E-Government Hackathon

Ilorin, Kwara State, Nigeria
January 28-29, 2023

Challenges

The teams will have one week to develop the project, with the option to continue working on it after the hackathon and building it into a sustainable product. The final product will be demonstrated to a panel of judges, who will evaluate the project based on its originality, functionality, design, presentation/pitch and level of completion.

Winners will win prize money as well as patronage by the Kwara State Government. The Ilorin Innovation Hub will also mentor the winners to build formidable startups and enter the Govtech space.

PROJECT	PLATFORM	CATEGORY
Correspondence Tracking System	Web & Mobile	Web & Mobile Apps, Connectivity
Election Monitoring System	Web & Mobile	Web & Mobile Apps
Data Capture System	Web & Mobile	Web & Mobile Apps, Connectivity
Cash Revenue Collection System	Mobile	Web & Mobile Apps, Connectivity, Hardware
Wholesale E-Commerce Platform for Garment Factory	Web	Web & Mobile Apps, Security
Project Monitoring System	Web & Mobile	Web & Mobile Apps, Connectivity
Medical Records System	Web	Web & Mobile Apps, Security
Transportation System	Mobile	Web & Mobile Apps

Judging Criteria

Completion (10 marks): A minimum viable product or a working prototype will be required. Does the project have all the required features? Extra points can be awarded for bonus features completed.

Technical Skill (10 marks): The quality and complexity of the technical implementation and technology used will be evaluated as well as attention to detail.

Design and User Experience (10 marks): The design, layout, and user-friendliness of the project will be taken into consideration.

Error-Free Code (10 marks): Any demo presented should have working code free of errors and glitches.

Presentation (10 Marks): The way the team presents their project to the judges, explaining how it works and how it addresses the theme of the hackathon.

Challenges Detail

Correspondence Tracking System (Web)
Category: Web & Mobile Apps, Connectivity

The goal of this project is to create a web-based dashboard that displays real-time data about the different types of correspondence moving into, out of and within an organization. The dashboard will mainly be a CRUD system but with some additional features and strict access rights. This web app will be connected to a mobile app via API. Another team will work on the mobile app.

The dashboard will be designed to be intuitive and easy to use, with clear visualizations and interactive features that allow users to search for correspondence in different ways.

Required features:

- Management of memos and letters within an organization
    - Read only after creation
    - Admin can make logged corrections
- List of departments and sub-departments (units) within the organization. This can be used flexibly for different organization types/setups eg. State Government, Ministry, Agency etc
- List of users attached to a unit or department with roles
    - Super admin
    - Administrator role limited to department/unit
    - Dispatch officer role limited to own correspondences
- Correspondence types
    - Memos – these move within an organization (intra)
    - Letters usually move between organizations (inter)
- Entry of correspondence Data fields for correspondence
    - Date
    - To Person
    - To Organization
    - To Address
    - Subject
    - Content
    - From Person
    - From Organization
    - From Address

    - Current Location (MDA, department or unit)
- Versions (or revisions) of each correspondence
    - A clear photo of the document for each version (including original)
    - Version date/time
    - Version notes (or minutes)
    - File attachment
- Minutes or notes on each correspondence and version (this can also exist as hand written text on a document/version)
- Barcode/QR code generated and attached to each document
- Settings, which allows app-wide options to be set, such as
    - Max amount of time to consider memo late at each stage – after this time the memo will turn red and be marked as late
- AI text identification from different parts of the document either automatically or semi-automatically.
- Cloud storage of initial & subsequent versions of a document
- Full text search of all correspondence

Bonus/optional features:

- Workflow creation & approval process from stage to stage
- Collaboration with a mobile app team on working API

Correspondence Tracking System (Mobile)
Category: Web & Mobile Apps, Connectivity

The goal of this project is to create a mobile app that scans and captures the different types of correspondence moving into, out of and within an organization. The app will work both offline and online. This mobile app will be connected to a web app via API. Another team will work on the web app. The two winning teams can be matched to form a startup.

Required features:

- Listing of correspondence captured by logged-in user
- Scanned photo of correspondence document
- Local storage of all correspondence offline and sync with cloud web app when connectivity exists
- Correspondence types
    - Memos – these move within an organization (intra)
    - Letters usually move between organizations (inter)
- Entry of correspondence Data fields for correspondence (and versions)
    - Date
    - To Person
    - To Organization
    - To Address
    - Subject
    - Content
    - From Person
    - From Organization
    - From Address
    - Current Location (MDA, department or unit)
- Versions (or revisions) of each correspondence
    - All fields for correspondence above
    - A clear photo of the document for each version (including original)
    - Version date/time
    - Version notes (or minutes)
    - Version File attachment
- Minutes or notes on each correspondence and version (this can also exist as hand written text on a document/version)
- Barcode/QR code scanner to scan a document and pull up its record

- AI text identification from different parts of the document either automatically or semi-manually.
- Cloud storage of initial & subsequent versions of a document
- Full text search of all correspondence

Bonus Feature:

- AI text identification from different parts of the document and matching to fields like Subject either automatically or semi-automatically.
- Collaboration with a web app team on working API.

