
ABSENCEAPP – PROJECT DOCUMENTATION

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Platform: Microsoft Power Platform

Technologies: Power Apps (Canvas + Model-Driven), Dataverse, Power Automate, Role-based Security

Project status: MVP

Project goal: Automation of the employee absence request process

1. EXECUTIVE SUMMARY

AbsenceApp is a modern HR solution built on Microsoft Power Platform that automates and standardizes the process of managing employee absence requests.

Employees submit requests through an intuitive Canvas App, managers approve them directly from Microsoft Teams/Outlook or inside the application, and the HR department oversees the full process via a Model-Driven App.

The system automatically calculates and updates leave balances, sends notifications, and provides full visibility into request status and audit history.

Key business benefits:

- Elimination of Excel files and email communications
 - Centralized data storage in Dataverse
 - Automatic calculation and updates of leave balances
 - Full change history and audit compliance
 - Role-based access and permissions
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2. BUSINESS PROBLEM

Challenges before implementation:

- Absence requests managed manually through Excel and email
- Lack of real-time visibility of available leave balance
- Risk of lost or delayed requests in inboxes

- Time-consuming manual updates performed by HR
- No complete audit trail or decision history
- Average approval time exceeding 2 days

Impact on the organization:

- Reduced productivity and increased administrative workload
 - Employee and manager frustration
 - High risk of human error
 - Limited transparency of HR processes
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3. SOLUTION

End-to-end automation using the Microsoft Power Platform ecosystem:

- **Canvas App** – request submission and balance overview
 - **Model-Driven App** – administrative and managerial control panel
 - **Dataverse** – centralized database with relationships and security
 - **Power Automate** – automated workflows and notifications
 - **Role-based Security** – access control aligned to user roles
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4. SYSTEM ARCHITECTURE

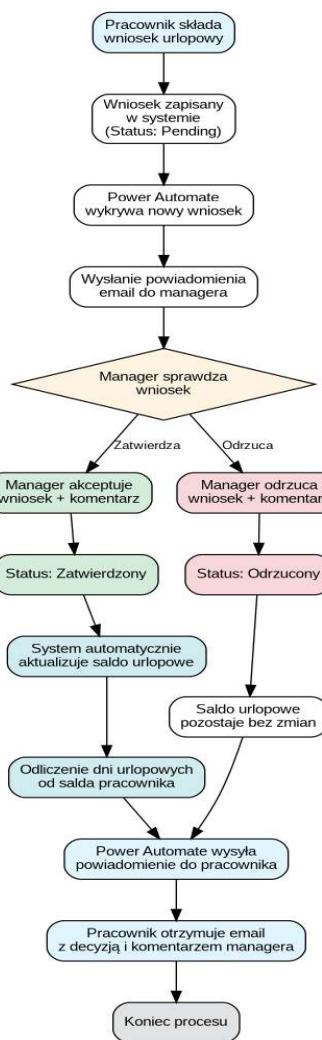
Components:

Component	Technology	Function
Canvas App	Power Apps	UI for employees and managers
Model-Driven App	Power Apps MDA	Administrative panel
Dataverse	Cloud Database	Data storage and relationships
Power Automate	Cloud Flows	Business process automation

Component	Technology	Function
Security Roles	Dataverse	Access and permission control

Process flow:

- Employee submits an absence request (Status: Pending)
- Power Automate sends a notification to the manager
- Manager approves/rejects the request with a comment
- System automatically updates the employee's leave balance
- Employee receives feedback notification



[SCREENSHOT 1: Architecture diagram – process flow]

5. DATA MODEL

Key Dataverse tables and their purpose:

Employees

- Employee data (Name, Department, Status)
- Connection to Azure AD (lookup user)
- Reporting structure (manager self-lookup)

AbsenceRequests

- Absence requests (type, dates, number of days)
- Process status (Draft / Pending / Approved / Rejected)
- Comments and decision dates

EmployeeBalances

- Employee leave balances by type and year
- EntitledDays, UsedDays, RemainingDays
- Automatic updates via flow

AbsenceTypes

- Absence types and calculation parameters
- Flag whether type counts toward limit (CountsToLimit)

