**Structure Diagram for Alphabet App**

```
┌──────────┐
│ Screen   │◄─────────────────────────────────────────────┐
│ 1 (start │                                              │
│ screen)  │                                              │
└────┬─────┘                                              │
     │                                                    │
     │  ┌────────┐  ┌────────┐  ┌────────┐  ┌────────┐  ┌────────┐  ┌────────┐
     └─►│Letter A│─►│Letter B│─►│Letter C│─►│Letter D│─►│Letter E│─►│Letter F│
        └────────┘  └────────┘  └────────┘  └────────┘  └────────┘  └───┬────┘
                                                                        │
                                                              ┌─────────┴──┐
                                                              │  Comple    │──► X
                                                              │    te      │
                                                              └────────────┘
```
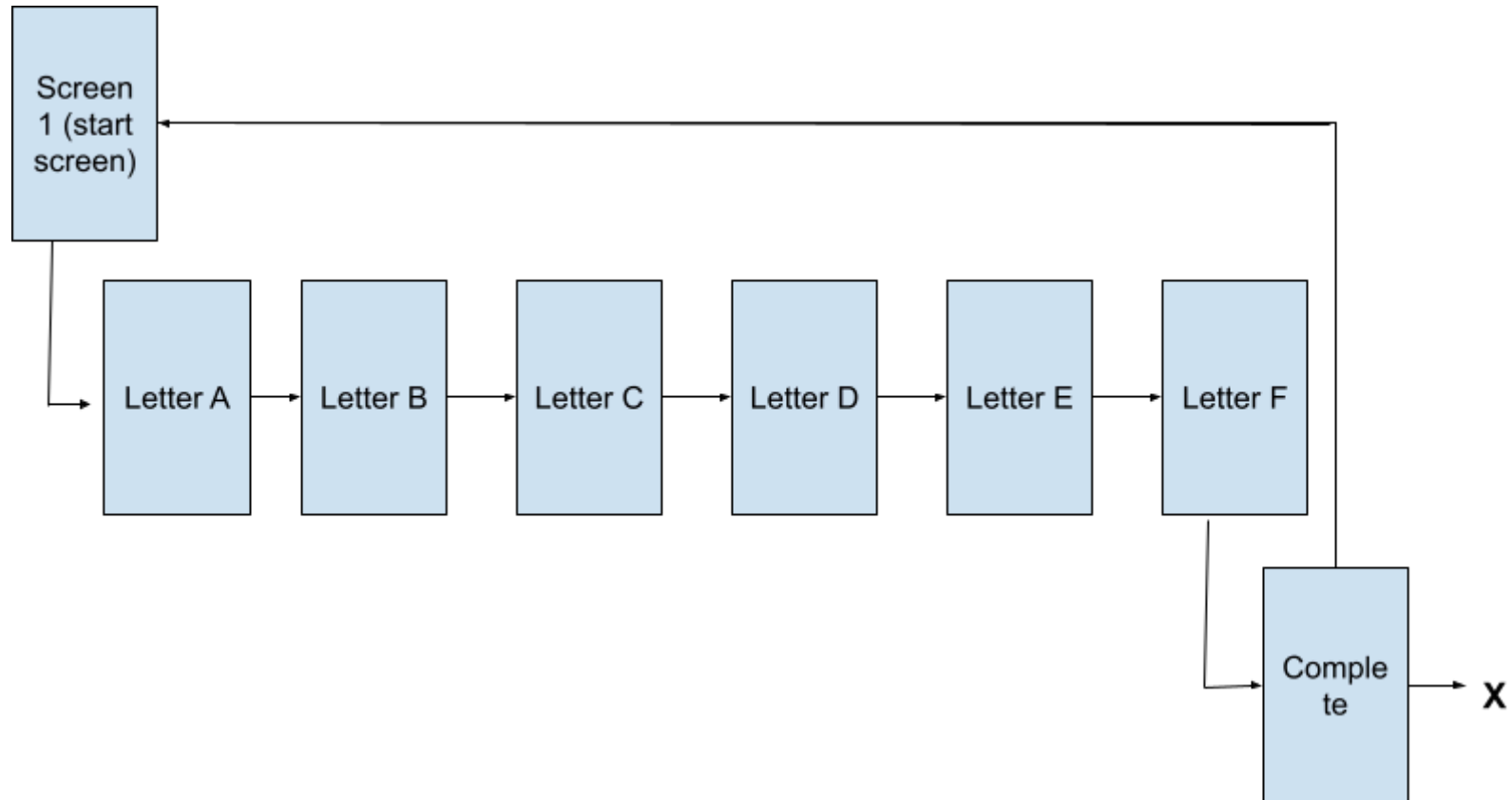
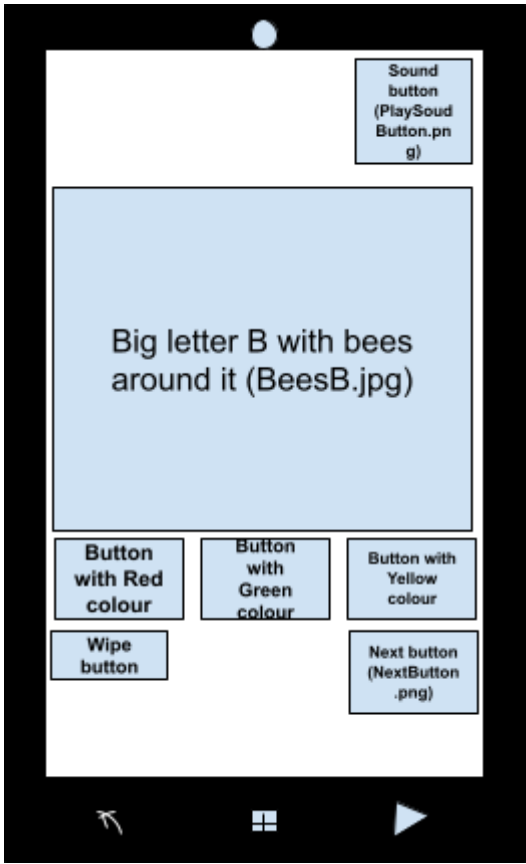**Screen Name: Screen1**