Data Capture System (Web)
Category: Web & Mobile Apps, Connectivity

The goal of this project is to create a web app that allows users to create custom datasets, such as houses, people, sign boards, cars etc and collect data in these datasets. It will be connected to a mobile app via API.

Required Features:

- Custom dataset creation: Users will be able to create custom datasets with their own set of fields and requirements.
- Form builder: Users will be able to drag and drop form input fields of different types for each dataset.
- Data capture: Users will be able to capture data using the mobile app, including photos and GPS coordinates.
- Data validation: The app will include built-in validation to ensure that the data captured meets the requirements of the custom dataset.
- Data visualization: The web app will provide interactive data visualizations, such as maps and charts, to make the collected data easy to understand.

Bonus Features:

- API integration: The web app will provide an API for accessing the collected data.
- Collaboration with mobile app team on working API.

Data Capture System (Mobile)
Category: Web & Mobile Apps, Connectivity

The goal of this project is to create a mobile app that allows users to capture data into custom datasets created in the web app, such as houses, people, sign boards, cars etc and a web app that provides a dashboard for viewing the collected data via API.

Required Features:

- Data capture: Users will be able to capture data using the mobile app, including photos and GPS coordinates.
- Data validation: The app will include built-in validation to ensure that the data captured meets the requirements of the custom dataset.
- Offline data capture: The app will allow users to capture data offline and will automatically sync the data when a connection is available.

Bonus Feature:

- API integration: The mobile app will connect to the web app via an API for accessing the collected data. Collaboration with web app team is necessary.
- Collaboration with a web app team on working API

Cash Revenue Collection System

Category: Web & Mobile Apps, Connectivity, Hardware

The goal is to create a mobile app that logs cash collection amounts and prints out a receipt via a Bluetooth printer. It's a very simple system, but the work is in connecting the app to the hardware.

Required Features:

- Web dashboard to manage:
    - Revenue items with either fixed or variable prices
    - Collection agent user accounts
- A login system for collection agents
- Adding multiple revenue items to a transaction
- Cash amount entry on legible numerical keypad
- Entry of customer data
    - Name OR
    - Customer ID
- Receipt Print Feature with the following fields
    - Organization Name
    - Date & Time
    - Item list
    - Total Amount
    - Any other information to be passed to the taxpayer

Bonus Features:

- Web dashboard reports across multiple collection agents

Wholesale E-Commerce Platform for Garment Factory
Category: Web & Mobile Apps, Security

The goal of this project is to create a web-based platform that allows the Kwara State Garment Factory to sell their products to retailers and other businesses all over the world in bulk. The platform should have the ability to handle inventory management, order processing, payment processing and shipping. The platform should also allow for customization of products, such as adding a company logo or custom labels.

The platform should have a user-friendly interface that allows retailers to easily browse and purchase products, as well as track their order status. The platform should also have a secure login system for retailers to access their account and view their order history.

The platform should also have a back-end system for the factory to manage their inventory, process orders, and view sales data. The platform should integrate with the factory's existing inventory management system.

Required Features:

- User-friendly interface for retailers to browse and purchase products
- Secure login system for retailers to access their account and view their order history
- Customization of products, such as adding a company logo or custom labels
- Inventory management system for the factory to manage their inventory and process orders
- Sales data tracking and reporting

Bonus Feature:

- Integration with existing inventory management system

Project Monitoring System (Web)
Category: Web & Mobile Apps, Connectivity

The goal of this project is to create a web app that allows users to track and monitor the progress of multiple projects, with real-time updates, and a dashboard that shows the status of all projects.

Required Features:

- Project creation: Users will be able to create new projects and specify project details, such as project name, start and end dates, budget, milestones and team members.
- Project photos
- Task management: Users will be able to create and assign tasks to team members, with the ability to set deadlines and track progress.
- Real-time updates: The app will provide real-time updates on task progress and project status, including the ability to view the status of all tasks and projects in a single dashboard.
- Communication: The app will include a messaging feature for team members to communicate and collaborate on tasks and projects.
- Data visualization: The app will provide interactive data visualizations, such as Gantt charts and progress bars, to make project progress easy to understand.
- File sharing: The app will allow users to share and store project-related files, such as documents and images, within the app.

Bonus Feature:

- Email Notifications: Enable email notifications for projects you're following/tracking
- Collaboration with a mobile app team on a working API connection

Project Monitoring System (Mobile)
Category: Web & Mobile Apps, Connectivity

The goal of this project is to create a mobile app that allows users to track and monitor the progress of multiple projects, with real-time updates, and a dashboard that shows the status of all projects.

Required Features:

- Project updates: This mobile app will allow a field agent to take photos of projects with geolocation, captions and update project status.
- Task management: Users will be able to create and assign tasks to team members, with the ability to set deadlines and track progress.
- Real-time updates: The app will provide real-time updates on task progress and project status, including the ability to view the status of all tasks and projects in a single dashboard.
- Communication: The app will include a messaging feature for team members to communicate and collaborate on tasks and projects.

