

Universidad Distrital Francisco Jose de Caldas



**UNIVERSIDAD DISTRITAL
FRANCISCO JOSÉ DE CALDAS**

WORKSHOP No. 1 — PROJECT DEFINITION AND PLANNING

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1 Business Model Canvas

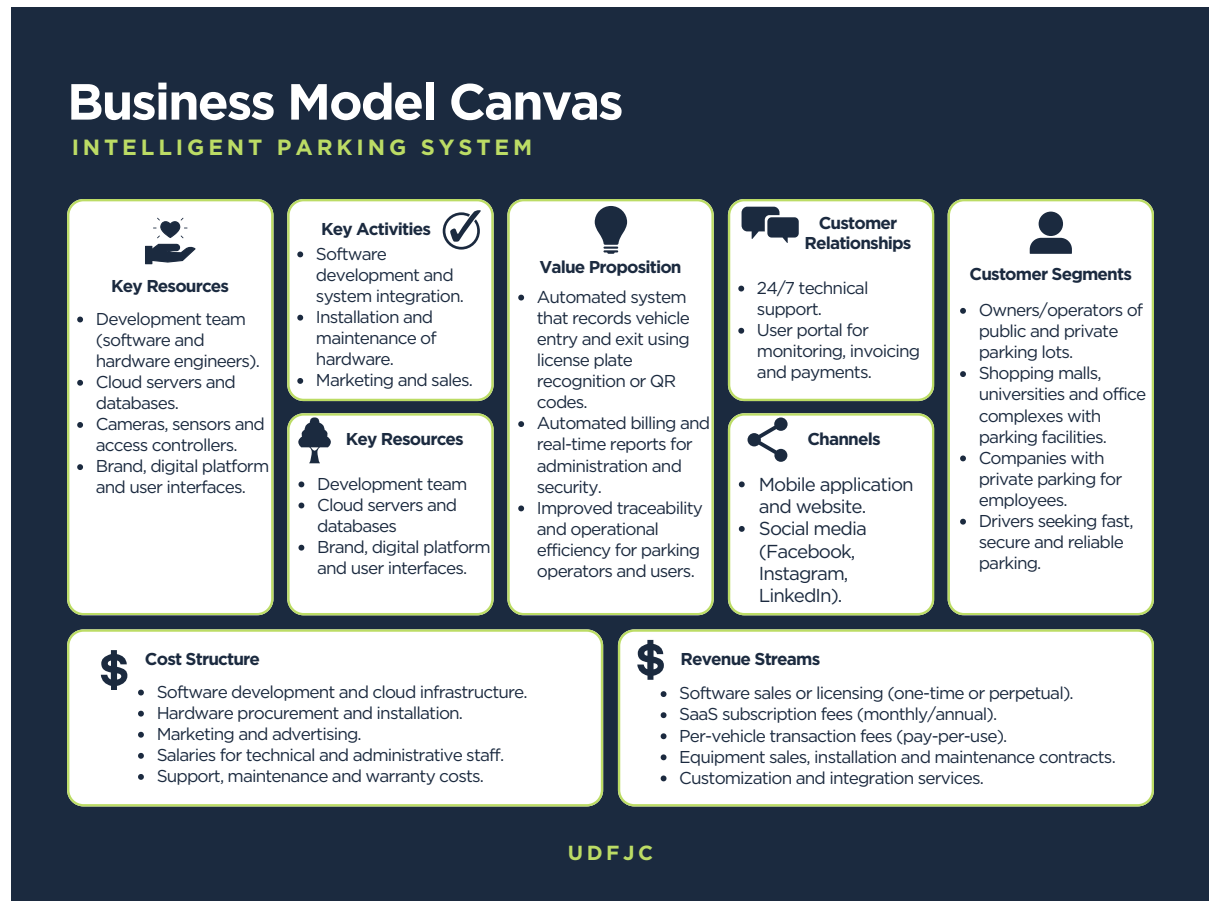


Figure 1: Business Model Canvas *Intelligent Parking System*. The model represents the nine essential blocks of the business model canvas, highlighting the value proposition, customer segments, revenue streams, key resources, and strategic activities that support the smart parking system.