| Assets | Events (inputs & outputs) |
|---|---|
| learnToRead.jpg<br>atof.jpg<br>StartButton1.jpg | The Start button, which, if clicked, takes the young user to the first letter of the alphabet, the letter A. |

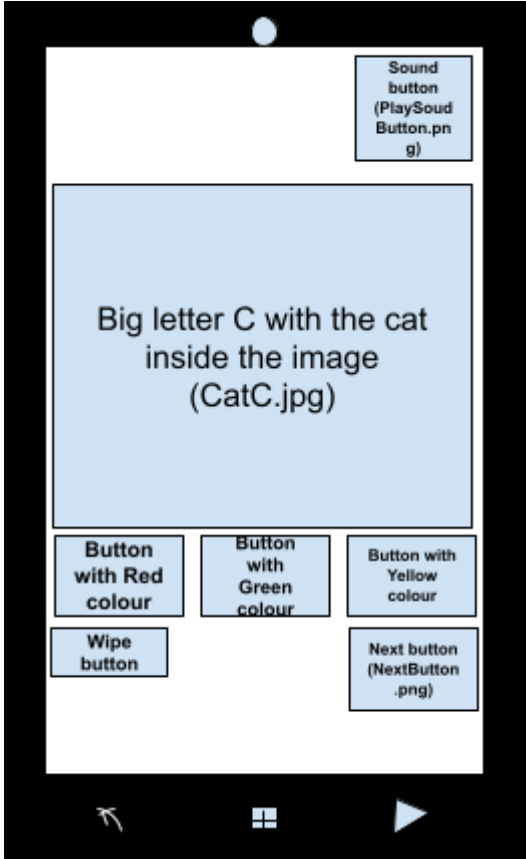| Design notes/ Alternative ideas | Method of solution (what does this screen do?) |
|---|---|
| Background color: Grey, because a more neutral background improves contrast, which guarantees letters stand out clearly<br>Fonts: Indie Flower because it looks very child-friendly, and simple Arial, color: multi-colored letters<br>Size of font: 24<br><br>1. Each letter can have different patterns within them (like rainbow hues, stripes, or dots) for making the letters feel fun and attractive.<br>2. Instead of a simple grey background, I can use a bright gradient (blues, pinks, or yellows) or a subtle pattern, like clouds or stars, keeping it bright and playful. This would add a sense of excitement and wonder overwhelming the young user.<br>3. Combine banner image and Letter A to F image into a single image | One of the user requirements says that the users of the App will be between 3 and 7 years old, so the user interface should be appealing to this age range and be simple to use. I met these user requirements by providing in my design bright colours, interesting fonts and multicoloured letters, so it will be attractive and fun. Also, the Start button will be noticeable, because it will contain a bright color, large letters and a children-friendly font, making it simple to use. |

Image of Learn to read text (learnToRead.jpg)

Image that says "Letters A to F" (atof.jpg)

