



# Master Your Memory

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## **Overview:**

Master your memory is a memory game derived from cognitive tasks to enhance the player's different mental skills. This app is composed of three levels of difficulty, Easy, Medium and Hard. Additionally, the app enables the player to select cards in different categories like animals, ice-creams, etc. There is a provision for the players to view high score. While doing so the player can also create his profile where he can manage background sounds and other settings. So, when a player selects a certain category the background changes accordingly. For example, if a player chooses cards from animal category to be displayed the background will have some kind of feature that is related to animals.

Thus, it is an app for kids and adults to get a brain work out anywhere, anytime.

## **Application Requirements:**

Min SDK Version: 15

## **Features/Requirement List:**

- Create account using email address
- Edit profile settings
- Password recovery settings
- Category for card images.
  - Animals, Birds, Logos, Christmas, Food, Cartoon.
  - Main game background changed according to chosen category.
  - Main game grid images depend on selected category.
- Different levels of difficulty.
  - Easy, Medium, Hard
  - Grid size change based on selected difficulty
  - Time cost change based on selected difficulty
- Multiple languages option
  - English, Spanish, Chinese
- Colorful images easy to remember
- Funny background sound
- Sound can On/Off by user through setting
- Different Sound on every correct match or incorrect match
- Digital visual effects

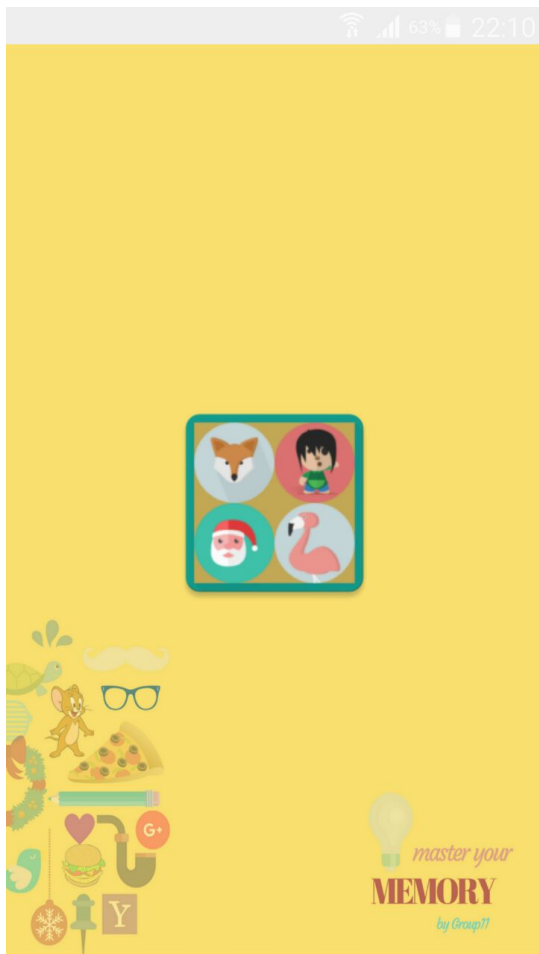
## User Interface:

1. When user first opens the app, a splash screen is displayed after that **Login** screen will be displayed
2. User can register the email address by selecting Register New User from Login screen which will redirect to **Register** Screen
3. User can know game rules and also how to play before registering to app by selecting how to play on Login screen which will redirect it to **Help** screen
4. **Forgot password** link is also available to recover password.
5. After successful login, a **Home** screen is displayed
  - a. Select Category  
Animals, Birds, Logos, Christmas, Food, Cartoon.  
User Selects on category after that **Level Dialog** Prompt appear to select difficulty level. After that it will redirect to **Game** Screen.
  - b. Application Top Score  
User can know application top score.  
Highest level of game shows for all 3 categories.
  - c. User Score  
User's highest score appear for all 3 categories.
  - d. Settings  
User can change the settings of application. E.g. Edit Profile, Sound, Language
  - e. Help  
User can learn how to play and game rules.
6. Clicking **Setting** user can select language from English, Spanish and Chinese. User can set background sound on/off.
7. Clicking **Help** user can watch video of how to play game and read rules.

## USER INTERFACE SCREENS:

### Screen 1: Splash Screen:

- This is the splash screen that will be displayed when the app is started. Based on the login identity two operations are possible after the screen is displayed
  1. If a user has previously logged in, it will directly display the Home
  2. Else it will display the login page

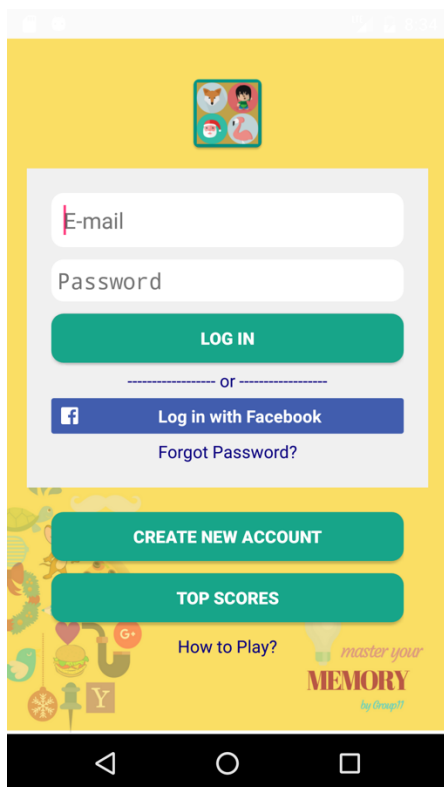


## Screen 2: Login Screen:

- Existing user will get an option to login the game.
- User can also register with there google account.
- For New user, there will be an option to register to the game.
- User will have an option to see the top score.

### Transition:

- a. Login button click → This event will take existing user to the home screen.
- b. Facebook Login click →
- c. Register Button click → This event will take the new user to the registration page.
- d. Top score Button click → This event will show the overall top scorer's screen.
- e. Forgot password link → This will redirect user to the forgot password screen.