2 User Stories

2.1 User Story 1:

Title: Register Vehicle upon Entry	Priority: High	Estimate: 8 hours
User Story: As a user (who manages the system) , I want to register the vehicles entering the parking lot so that I can keep track of the vehicles and available parking spaces.		
Acceptance Criteria:		
Given: A vehicle enters the parking lot. When: The user inputs the vehicle's license plate number. Then: The system registers the vehicle's entry and assigns a parking space.		

2.2 User Story 2:

Title: Check Parking Space Availability	Priority: High	Estimate: 4 hours
User Story: As a user (who manages the system) , I want to check the availability of parking spots in real-time so that I can assign a free spot to each vehicle entering.		
Acceptance Criteria:		
Given: The parking lot is being monitored. When: A vehicle enters. Then: The system displays the available spots in real-time.		

2.3 User Story 3:

Title: Register Vehicle Exit	Priority: High	Estimate: 6 hours
User Story: As a user (who manages the system) , I want to register the exit of vehicles so that the parking space is updated as available.		
Acceptance Criteria:		
Given: The vehicle is ready to leave. When: The user logs the exit time. Then: The system updates the parking spot as available.		

2.4 User Story 4:

Title: Vehicle Exit Notification	Priority: Medium	Estimate: 5 hours
User Story: As a user (who manages the system) , I want to receive notifications when a vehicle is about to exit so that I can efficiently manage parking space usage.		
Acceptance Criteria:		
Given: A vehicle is about to exit. When: The vehicle is nearing its exit time. Then: The system sends an automated notification to the user.		

2.5 User Story 5:

Title: Generate Vehicle Entry and Exit Report	Priority: Medium	Estimate: 10 hours
User Story: As a user (who manages the system) , I want to generate reports on vehicles that have entered and exited so that I can conduct audits and analyze parking occupancy.		
Acceptance Criteria:		
Given: Vehicles have entered and exited the parking lot. When: The user requests a report. Then: The system generates a downloadable PDF/Excel file with vehicle entry and exit data.		

2.6 User Story 6:

Title: View Parking Lot Occupancy Statistics	Priority: Medium	Estimate: 8 hours
User Story: As a user (who manages the system) , I want to view parking lot occupancy statistics so that I can make informed decisions about space management.		
Acceptance Criteria:		
Given: The system tracks parking lot usage. When: The user accesses the statistics section. Then: The system displays graphs of occupancy levels by day, week, and month.		

2.7 User Story 7:

Title: Manage User Roles and Permissions	Priority: High	Estimate: 7 hours
User Story: As an administrator (owner of the parking lot) , I want to manage user roles and permissions so that I can control who has access to the system's functionalities.		
Acceptance Criteria:		
Given: Users are registered in the system. When: The administrator assigns roles. Then: The system applies the correct permissions for each role (User, Admin).		

2.8 User Story 8:

Title: User Authentication	Priority: High	Estimate: 6 hours
User Story: As a user (who manages the system) , I want to authenticate securely to access my parking history so that my data is protected.		
Acceptance Criteria:		
Given: The user has an account. When: The user inputs their login credentials. Then: The system verifies the credentials and grants access.		

3 User Story Mapping



4 CRC Cards

Class	Vehicle
Responsibilities	Collaborators
Known its own license plate Known its own car type Known its own brand Known its user owner	Slot User Register

Class	User
Responsibilities	Collaborators
Known its own id Known its user type Manage associated cars Known its own brand Known its user owner	Slot Vehicle Register

Class	Fee
Responsibilities	Collaborators
Known prices per hour Known prices by vehicle type Known special fees by user Apply discounts by user type	User Register

Class	Register
Responsibilities	Collaborators
Register vehicule entry Register vehicule departure Calculate vehicule parking time Calculete cost Apply user discounts Generate ticket	Vehicle User Fee slot

Class	Slot
Responsibilities	Collaborators
Know its own id Know if it's free Know its own slot type Reserve Get empty	Vehicle Register Area

Class	Area
Responsibilities	Collaborators
Know its own id Know its own name Know its own capacity Know its own slots disponibility	Slot Register