Start button

**Screen Name: Letter A**



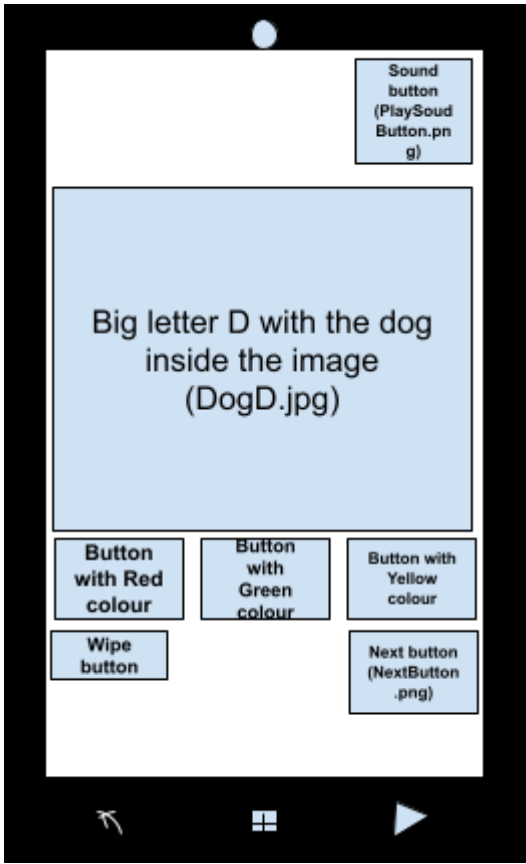| Assets | Events (inputs & outputs) |
|---|---|
| PlaySooundButton.png<br>AppleA.jpg<br>NextButton.png<br>AforApple.mp3 | Sound Button which if clicked plays a sound that says "A for Apple". Helping the young users to hear the letter.<br>Three buttons with Red, Green and Yellow colours that help the young users to draw on the screen. And the Wipe button helps to erase the drawings. Next buttons allow the young users to go to the next letters. |
| **Design notes/ Alternative ideas** | **Method of solution (what does this screen do?)** |
| Background color: Grey, because a more neutral background improves contrast, which guarantees letters stand out clearly<br>Fonts: Indie Flower because it looks very child-friendly, and simple Arial, Big read A letter with apples around it. Size of the A letter: 96, because it will be clearly visible<br><br>1. The sound button could be at the button at the page<br>2. Can be provided only one colour to draw<br>3. The background colour might be bright (purple or green) | One of the user requirements says that the app will need to help the users recognise the shapes and sounds of letters of the alphabet. I met this user requirement by providing the sound button that says "A for Apple" at the top of my Letter A screen, also the image on this page contains the big letter A and the three buttons with colours, that allows the young users draw on it increasing the interactiveness and child-friendliness of the app. And this page also contains many bright colours and large sized letters that meet the user requirements that says that the user interface should be appealing to the 3-7 age range and be simple to use. |

**Screen Name: Letter B**



| Assets | Events (inputs & outputs) |
|---|---|
| PlaySooundButton.png<br>BeesB.jpg<br>NextButton.png<br>BforBees.mp3 | Sound Button which if clicked plays a sound that says "B for Bees". Helping the young users to hear the letter.<br>Three buttons with Red, Green and Yellow colours that help the young users to draw on the screen. And the Wipe button helps to erase the drawings. Next buttons allow the young users to go to the next letters. |