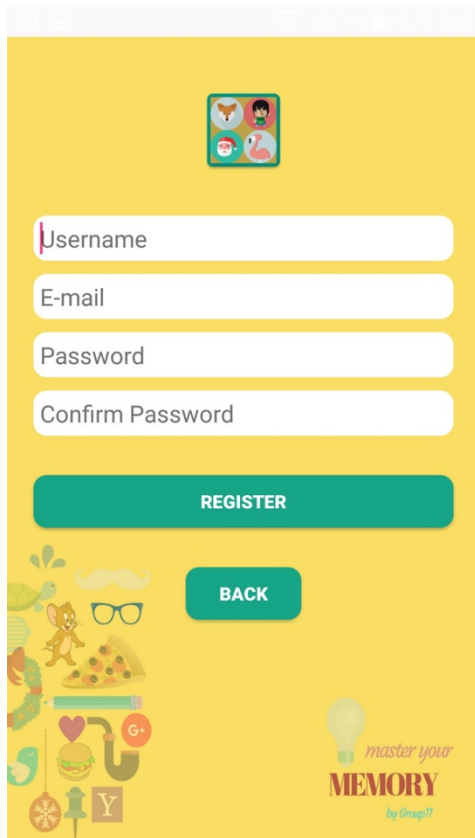


### Screen 3: Registration Screen:

- Here new user can register with his/her details.

#### Transition:

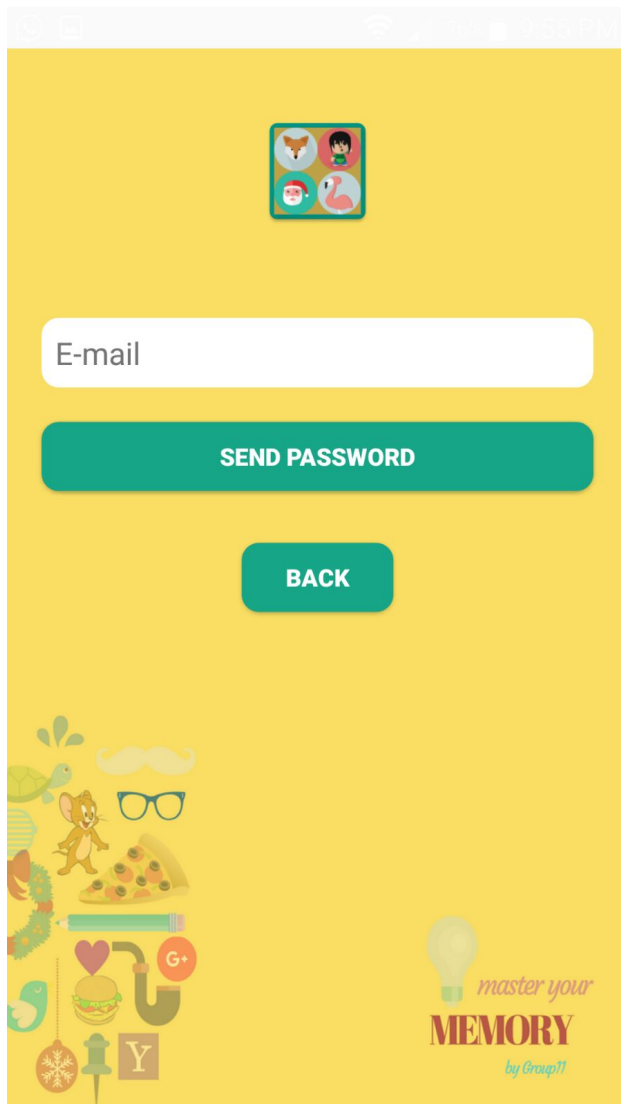
- a. Register button click → This event will take user to the login screen to do login.
- b. Back button click → This event will take user to the login screen.



The image shows a mobile app registration screen with a yellow background. At the top, there is a small square icon containing four circular avatars. Below this, there are four white input fields with rounded corners, each containing a placeholder text: "Username", "E-mail", "Password", and "Confirm Password". Under the input fields is a large green button with the word "REGISTER" in white capital letters. To the left of the "REGISTER" button is a vertical strip of colorful icons including a bird, a mustache, glasses, Jerry the mouse, a pizza, a heart, a burger, a snowflake, and a letter 'Y'. To the right of this strip is a smaller green button with the word "BACK" in white capital letters. In the bottom right corner, there is a logo featuring a lightbulb and the text "master your MEMORY by Group11".

#### Screen 4: Forgot Password Screen:

User can enter registered email id and password will send to given email.



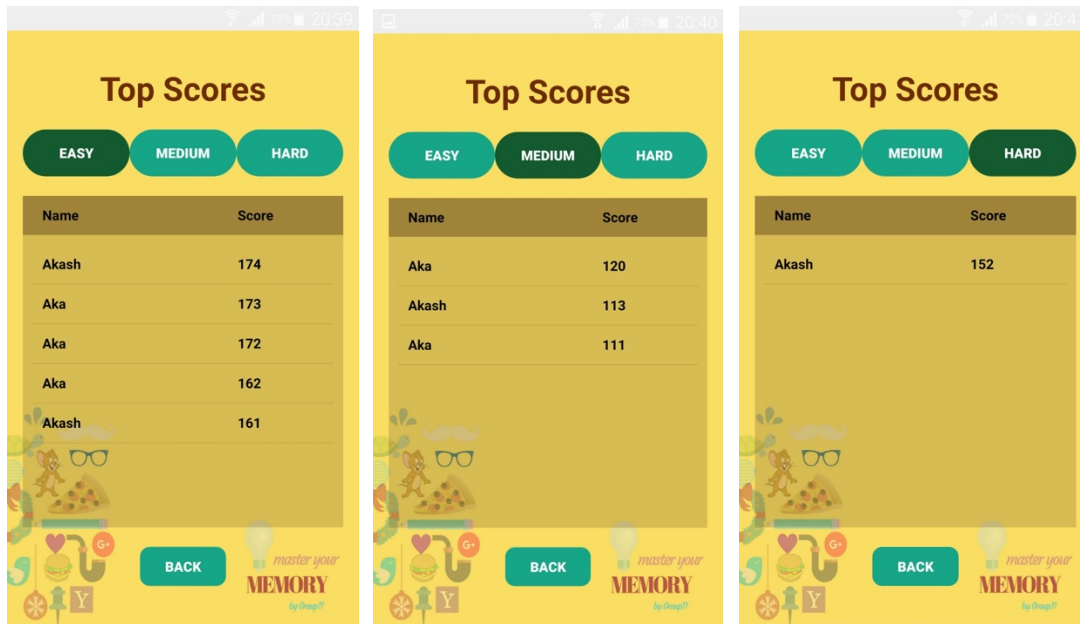


## Screen 5: Top Score Screen:

- Here user can view details of top scorers based on levels.