Departments

- Organizational structure

Relationships

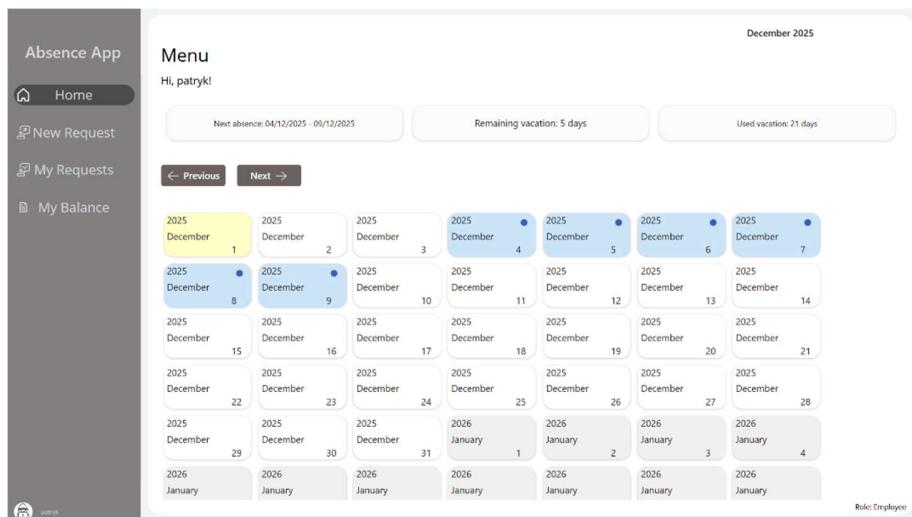
- Employees 1:N AbsenceRequests
- Employees 1:N EmployeeBalances
- AbsenceTypes 1:N AbsenceRequests / EmployeeBalances
- Employees N:1 Employees (manager hierarchy)

6. CANVAS APP – USER INTERFACE

For employees

Dashboard

- Overview of remaining days by type
- Quick access to new request
- Upcoming scheduled absences



[SCREENSHOT 2: Canvas App - Home]

New request form

- Absence type selection
- Date pickers (from-to) with automatic day calculation
- Real-time available balance preview
- Comment/justification field
- Users can save an absence request as a draft (Status: Draft) without sending it for approval
- A draft can be reopened later, edited, and submitted when ready
- In the My Requests view, Draft items have a separate status and can be filtered

[SCREENSHOT 3: Canvas App - New request form]

Request history

- List of all requests with statuses
- Filtering and search

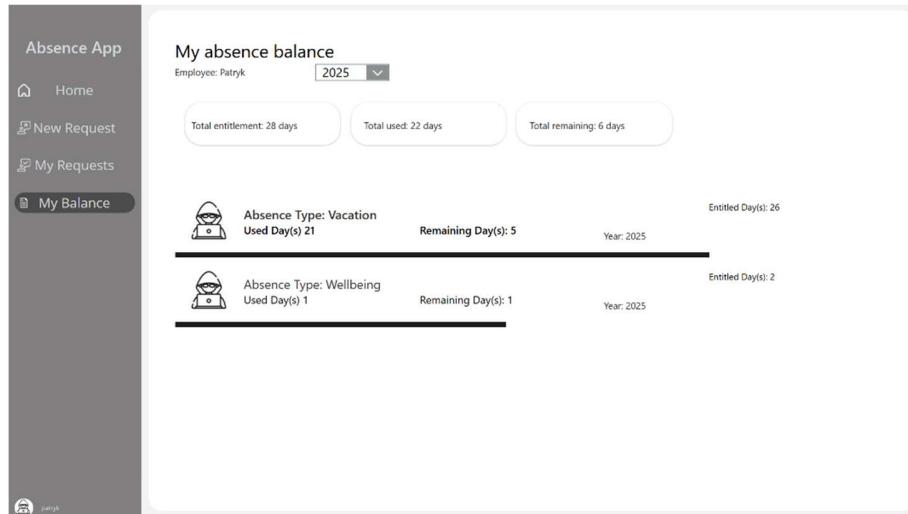
Period	Absence Type	Count Days	Status	Action
04.12.2025 - 09.12.2025	Vacation	6 day(s)	Approved	

[SCREENSHOT 4: Canvas App - Employee request history]

Current leave balance status

- Overview of available balances by absence type
- Visibility: used days (UsedDays), remaining days (RemainingDays), entitled days (EntitledDays)
- View for different types (e.g., Vacation, Wellbeing)