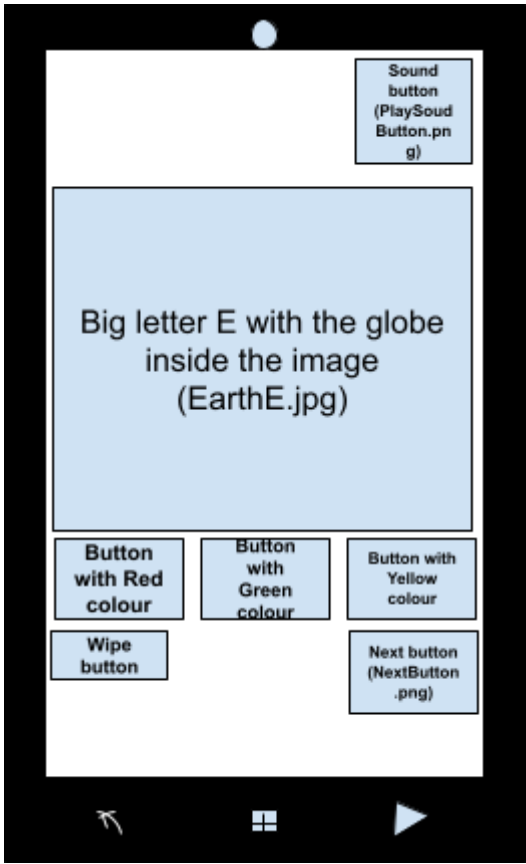| Design notes/ Alternative ideas | Method of solution (what does this screen do?) |
|---|---|
| Background color: Grey, because a more neutral background improves contrast, which guarantees letters stand out clearly<br>Fonts: Indie Flower because it looks very child-friendly, and simple Arial, Big brown B letter with bees around it. Size of the B letter: 96, because it will be clearly visible<br><br>1. The sound button could be at the button at the page<br>2. Can be provided only one colour to draw<br>3. The background colour might be bright (purple or green) | One of the user requirements says that the app will need to help the users recognise the shapes and sounds of letters of the alphabet. I met this user requirement by providing the sound button that says "B for Bees" at the top of my Letter B screen, also the image on this page contains the big letter B and the three buttons with colours, that allows the young users draw on it increasing the interactiveness and child-friendliness of the app. And this page also contains many bright colours and large sized letters that meet the user requirements that says that the user interface should be appealing to the 3-7 age range and be simple to use. |

**Screen Name: Letter C**

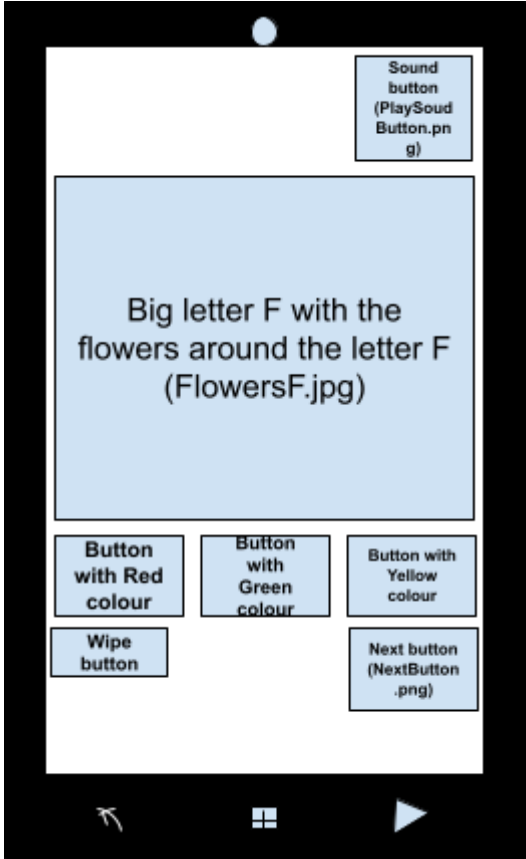| Assets | Events (inputs & outputs) |
|---|---|
| PlaySooundButton.png<br>CatC.jpg<br>NextButton.png<br>CforCat.mp3 | Sound Button which if clicked plays a sound that says "C for Cat". Helping the young users to hear the letter.<br>Three buttons with Red, Green and Yellow colours that help the young users to draw on the screen. And the Wipe button helps to erase the drawings. Next buttons allow the young users to go to the next letters. |
| **Design notes/ Alternative ideas** | **Method of solution (what does this screen do?)** |
| Background color: Grey, because a more neutral background improves contrast, which guarantees letters stand out clearly<br>Fonts: Indie Flower because it looks very child-friendly, and simple Arial, Big blue C letter with cat inside the image. Size of the C letter: 96, because it will be clearly visible<br><br>1. The sound button could be at the button at the page<br>2. Can be provided only one colour to draw<br>3. The background colour might be bright (purple or green) | One of the user requirements says that the app will need to help the users recognise the shapes and sounds of letters of the alphabet. I met this user requirement by providing the sound button that says "C for Cat" at the top of my Letter C screen, also the image on this page contains the big letter C and the three buttons with colours, that allows the young users draw on it increasing the interactiveness and child-friendliness of the app. And this page also contains many bright colours and large sized letters that meet the user requirements that says that the user interface should be appealing to the 3-7 age range and be simple to use. |

On the phone mockup:

Sound button (PlaySoud Button.png)

Big letter C with the cat inside the image (CatC.jpg)

Button with Red colour

Button with Green colour

Button with Yellow colour

Wipe button

Next button (NextButton.png)