### Transition:

- a. Back button click --→ This event will take user to the login screen.

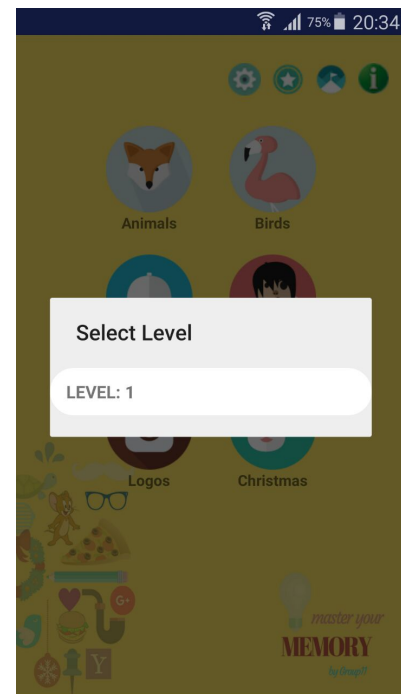
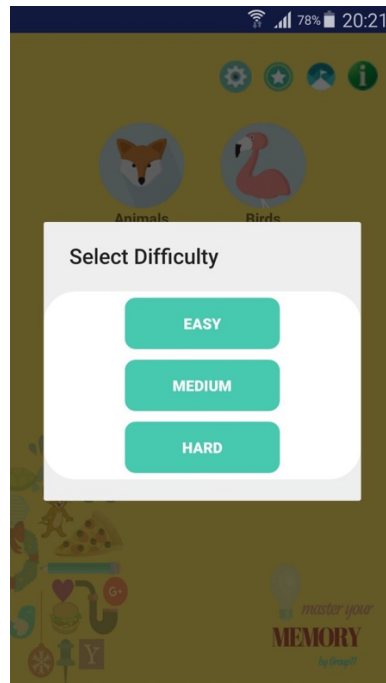
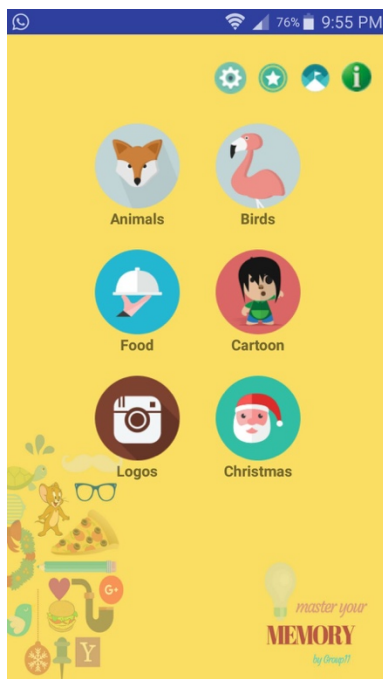


## Screen 6: Home Screen:

- Here user can select the game preferences like category and game level.
- The category selection options will give user options like animals, Ice cream logos, etc.
- According to selected category grid background of game will change. i.e. if user has selected animals as category background will change with some background containing animal images.
- There will be different levels like Easy, Normal, Hard and user can select any one option to play with. This option will only be available after category selection.
- Prompt menu appear to select level of difficulty.
- User can see his/her scores by clicking score event.

### Transition:

- a. Select on category → This event open Level selection Prompt.
- b. Score Button click → This event will show user current scores based on level.
- c. Level Selection Dialog Prompt → Here user can select different levels from prompt.
- d. Help Button click → This event will show user the game rules.
- e. Setting Button Click → This will open setting dialog prompt.