- Real-time update after request approval

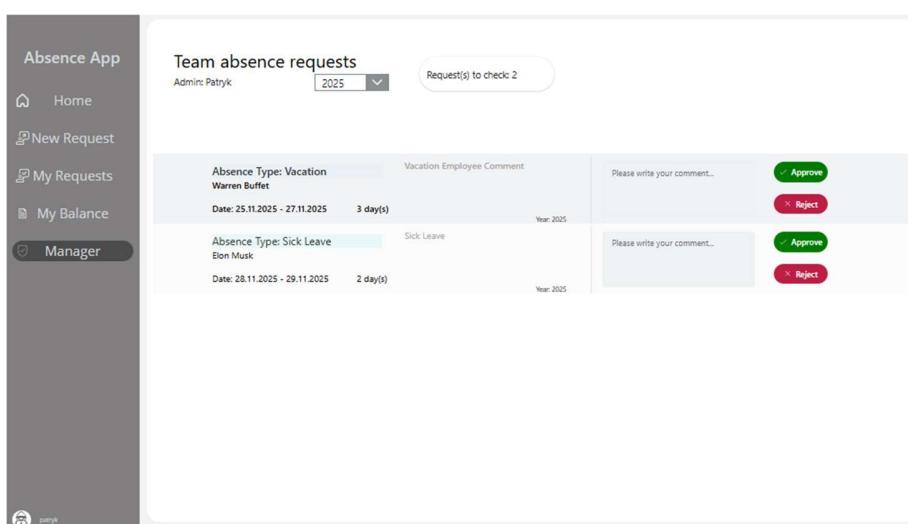


[SCREENSHOT 5: Canvas App - Employee leave balance view (Vacation and Wellbeing)]

For managers

Approval panel

- List of pending requests from team members
- View of employee's current balance before decision
- One-click approval/rejection with comment
- Real-time data refresh



[SCREENSHOT 6: Canvas App - Manager approval panel]

7. MODEL-DRIVEN APP – ADMINISTRATIVE PANEL

Navigation

- Employees, AbsenceTypes, EmployeeBalances, AbsenceRequests, Departments

The screenshot shows a Power Apps interface titled "AbsenceApp - HR & Manager Portal". The left sidebar contains navigation links for Home, Recent, Power, HR, Absence Types, Departments, Employees, Locations, Requests, and Absence Requests. The main content area displays a list titled "All Absence Types" with the following data:

Name	AbsenceCode	DefaultIsSmallLimit	InValid	CountsToLimit
WV		2	Yes	Yes
AI		26	Yes	Yes
DC		0	Yes	No
HO		0	Yes	No

[SCREENSHOT 6: Model-Driven App - Main navigation]

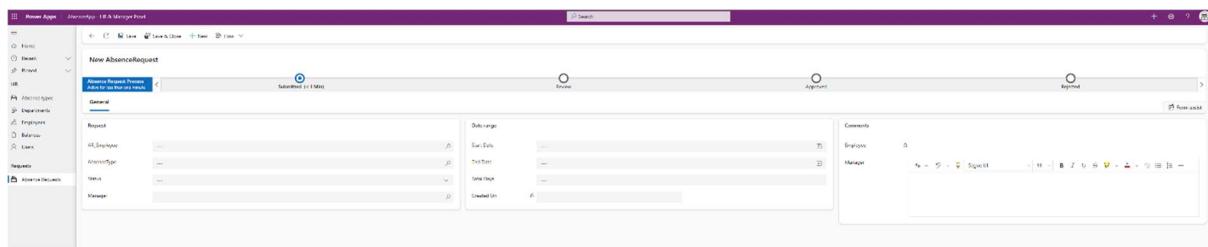
Functionalities

- Overview of all requests and balances
- Advanced views (All Requests, My Team Requests, Pending, Approved, Rejected)
- Filters and sorting
- Business Process Flow on request form
- Change history (audit history) and detailed data view
- Subgrid with employee balance

The screenshot shows a Power Apps interface titled "AbsenceApp - HR & Manager Portal". The left sidebar contains navigation links for Home, Recent, Power, HR, Absence Types, Departments, Employees, Locations, Requests, and Absence Requests. The main content area displays a list titled "My Team Requests" with the following data:

Employee	AbsenceType	Status	DateFrom	DateTo	DaysCount	Manager	Created On	Modified On
Warren Butler	Home Office	Approved	10/28/2023	11/08/2023	10	Perry	11/08/2023 1:50 PM	12/10/2023 2:09 PM
Steve Jobs	Sick Leave	Approved	11/28/2023	11/29/2023	1	Perry	11/26/2023 9:44 PM	12/10/2023 2:09 PM
Warren Butler	Sick Leave	Approved	11/04/2023	11/06/2023	2	Perry	11/04/2023 8:37 PM	12/10/2023 2:09 PM
Steve Jobs	Vacation	Pending	11/05/2023	11/05/2023	0	Perry	11/05/2023 5:19 PM	12/10/2023 2:09 PM
Warren Butler	Vacation	Pending	11/21/2023	11/21/2023	0	Perry	11/21/2023 9:19 PM	12/10/2023 2:09 PM
Elon Musk	Vacation	Approved	12/28/2023	12/28/2023	0	Perry	11/28/2023 9:00 PM	12/10/2023 2:09 PM
Elon Musk	Vacation	Rejected	11/06/2023	11/06/2023	0	Perry	11/06/2023 9:47 PM	12/10/2023 2:09 PM
Steve Jobs	Sick Leave	Urgent	11/01/2023	11/08/2023	7	Perry	11/01/2023 7:31 PM	12/10/2023 2:09 PM
Elon Musk	Sick Leave	Pending	11/28/2023	11/28/2023	0	Perry	11/28/2023 5:11 PM	12/10/2023 2:09 PM
Perry	Vacation	Rejected	12/10/2023	12/10/2023	0	Perry	12/10/2023 3:46 PM	12/10/2023 2:09 PM
Perry	Vacation	Approved	12/06/2023	12/06/2023	0	Perry	12/06/2023 2:06 PM	12/10/2023 2:09 PM

[SCREENSHOT 7: Model-Driven App - "My Team Requests" view]



[SCREENSHOT 8: Model-Driven App - Request form with Business Process Flow]

