing interviews.
* Providing feedback on candidates.

Interests:

* Access to applicant information and interview results.
* Integration with Facilities Management decisions.

Requirements:

* Access to applicant information and interview results.
* Easy scheduling and management of interviews.
* Integration with Facilities Management decisions.

Needs:

* User-friendly interface for interview scheduling and feedback.
* Quick access to relevant applicant details and interview outcomes.

### Facilities Management:

Role:

* Making decisions regarding candidate deployment.

Responsibilities:

* Ensuring suitable deployment locations for selected candidates.

Interests:

* Clear visibility into candidate deployment decisions.
* Integration with IT specialists for equipment ordering.

Requirements:

* Clear visibility into candidate deployment decisions.
* Integration with IT specialists for equipment ordering.

Needs:

* Efficient tools for making deployment decisions.
* Seamless communication with IT specialists for equipment orders.

### IT Specialists:

Role:

* Sending equipment orders based on deployment decisions.

Responsibilities:

* Ensuring timely equipment provisioning for selected candidates.

Interests:

* Access to deployment decisions for equipment ordering.
* Integration with Facilities Management decisions.

Requirements:

* Access to deployment decisions for equipment ordering.
* Integration with Facilities Management decisions.

Needs:

* Streamlined process for equipment order submission.
* Effective communication with Facilities Management.

### Potential Applicants:

Role:

* Applying for positions listed in the system.

Responsibilities:

* Providing accurate and relevant information during the application process.

Interests:

* User-friendly application submission process.
* Timely updates on application status.

Requirements:

* User-friendly application submission process.
* Clear communication on application status.

Needs:

* Intuitive and straightforward application process.
* Timely updates on application status.

## RACI Matrix

## A RACI Matrix is a project management tool that defines and communicates roles and responsibilities for each task or activity within a project. The acronym "RACI" stands for Responsible, Accountable, Consulted, and Informed. The matrix clarifies who is Responsible for completing a task, who is Accountable for its success, who needs to be Consulted before decisions are made, and who needs to be Informed about the progress. This visual representation promotes transparency, reduces confusion, and ensures effective collaboration among team members throughout the project lifecycle. Below you can see the RACI matrix with the stakeholders involved in our project:

## A table of employment information Description automatically generated with medium confidence

# Requirements Analysis

Once we have understood the roles that stakeholders have in the project and their needs, requirements analysis to create a clear set of specifications for the project. This process includes identifying, documenting, and validating functional and non-functional requirements. Through collaboration with stakeholders, requirements analysis ensures that the project team has a comprehensive understanding of what the system or product must achieve. It serves as a foundation for effective decision-making, design, and development, aligning the project's outcomes with the expectations and objectives of all involved parties.