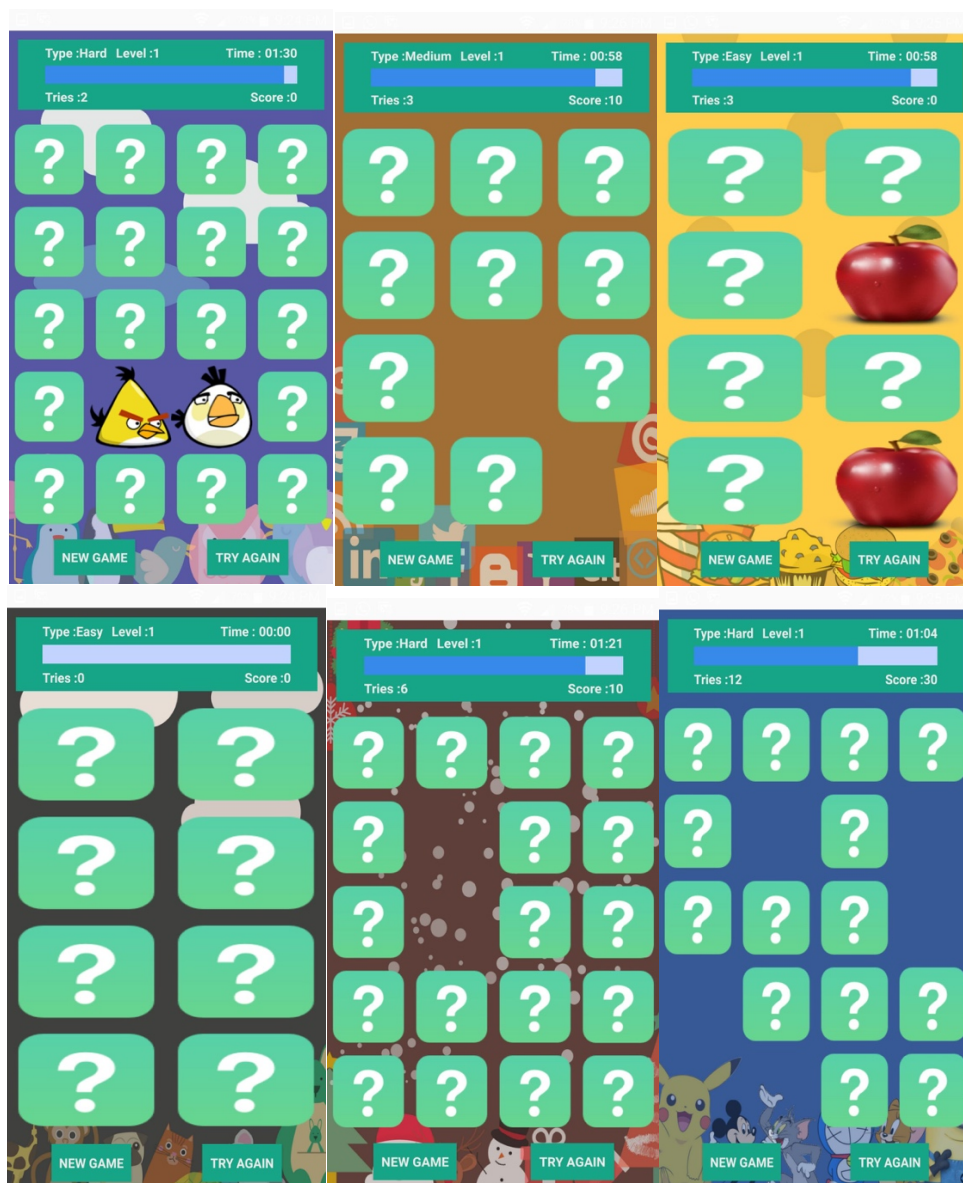


## Screen 7: Main Game Screen:

- Here logged in user will play the game based on selected levels and categories from home screen.
- Progress bar will show the remaining time.
- User need to complete the game within given time period. Score will be calculated based on correct selection of grid and time elapsed by user.
- Following diagrams shows the flow of game. If images pair matches that will disappear from the grid.

### Transition:

- Try again button click → This event will start the current game again.
- New game Button click → This event will take user to home screen.

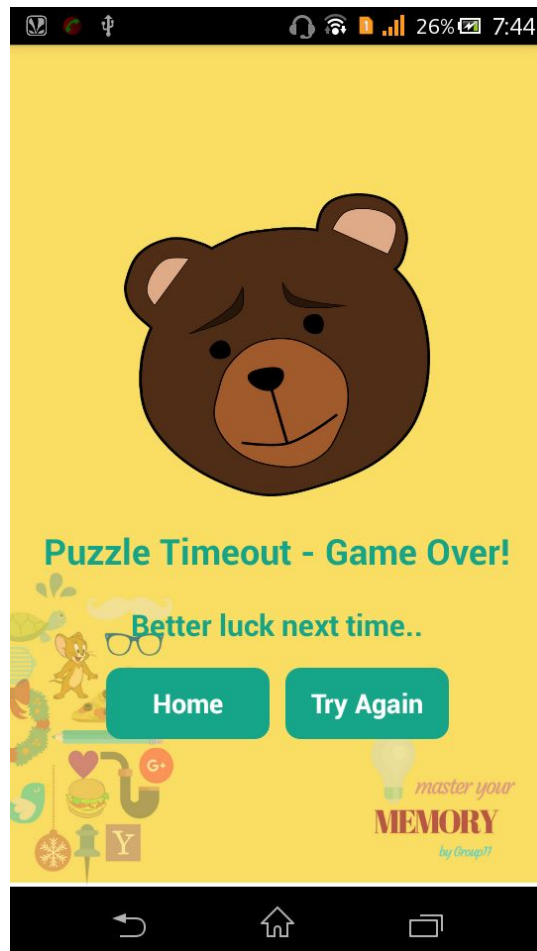
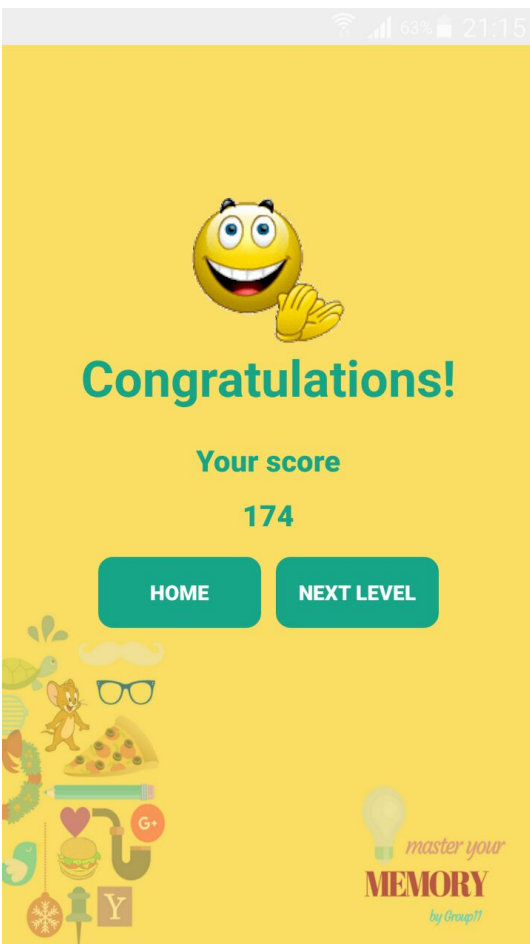


### Screen 8: End Game Screen:

- Here user can see his/her score details after the game is completed.
- If user failed to complete within time then Game over screen will be shown.