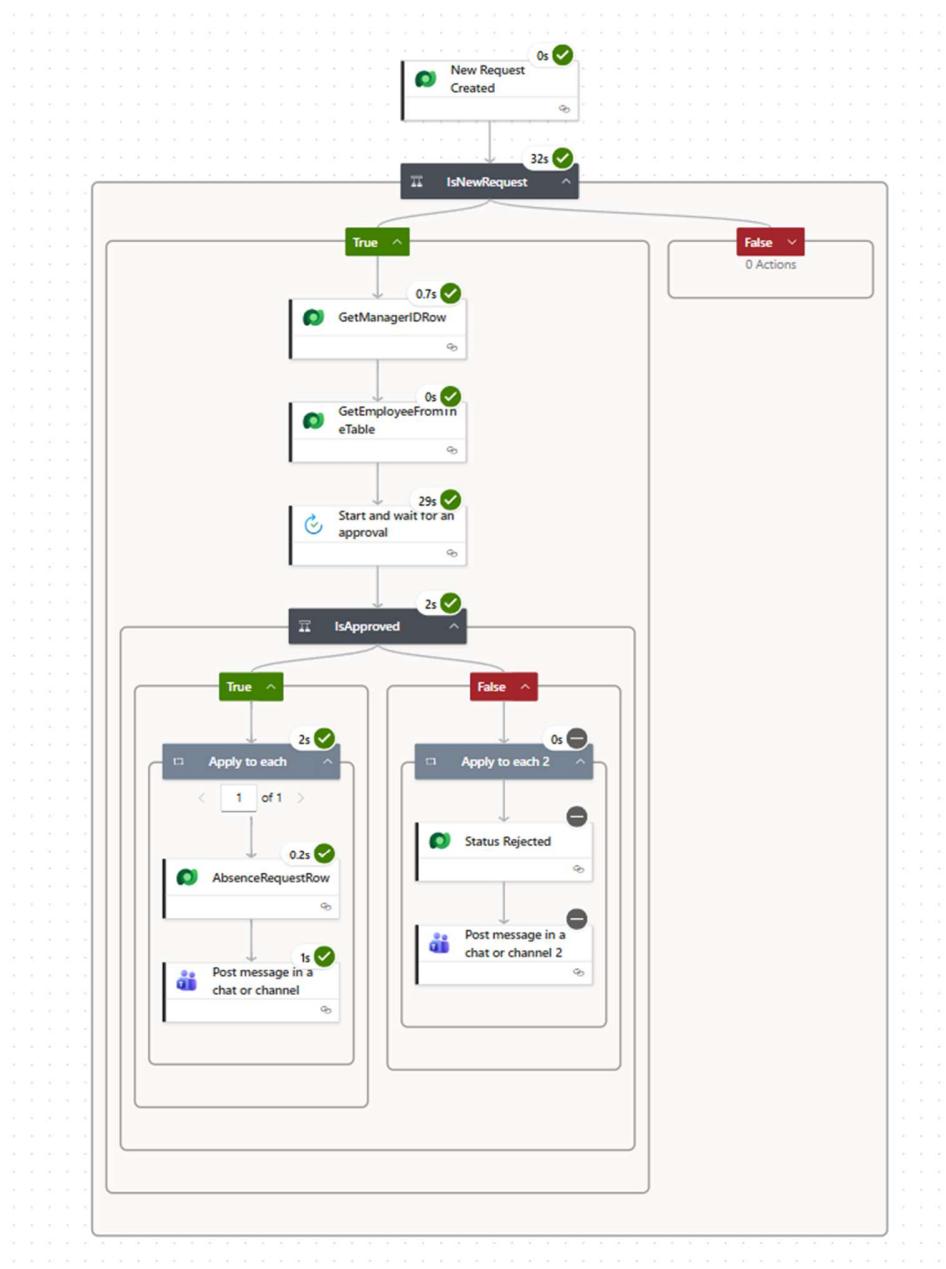
8. POWER AUTOMATE – AUTOMATION

Flow #1: Approval & Notifications

Function: Handling approval process and notifications

Process

- Detects new requests with Pending status
- Sends approval card to manager (Teams/Outlook)
- Collects manager's decision and comment
- Updates request status in Dataverse (Approved/Rejected)
- Sends notification to employee about decision



[SCREESHOT 9: Power Automate - Flow "Approval & Notifications" diagram]