## Functional Requirements

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| As a potential user, I want to register in the system to create an account and access the applicant tracking features. | The system shall provide a user registration form with fields for essential information, including name, email, and password.  Upon registration, the system shall validate the entered information and create a unique user account.  Users shall receive a confirmation email for account verification. |
| As an HR team member, I want to create and manage job listings efficiently within the system. | The system shall provide an interface for HR team members to create new job listings.  Job listings shall include fields for job title, description, qualifications, and application deadline.  HR team members shall have the ability to edit and update existing job listings.  The system shall enforce data validation for mandatory job listing fields.  Job listings shall be stored in the Microsoft Dataverse database for centralized management. |
| As a potential applicant, I want to submit my application for a listed position through a user-friendly process. | The system shall offer a clear and intuitive application submission form.  Applicants shall provide necessary information, including personal details, resume, and cover letter.  The system shall validate and store applicant data securely in the Microsoft Dataverse database.  Upon successful submission, applicants shall receive a confirmation email.  The application form shall be accessible and responsive on various devices. |
| As a recruiter, I want to efficiently review and approve/reject submitted applications. | Recruiters shall have access to a the model-driven app, displaying all submitted applications.  The system shall provide tools for recruiters to review and assess applicant qualifications.  Recruiters shall have the authority to approve or reject applications.  An approval workflow using Power Automate shall automate the application approval process.  The system shall generate notifications to applicants regarding the status of their applications. |
| As a hiring manager, I want to schedule and manage interviews for approved candidates. | Hiring managers shall have access to an interview scheduling module.  The system shall display candidate availability for efficient scheduling.  Once an interview is scheduled, the system shall send notifications to the candidate and hiring manager.  The interview scheduling process shall be integrated with the applicant's profile for easy reference.  Hiring managers shall have the ability to reschedule or cancel interviews as needed. |
| As a hiring manager, I want to record and provide feedback on candidate interviews. | The system shall offer an interface for hiring managers to record interview results.  Interview feedback shall include assessment Results shall be stored securely in the Microsoft Dataverse database for future reference.  Recruiters and HR team members shall have access to interview results for decision-making.  The system shall support collaboration among hiring managers for consensus on candidate suitability. |
| As a facilities management representative, I want to make deployment decisions for selected candidates. | Facilities management personnel shall have access to a module for making deployment decisions.  The system shall display relevant candidate information for decision-making.  Once a decision is made, the system shall trigger notifications to IT specialists for equipment ordering.  Deployment decisions shall be stored securely in the Microsoft Dataverse database.  The system shall provide a tracking mechanism for monitoring deployment status. |
| As an IT specialist, I want to submit equipment orders based on deployment decisions. | IT specialists shall receive notifications of deployment decisions.  The system shall provide an interface for IT specialists to submit equipment orders.  Equipment orders shall include details such as quantity, specifications, and delivery preferences.  The system shall integrate with Azure DevOps Boards for tracking equipment order progress.  Confirmation notifications shall be sent to IT specialists upon successful submission of equipment orders. |
| As a system administrator, I want to ensure that applicant data is securely stored and easily accessible. | The Microsoft Dataverse database shall store comprehensive applicant information.  Data fields shall include personal details, application history, interview results, and status.  Data storage shall comply with data security and privacy regulations.  The system shall allow authorized users to query and retrieve applicant data for reporting purposes.  Regular backups and data integrity checks shall be performed to ensure data reliability. |
| As a user interacting with the system, I want a user-friendly and efficient Model-Driven application. | The Model-Driven application shall provide a structured and intuitive interface for users.  Users shall be guided through different stages of the application process seamlessly.  Data validation and error handling shall be implemented to enhance user experience.  The application shall be responsive and accessible on various devices.  Model-Driven applications shall integrate seamlessly with other components of the Power Platform. |
| As a user navigating through the application process, I want a clear and structured business process flow. | Business process flows shall be designed for various scenarios, including application submission and approval processes.  Users shall be guided through each stage of the application process with clear steps and instructions.  The system shall enforce adherence to business process flows to maintain consistency.  Business process flows shall be easily modifiable to accommodate changes in recruitment procedures.  Notifications and alerts shall be triggered based on business process flow milestones. |
| As a user exploring current job listings, I want an intuitive and informative Power Pages Site. | The Power Pages Site shall display a listing of current job openings.  Job listings shall include key details such as job title, description, and application deadline.  The site shall have a search and filter functionality for users to find specific job listings.  Power Pages Site shall be accessible on different browsers and devices.  Links on the Power Pages Site shall redirect users to the corresponding Model-Driven applications for application submission. |

## Non-Functional Requirements

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| Performance | The Power Platform-based ATS shall optimize performance, leveraging caching mechanisms and efficient data retrieval methods to ensure quick response times for user interactions. This includes seamless integration with Power Apps and Power Automate to enhance overall system responsiveness. |
| Security | The ATS, built on the Microsoft Power Platform, shall adhere to Microsoft's security best practices, implementing Azure Active Directory for user authentication. Data stored in Microsoft Dataverse will be encrypted, and role-based access controls using Power Platform security roles will ensure authorized access to applicant information. |
| Usability | The Power Platform-based ATS will prioritize user-friendly design, utilizing Power Apps for an intuitive interface accessible across devices. Power Automate will streamline processes, providing a seamless and efficient user experience. The system shall adhere to Microsoft's accessibility guidelines to ensure usability for all users |

## Azure DevOps (Requirements Management)

In this project, Azure DevOps Boards are utilized to track and manage requirements throughout the development lifecycle. Azure DevOps Boards provide a centralized platform for capturing, organizing, and monitoring work items related to project requirements. Each functional requirement is translated into a work item, allowing the team to define tasks, set priorities, assign responsibilities, and track progress. The boards facilitate collaboration by providing visibility into the status of requirements, enabling effective communication among team members. With features like backlog management, Azure DevOps Boards ensured a structured and transparent approach to requirement tracking within the development process.