**Screen Name: Letter D**



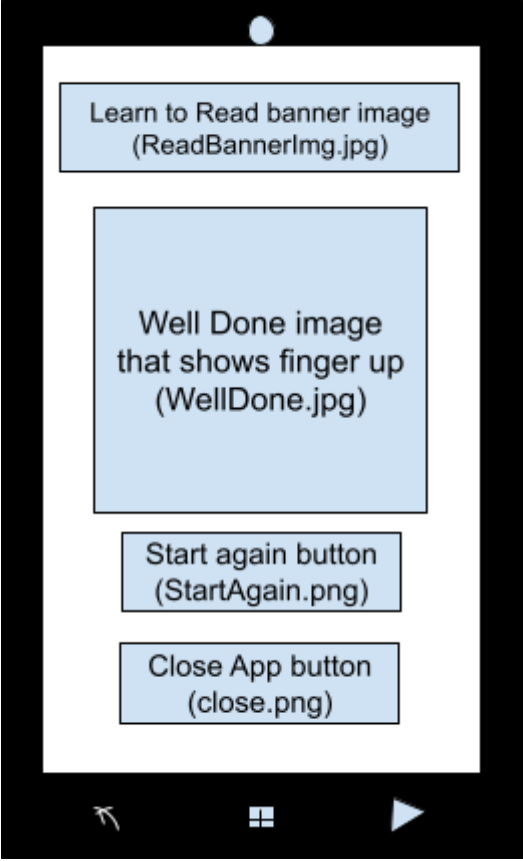| Assets | Events (inputs & outputs) |
|---|---|
| PlaySooundButton.png<br>DogD.jpg<br>NextButton.png<br>DforDog.mp3 | Sound Button which if clicked plays a sound that says "D for Dog". Helping the young users to hear the letter.<br>Three buttons with Red, Green and Yellow colours that help the young users to draw on the screen. And the Wipe button helps to erase the drawings. Next buttons allow the young users to go to the next letters. |
| **Design notes/ Alternative ideas** | **Method of solution (what does this screen do?)** |
| Background color: Grey, because a more neutral background improves contrast, which guarantees letters stand out clearly<br>Fonts: Indie Flower because it looks very child-friendly, and simple Arial, Big brown D letter with dog inside the image. Size of the D letter: 96, because it will be clearly visible<br><br>1. The sound button could be at the button at the page<br>2. Can be provided only one colour to draw<br>3. The background colour might be bright (purple or green) | One of the user requirements says that the app will need to help the users recognise the shapes and sounds of letters of the alphabet. I met this user requirement by providing the sound button that says "D for Dog" at the top of my Letter D screen, also the image on this page contains the big letter D and the three buttons with colours, that allows the young users draw on it increasing the interactiveness and child-friendliness of the app. And this page also contains many bright colours and large sized letters that meet the user requirements that says that the user interface should be appealing to the 3-7 age range and be simple to use. |

**Screen Name: Letter E**



| Assets | Events (inputs & outputs) |
|---|---|
| PlaySooundButton.png<br>EarthE.jpg<br>NextButton.png<br>EforEarth.mp3 | Sound Button which if clicked plays a sound that says "E for Earth". Helping the young users to hear the letter.<br>Three buttons with Red, Green and Yellow colours that help the young users to draw on the screen. And the Wipe button helps to erase the drawings. Next buttons allow the young users to go to the next letters. |
| **Design notes/ Alternative ideas** | **Method of solution (what does this screen do?)** |
| Background color: Grey, because a more neutral background improves contrast, which guarantees letters stand out clearly<br>Fonts: Indie Flower because it looks very child-friendly, and simple Arial, Big Green E letter with globe inside the image. Size of the E letter: 96, because it will be clearly visible<br><br>1. The sound button could be at the button at the page<br>2. Can be provided only one colour to draw<br>3. The background colour might be bright (purple or green) | One of the user requirements says that the app will need to help the users recognise the shapes and sounds of letters of the alphabet. I met this user requirement by providing the sound button that says "E for Earth" at the top of my Letter E screen, also the image on this page contains the big letter E and the three buttons with colours, that allows the young users draw on it increasing the interactiveness and child-friendliness of the app. And this page also contains many bright colours and large sized letters that meet the user requirements that says that the user interface should be appealing to the 3-7 age range and be simple to use. |