#### Transition:

- a. New Game button click → This event will take user to home screen and will save his/her score in personal profile

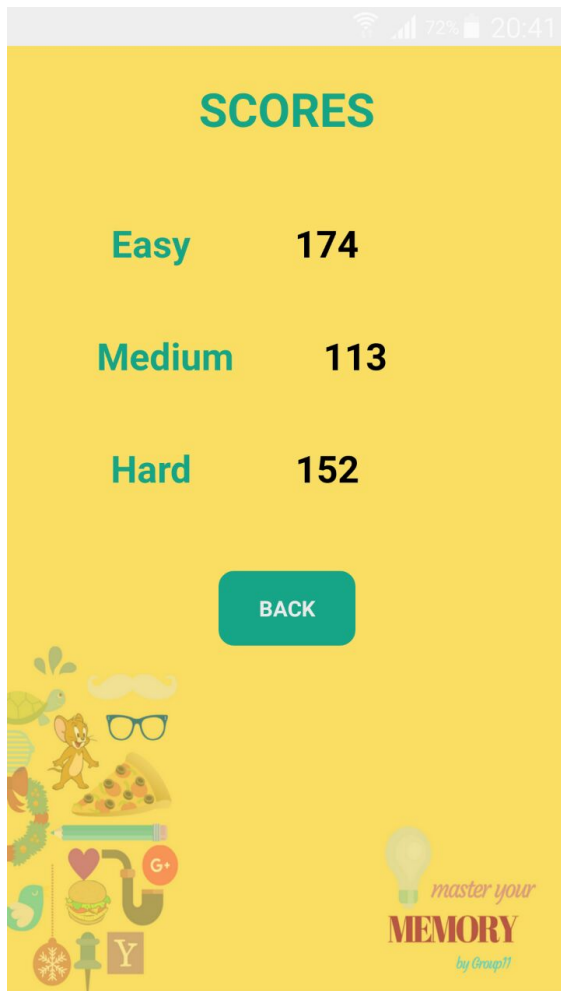


### Screen 9: My Score Screen:

- Here logged in user can view his/her scores based on level played by him/her.

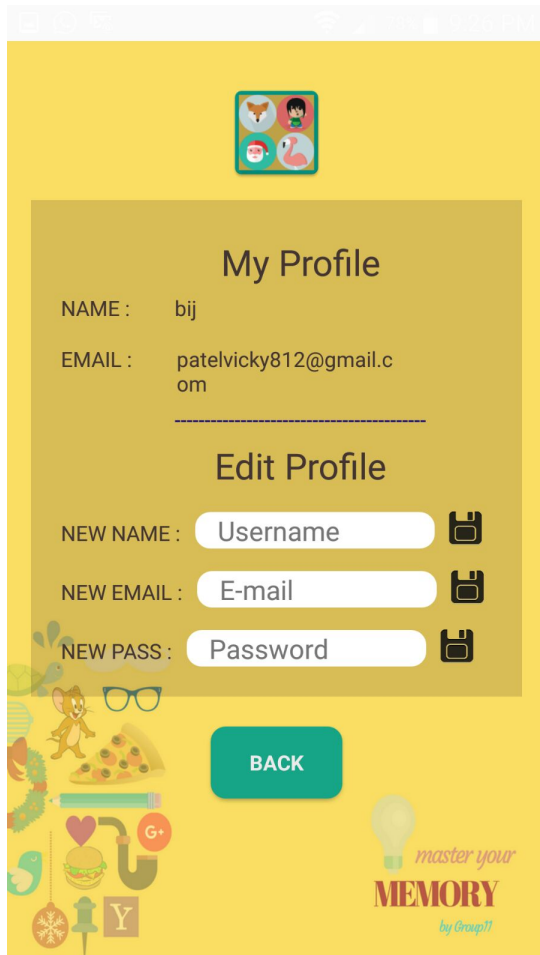
#### Transition:

- a. Back button click → This event will take user to the home screen.



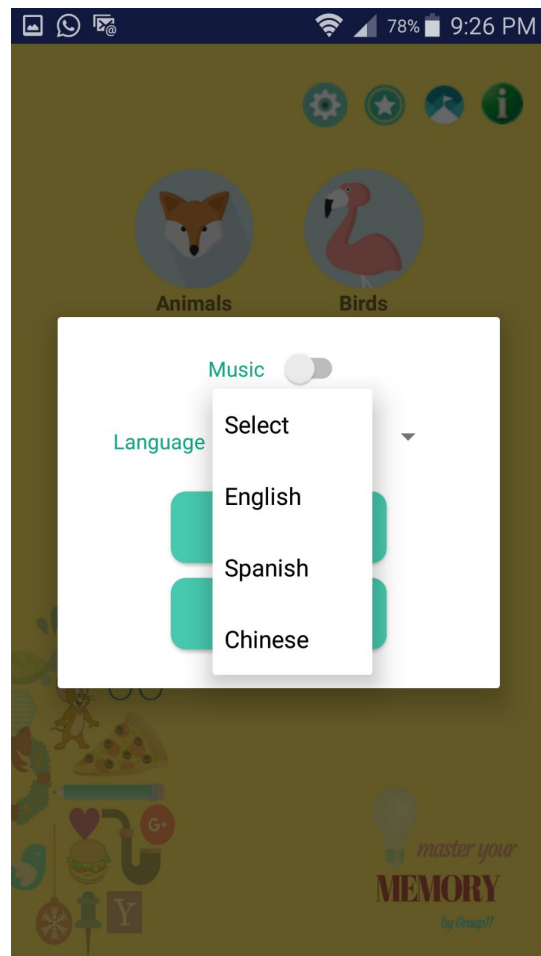
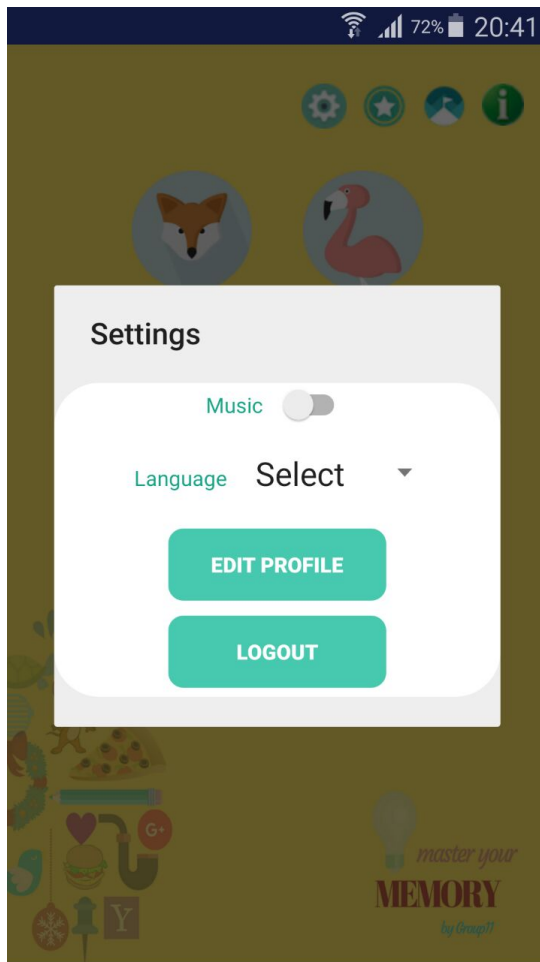
### Screen 10: Edit Profile Screen:

- User can edit Name, Email address and Password.