Bonus Feature:

- Email Notifications: Enable email notifications for projects you're following/tracking
- Collaboration with a web app team on a working API connection

Medical Records System
Category: Web & Mobile Apps, Security

The goal of this project is to create a web-based dashboard that displays real-time data about the health records of patients within a state, region or locality. It should be a secure and user-friendly medical records system for patients and healthcare providers.

Required Features:

- Patient profile: this will create a profile for each patient including age, allergies, known disease history etc. This profile should include the patient's state ID number, as this number will be the unique identifier for all patients.
- Patient login: Patients will be able to create an account and login to view their medical records.
- Healthcare provider login: This will allow hospitals and other healthcare providers to view a patients profile and
- Electronic medical records: Patients' medical records will be stored electronically and can be accessed by authorized healthcare providers.
- Appointment scheduling: Patients will be able to schedule appointments with their healthcare providers through the system.
- Prescription management: Patients will be able to view and manage their prescriptions through the system.
- Secure data storage: The system will utilize secure data storage and encryption to protect patients' personal and medical information.
- Data analytics: The system will have the capability to analyze data to identify trends and patterns in patients' health information.

Bonus Feature:

- API: An API will be created to allow other external medical record systems to feed data back and forth between this system and theirs using the unique identifier.

Transportation System (Mobile)
Category: Web & Mobile Apps

The goal of this project is to create an intelligent transportation system that improves the efficiency and accessibility of public transportation within a city.

Required Features:

- Ride-hailing: Users will be able to hail a ride from a motorcycle, tricycle, taxi or bus.
    - Bus rides can be shared, team will have to research how existing ride-sharing systems work.
- Real-time tracking: Users will be able to view the real-time location and status of buses, and other modes of transportation. These can use static dummy GPS coordinates for demo purposes.
- Journey planning: Users will be able to plan their journeys by viewing route options, estimated arrival times, and fare information.
- Personalized recommendations: The system will use machine learning to provide personalized recommendations to users based on their travel history and preferences.
- User feedback: Users will be able to provide feedback on their experiences with the transportation system, which will be used to improve the system.
- Automated ticketing: Users will be able to purchase and manage their tickets through the system.

Bonus Features:

- Reloadable App Wallet: dummy monetary amounts can be used to demonstrate this.
- Near Field Communication (NFC) features for tap and pay.

Election Results Monitoring System (Web)
Category: Web & Mobile Apps, Connectivity

The goal of this project is to create a system that allows for real-time monitoring and reporting of election results in Nigeria, with aggregation at the polling unit, ward, local government, constituency, state and federal levels.

Required Features:

- Data population: The system will have all the candidates running in all positions loaded into the database. It will have all polling units, wards, local governments, constituencies, and states. It will also have all parties and their logos.
    - Candidate
        - Name
        - Party
        - Constituency
    - Poling Units
    - Wards
        - And the polling units they contain
    - LGAs
        - And the Wards they contain
    - Constituencies
        - And the LGAs they contain
    - States
        - And the LGAs they contain
- Data collection: The system will collect and aggregate data on election results from various sources, including polling stations, the Independent National Electoral Commission (INEC), and news outlets.
    - Field officers will be given access to submit results as they are released
    - Multiple results from multiple sources allowed, with only one to be designated as official (INEC).
- Real-time reporting: The system will provide real-time updates on election results, including the number of votes for each candidate and the percentage of polling stations that have reported.
- Data visualization: The system will provide interactive data visualizations, such as maps and charts, to make the election results easy to understand. Bar charts are the chart of preference.

- Geo-location reporting: The system will provide information on election results by geographic location, such as states and local government areas.
- Data integrity: The system will include a mechanism for monitoring and reporting any cases of vote manipulation or other irregularities.
    - Case
        - Geo coordinates
        - Type – Violence, irregularity, lateness etc
        - Date/time
        - Photo upload

Bonus Feature:

- Candidate Photos: Include photos for candidates in the system.
- Integration with social media: The system will include functionality for sharing election results on social media platforms, such as Twitter and Facebook.

Election Results Monitoring System (Mobile)
Category: Web & Mobile Apps, Connectivity

The goal of this project is to create a system that allows for real-time monitoring and reporting of election results in Nigeria, with aggregation at the polling unit, ward, local government, constituency, state and federal levels.

Required Features:

- Data collection: The system will collect and aggregate data on election results from various sources, including polling stations, the Independent National Electoral Commission (INEC), and news outlets.
    - Field officers will be given access to submit results as they are released for each polling unit
    - Multiple results from multiple sources allowed, with only one source to be designated as official (INEC) and only this source will count towards the sum total.
- Offline capability: The app will be able to work offline and sync data when connectivity is restored.
- Data integrity: The system will include a mechanism for monitoring and reporting any cases of vote manipulation or other irregularities.
    - Case
        - Geo coordinates
        - Type – Violence, irregularity, lateness etc
        - Date/time
        - Photo upload

Bonus Feature:

- Integration with social media: The system will include functionality for sharing election results on social media platforms, such as Twitter and Facebook.