

## Smart doorbell

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Smart Doorbell app:

Number	Story name	As a	I want...	So that I...
1	Sign up	House owner user	To Be able to sign up with my email.	Can create an account for my smart doorbell.
2	login	House owner user	To be able to log in with my email and password.	Can access my smart doorbell account.
3	Email verification	House owner user	To receive a verification email after signing up.(cant login unless I verify!)	Can verify my email address and activate my smart doorbell account.
4	Welcome message	House owner user	To receive a welcome message on my first login.	Can understand the main features and benefits of the smart doorbell app.
5	Doorbell ring Notification	House owner user	To receive a notification when someone rings the doorbell, <b>even if the app is in the background or fully closed!</b>	Can be alerted immediately and take appropriate action.
6	Access/ Deny	House owner user	To be able to grant or deny access when someone rings the doorbell.	Can control who is allowed to enter my home.
7	Message to visitor	House owner user	To be able to add a custom message when granting or denying access.	Can provide specific instructions or reasons to the visitor

8	Auto Deny	House owner user	The app to automatically deny access if I don't respond within 1 minute. <b>Even when app is closed ofcourse.</b>	Ensure that visitor will get answer when I'm unavailable, and that no unauthorized person gains access if I am unavailable.
9	Today's Visitors Log	House owner user	To see a log of all visitors who rang the doorbell today.	Can keep track of who visited my home throughout the day
10	History page	House owner user	To view and save visitors' info from today's history to the all-time history page.	Can keep a permanent record of visitors that doesn't get deleted unless I choose to delete it.
11	Doorbell Password	House owner user	To view and change the doorbell password on the profile page.	Can manage and update the security settings of my smart doorbell.
12	Doorbell Keypad Reset	House owner user	To reset the doorbell keypad from the profile page if the password is entered incorrectly 3 times.	Can re-enable the doorbell to accept password input again
13	No WiFi Mode	House owner user	To see a no WiFi message when I enter the app and there is no internet connection.	Can check my connection and ensure the smart doorbell app functions properly
14	Sign out	House owner user	To be able to sign out of my account	Can log out and have ability to log in another account in case I want to login into another account.

## Doorbell:

Number	Story name	As a...	I want...	So that I...
14	Doorbell starting point message on screen	Visitor/owner user	To see a message on the screen with instructions to either ring the bell or enter the password, or just "ring the bell" if the password is disabled	Know how to interact with the doorbell system effectively
15	Doorbell button	Visitor user	To be able to ring the doorbell by pressing a button.	Can alert the house owner of my presence
16	Doorbell ringing sound	Visitor user and house owner user	The bell to ring (sound) when visitor press the doorbell button.	Know that the doorbell has been activated, and visitor presence has been alerted to the house owner.
17	Doorbell ringing message	Visitor user	To see a "ringing" message on the screen when I ring the doorbell	Know that the doorbell is ringing, and my presence has been alerted to the house owner
18	Access/deny answer	Visitor user	To receive an access or deny response (on screen) after ringing the bell, with message from the owner (if he wrote one)	Know whether I am granted or denied access and understand any additional instructions or reasons
19	2 ringtones for Access/deny	Visitor user	To hear different ringtones for access granted and access denied responses after ringing the bell	Can immediately understand whether I am granted or denied access based on the ringtone

20	Doorbell Password Access	Family member user	To enter the doorbell password and get access if the password is correct, or be denied if the password is incorrect (if I wrote password wrong 3 times, doorbell won't accept anymore password attempts, unless reset from app)	Can gain entry to the house if I have the correct password or be informed that access is denied if the password is incorrect
21	Delete numbers	House owner user	To be able to delete numbers on doorbell	Can rewrite the password if I write it wrong
22	Wifi/no wifi led	Visitor/owner user	To see a red LED blinking on the doorbell when there is no Wi-Fi, and non blinking red light when there is Wi-Fi.	Know that the doorbell is connected or not connected to the internet and as a visitor to know that in case the led is blinking (no Wi-Fi)my ring may not be registered in app

### Corner cases we took care of in our project:

1. Doorbell wifi/no wifi led (blinking if no connection).
2. Doorbell works even when there is no Wi-Fi! even when there is no internet connection, the doorbell can still accept password, if user writes a correct password, the doorbell gives access with access ringtone, and if user enters wrong password, the user will get deny answer with deny ringtone. Meaning that doorbell can still works for house owner to enter the house. User can also ring the bell when there is no Wi-Fi, this won't appear on app since there is no Wi-Fi, but due to the doorbell ringing ringtone, house owner can still hear the doorbell ringing and can open door physically.
3. App no internet mode to let owner know that there is no connection and he won't get notifications from app.
4. We used firebase functions to update doorbell state to access/deny/automatic deny/starting point and not app code , and that's because it's important that doorbell state in firebase is updated always accordingly, for example if owner got notified that someone is ringing the bell, and he gave access but suddenly the phone battery died, it's important that doorbell state returns to starting point ( 0 state, meaning it accepts again any visitor/password attempt), if doorbell state was updated from app code, then it would be stuck in access state in this case, not going back to 0 state (until owner reopens the app .. which is not convenient), which is not good, so using firebase functions that change doorbell state accordingly solved this corner case! Owner can give access/deny and whatever happens to his phone/ he closes the app immediately; it doesn't affect the fact that doorbell state changes accordingly at the right time. This is also important for auto deny, that should be given after 1 minute of owner not answering, even when he doesn't enter the app of course ...
5. The 3 password attempts were important for us to add because this way owner can be sure that no one outside his house has infinite attempts and eventually guessing the password right and entering the house. , doorbell can accept passwords again only if enabled from app.
6. only one account can be opened with doorbell unique id, and that's due to security reasons, for example what if the neighbours somehow knew the doorbell unique id !? , they can open a new account with this id, and get access to the doorbell!. with one account only, Family members can have email and password for the doorbell account and login, only house owner (who created the account) decides who he will give account login info to...