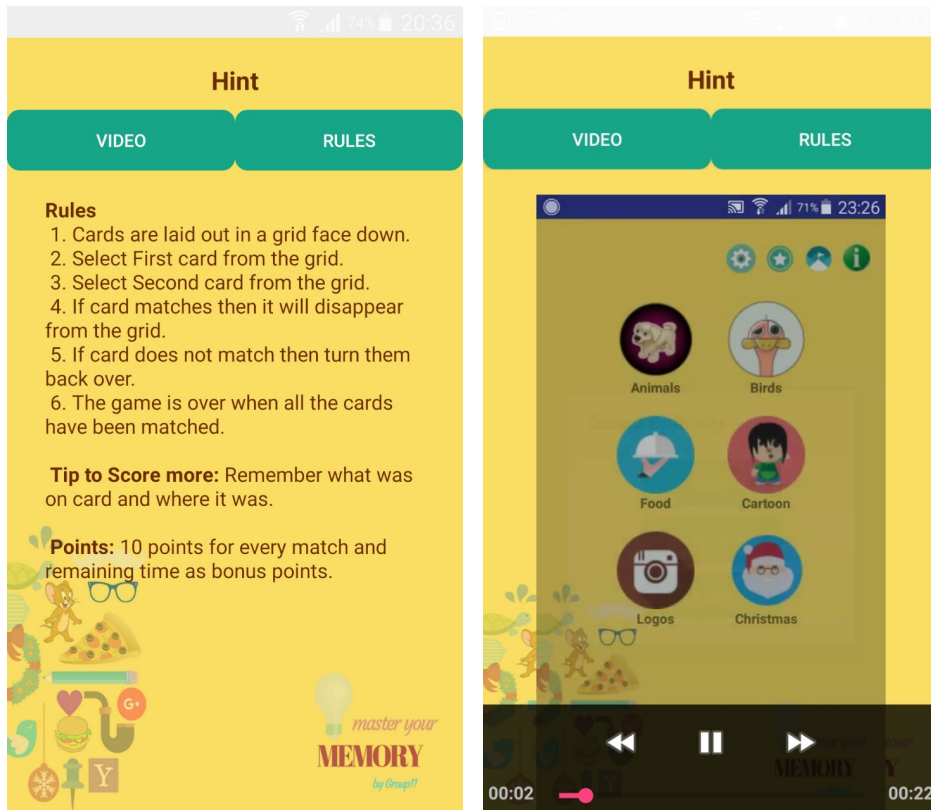
### Screen 11: Setting Prompt Screen:

- User can on/off background sound.
- User can select language
- By Click log out It will logout user.



## Screen 12: Help Screen:

- There will be two options. Rules (default) and Video.
- Rules -> It will display how to play and tip to score more
- Video -> It will show video





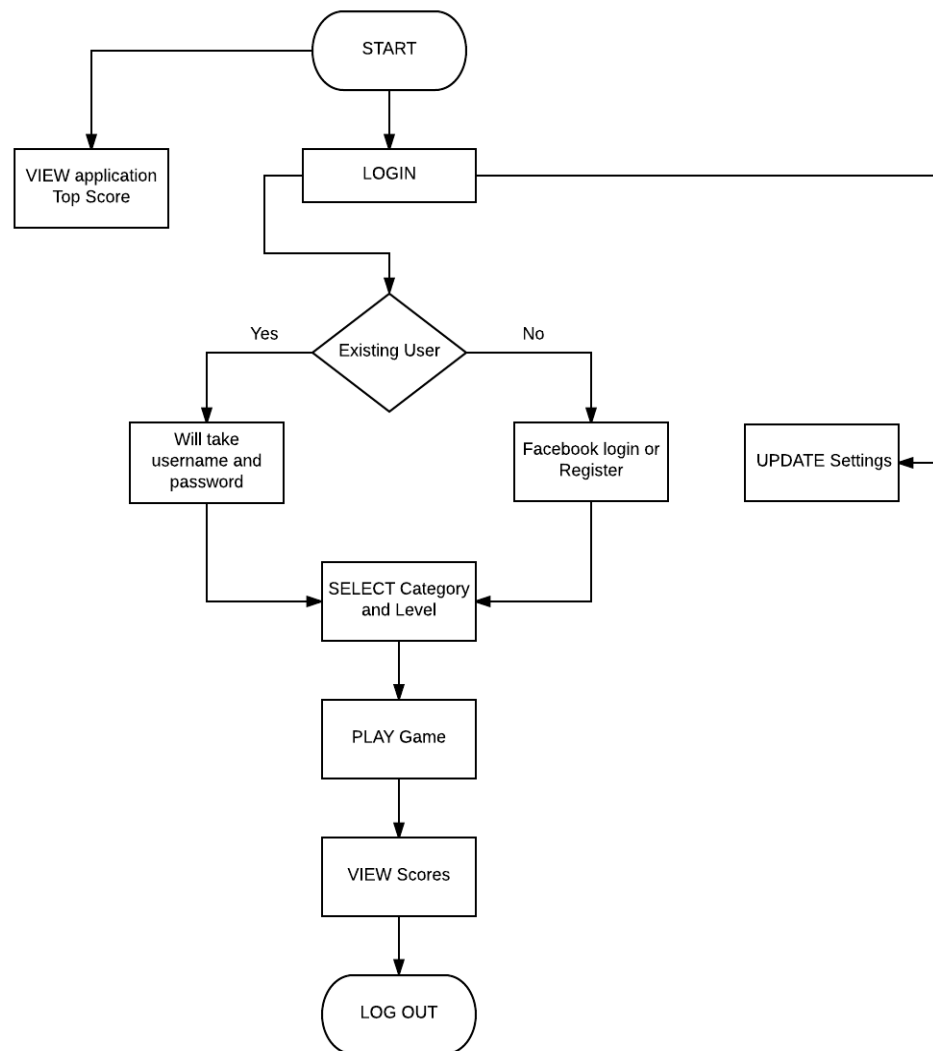
## Transition Flow of Screens:



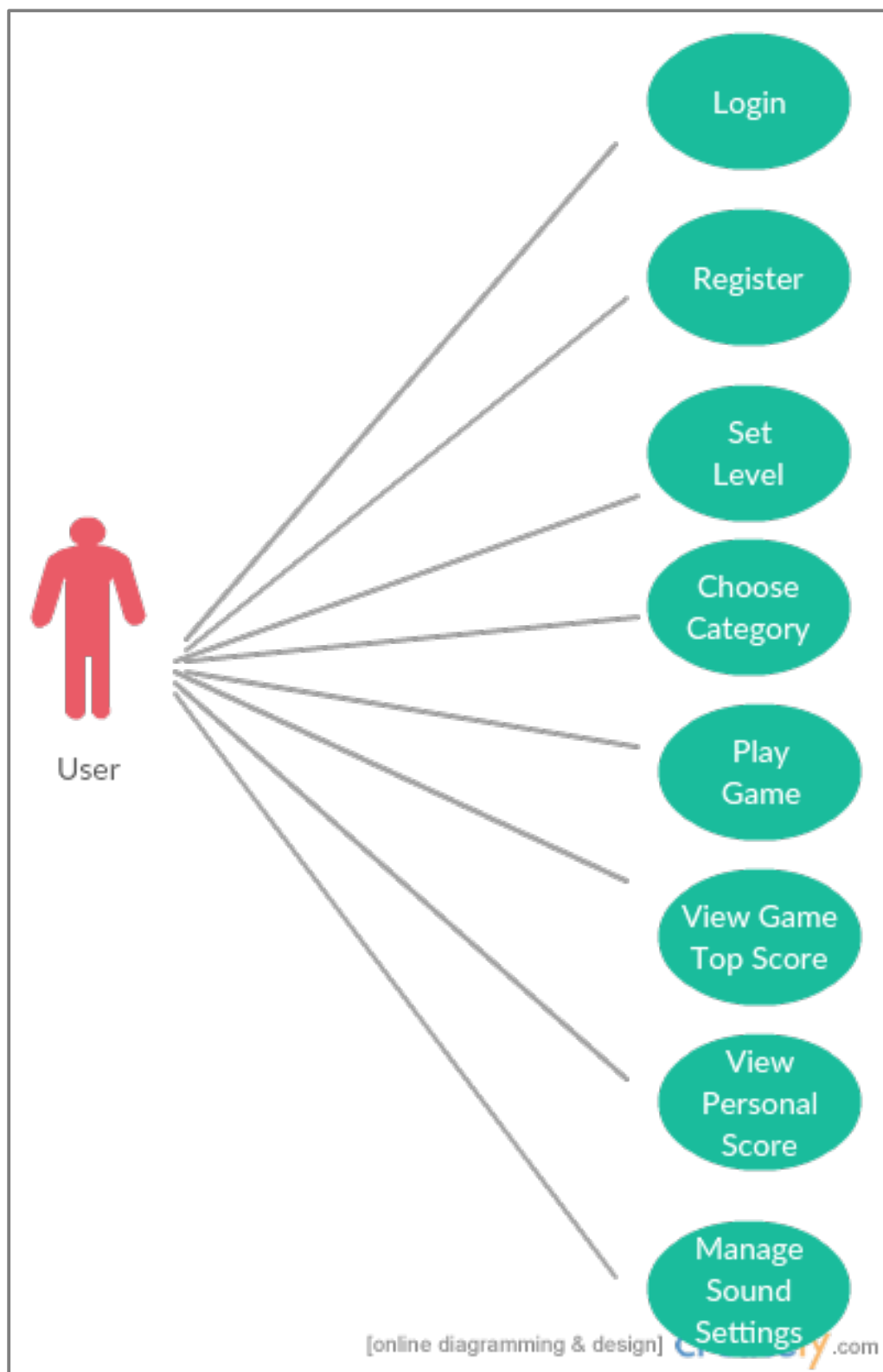


## DIAGRAMS:

### Flow Chart Diagram:



### Use Case Diagram for User Activities:



## Test Cases:

**Test Scenario** Login screen: login without entering email and password

Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Click LOG IN button	Login should fail with the message: Please enter email address.	As Expected	Pass

**Test Scenario** Login screen: login with wrong email format

Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Enter wrong email format in E-mail field	Login should fail with the message: Invalid email address. Please enter proper email address.	As Expected	Pass
2	Click LOG IN button			

**Test Scenario** Login screen: login with proper email but no password

Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Enter valid email in E-mail field	Login should fail with the message: Password should be more than 4 characters.	As Expected	Pass
2	Leave Password field blank			
3	Click LOG IN button			

Test Scenario	Login screen: login with wrong email/password
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Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Enter valid email in E-mail field	Login should fail with the message: Invalid email or password.	As Expected	Pass
2	Enter wrong password more than 4 characters			
3	Click LOG IN button			

Test Scenario	Login screen: Forgot Password?
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Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Click on Forgot Password? button	Forgot password screen should appear.	As Expected	Pass

Test Scenario	Login screen: Create new account
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Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Click on CREATE NEW ACCOUNT button	Register screen should appear.	As Expected	Pass

Test Scenario	Login screen: Top Scores
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Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
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1	Click on TOP SCORES button	Top Scores screen should appear.	As Expected	Pass
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Test Scenario Login screen: How to Play?

Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Click on How to Play? button	Help screen should appear.	As Expected	Pass

Test Scenario Register user with incorrect email format

Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Enter user name, password and retype password	Invalid email address. Please enter a valid email address.	As Expected	Pass
2	Add incorrect email format			
3	Press register button			

Test Scenario Register user without user name

Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Enter email, password and retype password	Please enter user name.	As Expected	Pass
2	Do not enter user name			
3	Press register button			

Test Scenario	Register user without password
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Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Enter email, user name, password and retype password	Password mismatch. Please enter password once again.	As Expected	Pass
2	Do not enter password or retype password			
3	Press register button			

Test Scenario	Register user with small password
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Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Enter user name, password and retype password	Password length is too short. It should be more than 4	As Expected	Pass
2	Enter password with less than 4			
3	Press register button			

Test Scenario	Register user with mismatch of password and confirm password
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Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Enter email user name and password	Password mismatch please check it once again.	As Expected	Pass
2	Enter confirm password different from already entered password			



3	Press register button
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Test Scenario	Try registering already registered user
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Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Enter email, user name, password and confirm password all correctly.	User already existed.	As Expected	Pass
2	Enter email which is already used.			
3	Press register button			

Test Scenario	Register user successfully and return to login screen
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Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Enter email, user name, password and confirm password all correctly.	User registered successfully.	As Expected	Pass
2	Press register button			

Test Scenario	Change user name to another one
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Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Enter new username	User name has been updated successfully.	As Expected	Pass
2	Press save button			

Test Scenario Change email address

Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Enter new email	Email has been updated successfully.	As Expected	Pass
2	Press save button			

Test Scenario Change password of user's account

Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Enter new password	Password has been updated successfully.	As Expected	Pass
2	Press save button			

Test Scenario Check proper format for email id while sending password through forget password link

Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Enter invalid email	Please enter a valid email id	As Expected	Pass
2	Press send mail button			

Test Scenario Check unregistered email id while sending password through forget password link

Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Enter an unregistered email	Please enter a valid email id	As Expected	Pass
2	Press send mail button			

**Test Scenario** Send password through entered email Id through forget password link

Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Enter a registered email	Password has been sent to the registered mail id.	As Expected	Pass
2	Press send mail button			

**Test Scenario** Turn off or on background sound through switch button from setting

Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Click on setting in Home page.	Background music starts after dragging the switch to the right and music will be off after dragging it to the left.	As Expected	Pass
2	Drag the switch to right to turn on the background music or drag it to the left to turn it off.			

**Test Scenario** Language is not getting changed through setting

Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Click on setting in Home page	Language stays the same as it was.	As Expected	Pass
2	Select nothing from drop down.			

Test Scenario	Change application language through language change setting
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Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Click on setting in Home page	Language for whole application will be changed to selected language.	As Expected	Pass
2	Select desired language from the drop down.			

Test Scenario	Logout User
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Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Click on setting in Home page	User has been successfully logged out and returned to login screen	As Expected	Pass
2	Click on logout button in setting.			

Test Scenario	Congratulation page after game has been finished successfully.
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Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	User logged in successfully and lands in Home page	Congratulation page comes with calculated score and difficulty level after all the grids have been matched successfully.	As Expected	Pass
2	Click on available category to start playing game.			
3	All grids are matched in stipulated time period.			

Test Scenario	Provide written descriptions on how to play game
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Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Click on Help link in login screen	Page loads with details description of rules on how to play game.	As Expected	Pass
2	Click on written descriptions of rules to play game.			

Test Scenario	Play video on how to play the game
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Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Click on Help link in login screen	Video starts with all the rules for playing game	As Expected	Pass
2	Click on video to play.			
3	watch the details on how to play game.			

Test Scenario	Home screen: Selecting a category
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Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Select any category from Animals, Birds, Food, Cartoon, Logos or Christmas.	Select Difficulty dialog should appear.	As Expected	Pass

Test Scenario	Home screen: Selecting Level
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Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Select any category from Animals, Birds, Food, Cartoon, Logos or Christmas.	Select Level dialog should appear.	As Expected	Pass
2	Select EASY, MEDIUM or HARD from Select Difficulty dialog			

Test Scenario	Home screen: Start Game
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Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Select any category from Animals, Birds, Food, Cartoon, Logos or Christmas.	Game screen should appear.	As Expected	Pass
2	Select EASY, MEDIUM or HARD from Select Difficulty dialog			
3	Select LEVEL			

Test Scenario	Home screen: Help
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Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Click Help icon	Help screen should appear.	As Expected	Pass

Test Scenario	Home screen: Top Scores
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Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Click Top Scores icon	Top Scores screen should appear.	As Expected	Pass

Test Scenario	Home screen: My Scores
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Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Click My Scores icon	My Scores screen should appear.	As Expected	Pass

Test Scenario	Home screen: Settings
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Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Click Settings icon	Settings dialog should appear.	As Expected	Pass

Test Scenario	Game screen: Initial status
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Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1		Screen background should be as per the selected category. Type and level should be as per the user selection. Tries and Score should be zero. Time should not be started and all cards should be face down.	As Expected	Pass

Test Scenario	Game screen: Timer
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Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Click on any card.	Timer should start.	As Expected	Pass

Test Scenario	Game screen: Tries
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Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Click on any card.	Tries should be increased by 1.	As Expected	Pass
2	Click on any other card.			



Test Scenario	Game screen: Score
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Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Click on any card.	If both the card matches, Score should be increased by 10.	As Expected	Pass
2	Click on any other card.			

Test Scenario	Game screen: game play
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Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Click on any card.	If both the card matches, they should disappear else they should be turned back again.	As Expected	Pass
2	Click on any other card.			

Test Scenario	Game screen: sound
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Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Click on any card.	If both the card matches, some sound will be played else some other sound will be played.	As Expected	Pass
2	Click on any other card.			

Test Scenario	Game screen: try again
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Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Click on TRY AGAIN button.	Game screen should get reset.	As Expected	Pass

Test Scenario	Game screen: new game
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Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Click on NEW GAME button.	Home screen should appear.	As Expected	Pass

Test Scenario	Game screen: on complete
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Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Match all pairs of cards	Congratulations screen should appear.	As Expected	Pass

Test Scenario	Congratulations screen
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Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1		Your current game score should be visible.	As Expected	Pass

Test Scenario	Congratulations screen: Home
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Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Click HOME button	Home screen should appear.	As Expected	Pass

Test Scenario	Congratulations screen: Play next level
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Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1	Click NEXT LEVEL button	New game with same category and difficulty should start with next level	As Expected	Pass

Test Scenario	My Scores screen
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Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1		Your high scores should be visible for Easy, Medium and Hard difficulty.	As Expected	Pass

Test Scenario	Top Scores screen
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Step #	Step Details	Expected Results	Actual Results	Pass / Fail / Not executed / Suspended
1		Top 5 scores should be visible for each Easy, Medium and Hard difficulty.	As Expected	Pass