**Screen Name: Letter F**

| Assets | Events (inputs & outputs) |
|---|---|
| PlaySooundButton.png<br>FlowersF.jpg<br>NextButton.png<br>FforFlowers.mp3 | Sound Button which if clicked plays a sound that says "F for Flowers". Helping the young users to hear the letter.<br>Three buttons with Red, Green and Yellow colours that help the young users to draw on the screen. And the Wipe button helps to erase the drawings. Next buttons allow the young users to go to the Complete page. |

| Design notes/ Alternative ideas | Method of solution (what does this screen do?) |
|---|---|
| Background color: Grey, because a more neutral background improves contrast, which guarantees letters stand out clearly<br>Fonts: Indie Flower because it looks very child-friendly, and simple Arial, Big purple E letter with globe inside the image. Size of the E letter: 96, because it will be clearly visible<br><br>1. The sound button could be at the button at the page<br>2. Can be provided only one colour to draw<br>3. The background colour might be bright (purple or green) | One of the user requirements says that the app will need to help the users recognise the shapes and sounds of letters of the alphabet. I met this user requirement by providing the sound button that says "F for Flowers" at the top of my Letter F screen, also the image on this page contains the big letter F and the three buttons with colours, that allows the young users draw on it increasing the interactiveness and child-friendliness of the app. And this page also contains many bright colours and large sized letters that meet the user requirements that says that the user interface should be appealing to the 3-7 age range and be simple to use. |

Screen mockup (left panel):

Sound button (PlaySoud Button.png)

Big letter F with the flowers around the letter F (FlowersF.jpg)

Button with Red colour
Button with Green colour
Button with Yellow colour

Wipe button
Next button (NextButton.png)

**Screen Name: Complete**

| Assets | Events (inputs & outputs) |
|---|---|
| ReadBannerImg.jpg<br>WellDone.jpg<br>StartAgain.png<br>close.png | The Complete screen includes 2 inputs; selecting the restart button to restart the app, selecting the quit button to quit the app |

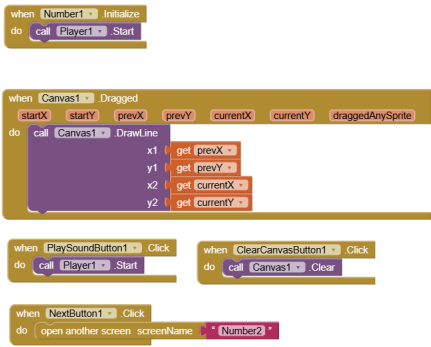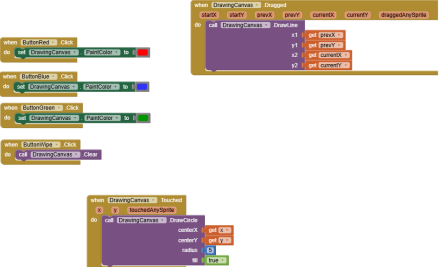| Design notes/ Alternative ideas | Method of solution (what does this screen do?) |
|---|---|
| Background color: White or Grey, because a more neutral background improves contrast, which guarantees letters stand out clearly<br>Background colours in the Well Done image: Green<br>Fonts: Indie Flower because it looks very child-friendly, and simple Arial, Size: 18,<br>Colours: Multi-coloured letters on the banner image, and simple white letters on the Well Done image<br><br>1. Leave out the quit button<br>2. Combine banner image and well done image into a single image<br>3. Background colour in the Well Done image could be replaced by the blue color. | This page contains many bright colours and large sized letters that meet the user requirements that says that the user interface should be appealing to the 3-7 age range and be simple to use. Additionally, the start button is filled by green, and the close app button is filled by red colours, these small features help young users navigate this screen, providing ease of use and appealing as well. |

The mockup screen shows:
- Learn to Read banner image (ReadBannerImg.jpg)
- Well Done image that shows finger up (WellDone.jpg)
- Start again button (StartAgain.png)
- Close App button (close.png)

**Pseudocode**

| Screen | Screen 1 | Letter A | Letter B | Letter C | Letter D | Letter E | Letter F | Complete |
|---|---|---|---|---|---|---|---|---|
| **Pseudocode** | If Start button pressed display Letter A Screen | If the Sound button is pressed, play Letter A sound.<br><br>If finger click on some colour and drag across canvas draw line<br><br>If Wipe button pressed all drawn lines will cleared from screen<br><br>If Next button pressed display Letter B screen | If the Sound button is pressed, play Letter B sound.<br><br>If finger click on some colour and drag across canvas draw line<br><br>If Wipe button pressed all drawn lines will cleared from screen<br><br>If Next button pressed display Letter C screen | If the Sound button is pressed, play Letter C sound.<br><br>If finger click on some colour and drag across canvas draw line<br><br>If Wipe button pressed all drawn lines will cleared from screen<br><br>If Next button pressed display Letter D screen | If the Sound button is pressed, play Letter D sound.<br><br>If finger click on some colour and drag across canvas draw line<br><br>If Wipe button pressed all drawn lines will cleared from screen<br><br>If Next button pressed display Letter E screen | If the Sound button is pressed, play Letter E sound.<br><br>If finger click on some colour and drag across canvas draw line<br><br>If Wipe button pressed all drawn lines will cleared from screen<br><br>If Next button pressed display Letter F screen | If the Sound button is pressed, play Letter F sound.<br><br>If finger click on some colour and drag across canvas draw line<br><br>If Wipe button pressed all drawn lines will cleared from screen<br><br>If Next button pressed display Complete screen | If Restart button pressed display Screen1.<br><br>If Close App button is pressed Close app. |