Flow #2: Balance Update

Function: Automatic leave balance update

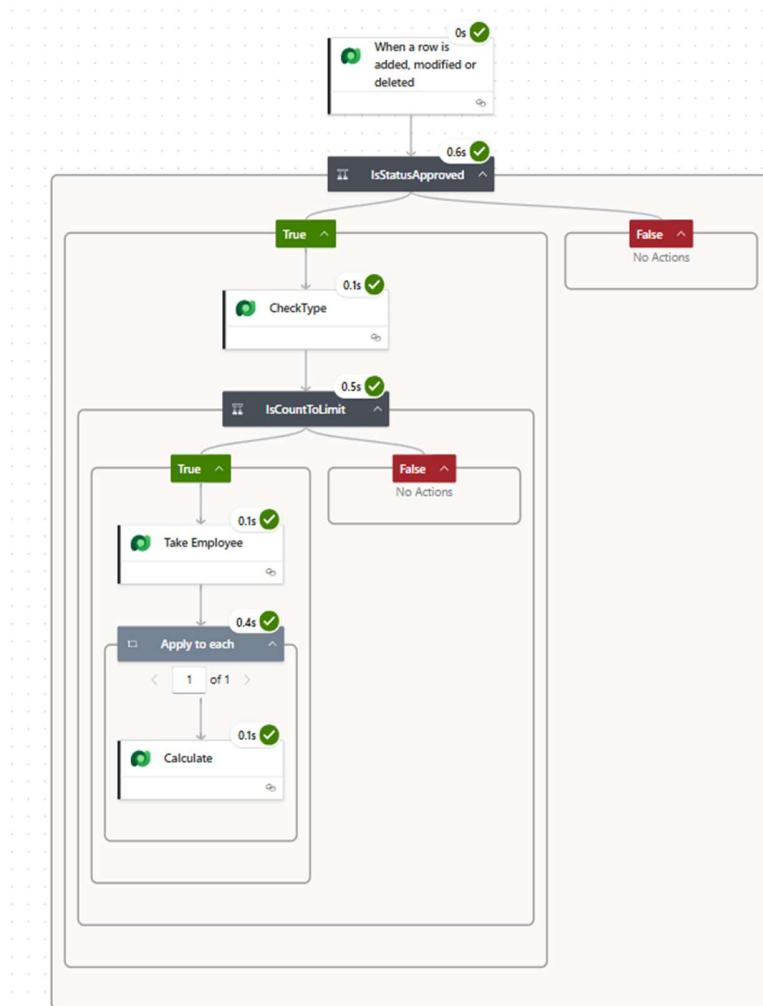
Process

- Reacts to status change to Approved

- Verifies if absence type counts toward limit (CountsToLimit=true)
- Finds appropriate EmployeeBalance record
- Updates UsedDays (adds days from request)
- Recalculates RemainingDays (EntitledDays - UsedDays)

Architecture

- Logic separation: approval workflow ≠ balance update logic
- Error handling
- Real-time UI synchronization



[SCREENSHOT 10: Power Automate - Flow "Balance Update" diagram]

9. SECURITY

Roles and access scope:

Role	Access Scope	Users
Absence Employee	Own requests and balances (Read/Write)	Employees
Absence Manager	Team requests (Read/Write/Approve), balances (Read)	Managers
Absence HR	Full management (CRUD all tables)	HR Department
System Admin	System configuration	IT

Security mechanisms

- Role-Based Access Control (RBAC)
- Business Unit hierarchy for data isolation
- Change history (audit log)
- SSO with Azure AD
- Field-level security where required

10. TESTING & VALIDATION

End-to-end test scenario

Step	Action	Result
1	Employee submits 5-day request	Status: Pending, DaysCount: 5
2	System sends approval	Manager receives card in Teams
3	Manager approves request	Status: Approved, timestamp recorded
4	Flow updates balance	UsedDays +5, RemainingDays -5

Step	Action	Result
5	Employee receives notification	Email/Teams with confirmation

11. PROJECT RESULTS

Efficiency

- Average approval time: approximately 4h (previously 2+ days, approximately -75%)
- HR administrative work time: -90%
- Excel and email approval elimination: 100%
- Canvas App adoption: 95% of requests submitted via app

Scale

- Designed for 150+ employees in the system
- Ready to handle 500+ requests annually
- Support for multi-department organizational structure
- 100% compliance with security policy

Quality

- 0 errors in balance calculations (according to tests)
- Full audit of every operation
- Real-time synchronization between components

12. TECHNICAL STACK

Skills and functionalities used:

Power Apps Canvas

- Complex forms with dynamic validation
- Query delegation optimization
- Responsive interface (mobile-first)
- Use of collections and context variables

Power Apps Model-Driven

- Business Process Flows
- Custom views and dashboards
- Forms customization
- Security role and permission configuration

Dataverse

- Data modelling (1:N, N:1 relationships)
- Lookup fields and hierarchies (e.g., manager)
- Calculated and rollup fields
- Choice type columns (business dictionaries)

Power Automate

- Cloud flows with multiple triggers
- Conditional logic and error handling
- Approval connectors (Teams/Outlook)
- Dataverse operations (CRUD)

Security & Governance

- RBAC implementation
- Business Unit hierarchy
- Azure AD integration (SSO)
- Audit logging and compliance requirements

13. DEVELOPMENT ROADMAP

Planned extensions:

Deeper Teams integration

- Chatbot for submitting simple requests
- Adaptive Cards for interactive approvals

Calendar integration

- Automatic synchronization with Outlook
- Export to iCal / Google Calendar

Power BI – analytics

- Leave utilization dashboards
- Predictive analytics for upcoming leave plans
- Leave utilization metrics per department

Multi-language support

- Dynamic labels (PL/EN)
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14. SUMMARY

AbsenceApp is a production-ready enterprise-class solution that automates the complete employee absence management process. It provides transparency, security, and significant reduction of manual work.

The project demonstrates:

- Practical application of full Power Platform stack (Canvas + Model-Driven + Power Automate + Dataverse)
- End-to-end process automation with real business logic
- Application of security best practices (RBAC, audit, compliance)
- Scalable architecture ready for further development
- Professional UX/UI tailored to business users

Impact: The organization gains a modern human resources management tool that eliminates manual work, increases transparency and efficiency of HR processes, and improves the experience of employees and managers.

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