# Business Process Flow

A business process flow is a visual representation that outlines the sequence of steps or stages involved in a specific business process. In the context of the Applicant Tracking System project, this business process illustrates the end-to-end workflow of the recruitment process – from job listing creation to applicant approval and deployment decisions. Below you can see this diagram:

A diagram of a company

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# Data modeling

Data modeling is the process of defining and structuring the organization's data to represent real-world entities, their relationships, and the rules governing these relationships. In the context of the Applicant Tracking System project and Dataverse, data modeling plays a crucial role in designing a well-organized and efficient database.

At the beginning of the project, we started off with this diagram for our Dataverse database: A diagram of a computer program

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As the project evolved, we had to make changes to the initial design of the database, incorporating more default tables that are found within the default Dataverse database. Below is the updated diagram, modelled in PowerBI:

A screenshot of a computer

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# Database & Application Security

Database security in Dataverse ensures the protection of sensitive information stored within the Microsoft Dataverse database. This includes applicant details, job listings, and other critical data in the Applicant Tracking System project. Security roles play a pivotal role in defining and enforcing access controls to different parts of the database.

In the Applicant Tracking System project, security roles in Dataverse contribute to maintaining data integrity and confidentiality, ensuring that stakeholders have controlled and secure access to the information they need for effective decision-making and workflow management.

Below you can see the permissions that each user:

### Key:

|  |  |
| --- | --- |
| Has Access |  |
| Does Not Have Access |  |
| Read-Only |  |

### Job Listing Table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| HR Team Member | Recruiter | Hiring Manager | Facilities Manager | IT Specialist |
|  |  |  |  |  |

### Job Application Table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| HR Team Member | Recruiter | Hiring Manager | Facilities Manager | IT Specialist |
|  |  |  |  |  |

### Contact Table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| HR Team Member | Recruiter | Hiring Manager | Facilities Manager | IT Specialist |
|  |  |  |  |  |

### Interview Table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| HR Team Member | Recruiter | Hiring Manager | Facilities Manager | IT Specialist |
|  |  |  |  |  |

### Company Location

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| HR Team Member | Recruiter | Hiring Manager | Facilities Manager | IT Specialist |
|  |  |  |  |  |

### Employee Table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| HR Team Member | Recruiter | Hiring Manager | Facilities Manager | IT Specialist |
|  |  |  |  |  |

### Equipment Inventory

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| HR Team Member | Recruiter | Hiring Manager | Facilities Manager | IT Specialist |
|  |  |  |  |  |

Access to these tables were implemented into the security roles that can be seen within our Model-Driven App.

# Approval Workflow

Automate within Microsoft Power Platform allows us to create a business process flow to ensure that certain steps are met before we can move on to the next one. Below are the steps that we follow for the business process flow for an interview that has been implemented into the project:

1. **Hiring Manager Interview Scheduling:**
   * The hiring manager receives a notification and follows the process flow to schedule an interview.
   * Once scheduled, the flow triggers a notification to the applicant about the interview details.
2. **Applicant Interview Notification:**
   * An automated notification is sent to the applicant, providing details of the scheduled interview.
3. **Hiring Manager Records Interview Results:**
   * After conducting the interview, the hiring manager uses the business process flow to record and submit interview results.
4. **Decision:**
   * If the results are positive, the flow progresses to the next stage. If negative, it concludes, and the applicant is notified.
5. **Employee Onboarding:**
   * Upon a positive decision, the flow guides the process of onboarding the applicant as an employee.
   * This includes tasks like setting up employee records, generating an employee ID, and updating databases.