**Pre-defined Code**

| Code (Blocks) |  |  |  |
|---|---|---|---|
| **Taken from** | CountingApp | CountingApp | PaintPot |
| **Used for** | It is used so that when you click on the Start button, the app starts | I will use the similar code for pages with letters: The Next button to go to the next letter, and for Play a sound button to play the sound on my Letter A-F screens | I will use the similar code for adding colours to draw on the letter, on my Letter A-F screens |

# Asset/Sources Log

Developer Name:

| Description of asset | File name | Source | Modification made | Where used |
|---|---|---|---|---|
| App banner showing name of app 'Learn to Read' | learnToRead.jpg | Original | N/A | Screen 1 Complete |
| Splash image showing 'Letters A to F' | atof.jpg | Original | N/A | Screen1 |

| | | | | |
|---|---|---|---|---|
| Big green start button | StartButton1.jpg | Original | N/A | Screen1 |
| Large image of Red letter 'A' with apples around it | AppleA.jpg | Original | N/A | LetterA |
| Large image of 'B' with bees around it | BeesB.jpg | Original | N/A | LetterB |
| Large image of 'C' with the cat inside the image | CatC.jpg | Original | N/A | LetterC |
| Large image of 'D' with the dog inside the image | DogD.jpg | Original | N/A | LetterD |
| Large image of 'E' with the globe inside the image | EarthE.jpg | Original | N/A | LetterE |
| Large image of 'F' with the flowers around the letter F | FlowersF.jpg | Original | N/A | LetterF |
| 'A for Apple' sound file | AforApple.mp3 | Original | N/A | LetterA |
| 'B for Bees' sound file | BforBees.mp3 | Original | N/A | LetterB |
| 'C for Cat' sound file | CforCat.mp3 | Original | N/A | LetterC |
| 'D for Dog' sound file | DforDog.mp3 | Original | N/A | LetterD |
| 'E for Earth' sound file | EforEarth.mp3 | Original | N/A | LetterE |
| 'F for Flowers' sound file | FforFlowers.mp3 | Original | N/A | LetterF |
| Small orange button with a speaker symbol | PlaySooundButton.png | Original | N/A | LetterA, LetterB, LetterC, LetterD, LetterE, LetterF |
| Small blue button with an arrow pointing right | NextButton.png | Original | N/A | LetterA, LetterB, LetterC, LetterD, LetterE, LetterF |
| Big green 'Start Again' button | StartAgain.png | Original | N/A | Complete |

| | | | | |
|---|---|---|---|---|
| Big red 'Close App' again button | close.png | Original | N/A | Complete |
| Splash image showing a thumbs up and displaying Well Done | WellDone.jpg | Original | N/A | Complete |

## Test Plan & Log

Developer Name:                              Application:

| Test No | Screen | Test | Expected Outcome | Actual Outcome | Comments |
|---|---|---|---|---|---|
| **1** | Screen1 | Open app | Screen 1 displays and all images and buttons are displayed and fully visible | | |
| **2** | Screen1 | Press start button | LetterA screen displays | | |
| **3** | LetterA | Display LetterA screen | LetterA screen displays and all images and buttons are displayed and fully visible | | |

| | | | | | |
|---|---|---|---|---|---|
| **4** | LetterA | Tap on the Red button and swipe the screen to draw in red | LetterA screen displays red lines when to draw on the screen | | |
| **5** | LetterA | Tap on the Green button and swipe the screen to draw in green | LetterA screen displays green lines when to draw on the screen | | |
| **6** | LetterA | Tap on the Yellow button and swipe the screen to draw in yellow | LetterA screen displays yellow lines when to draw on the screen | | |
| **7** | LetterA | Press sound button | 'A for Apple' sound file is played and heard clearly | | |
| **8** | LetterA | Press wipe button | All drawn lines are cleared from screen | | |
| **9** | LetterA | Press next button | LetterB screen is displayed | | |
| **10** | LetterB | Display LetterB screen | LetterB screen displays and all images and buttons are displayed and fully visible | | |
| **11** | LetterB | Tap on the Red button and swipe the screen to draw in red | LetterB screen displays red lines when to draw on the screen | | |
| **12** | LetterB | Tap on the Green button and swipe the screen to draw in green | LetterB screen displays green lines when to draw on the screen | | |
| **13** | LetterB | Tap on the Yellow button and swipe the screen to draw in yellow | LetterB screen displays yellow lines when to draw on the screen | | |

| 14 | LetterB | Press sound button | 'B for Bees' sound file is played and heard clearly | | |
|---|---|---|---|---|---|
| 15 | LetterB | Press wipe button | All drawn lines are cleared from screen | | |
| 16 | LetterB | Press next button | LetterC screen is displayed | | |
| 17 | LetterC | Display LetterC screen | LetterC screen displays and all images and buttons are displayed and fully visible | | |
| 18 | LetterC | Tap on the Red button and swipe the screen to draw in red | LetterC screen displays red lines when to draw on the screen | | |
| 19 | LetterC | Tap on the Green button and swipe the screen to draw in green | LetterC screen displays green lines when to draw on the screen | | |
| 20 | LetterC | Tap on the Yellow button and swipe the screen to draw in yellow | LetterC screen displays yellow lines when to draw on the screen | | |
| 21 | LetterC | Press sound button | 'C for Cat' sound file is played and heard clearly | | |
| 22 | LetterC | Press wipe button | All drawn lines are cleared from screen | | |
| 23 | LetterC | Press next button | LetterD screen is displayed | | |
| 24 | LetterD | Display LetterD screen | LetterD screen displays and all images and buttons are displayed and fully visible | | |
| 25 | LetterD | Tap on the Red button and swipe | LetterD screen displays red lines when to draw on the screen | | |

| | | the screen to draw in red | | | |
|---|---|---|---|---|---|
| 26 | LetterD | Tap on the Green button and swipe the screen to draw in green | LetterD screen displays green lines when to draw on the screen | | |
| 27 | LetterD | Tap on the Yellow button and swipe the screen to draw in yellow | LetterD screen displays yellow lines when to draw on the screen | | |
| 28 | LetterD | Press sound button | 'D for Dog' sound file is played and heard clearly | | |
| 29 | LetterD | Press wipe button | All drawn lines are cleared from screen | | |
| 30 | LetterD | Press next button | LetterE screen is displayed | | |
| 31 | LetterE | Display LetterE screen | LetterE screen displays and all images and buttons are displayed and fully visible | | |
| 32 | LetterE | Tap on the Red button and swipe the screen to draw in red | LetterE screen displays red lines when to draw on the screen | | |
| 33 | LetterE | Tap on the Green button and swipe the screen to draw in green | LetterE screen displays green lines when to draw on the screen | | |
| 34 | LetterE | Tap on the Yellow button and swipe the screen to draw in yellow | LetterE screen displays yellow lines when to draw on the screen | | |
| 35 | LetterE | Press sound button | 'E for Earth' sound file is played | | |

| | | | and heard clearly | | |
|---|---|---|---|---|---|
| 36 | LetterE | Press wipe button | All drawn lines are cleared from screen | | |
| 37 | LetterE | Press next button | LetterF screen is displayed | | |
| 38 | LetterF | Display LetterF screen | LetterF screen displays and all images and buttons are displayed and fully visible | | |
| 39 | LetterF | Tap on the Red button and swipe the screen to draw in red | LetterF screen displays red lines when to draw on the screen | | |
| 40 | LetterF | Tap on the Green button and swipe the screen to draw in green | LetterF screen displays green lines when to draw on the screen | | |
| 41 | LetterF | Tap on the Yellow button and swipe the screen to draw in yellow | LetterF screen displays yellow lines when to draw on the screen | | |
| 42 | LetterF | Press sound button | 'F for Flowers' sound file is played and heard clearly | | |
| 43 | LetterF | Press wipe button | All drawn lines are cleared from screen | | |
| 44 | LetterF | Press next button | Complete screen is displayed | | |
| 45 | Complete | Display Complete screen | Complete screen displays and all images and buttons are displayed and fully visible | | |
| 46 | Complete | Press Start Again button | Screen1 is displayed | | |

| 47 | Complete | Press Close App button | App closes | | |
|---|---|---|---|---|---|