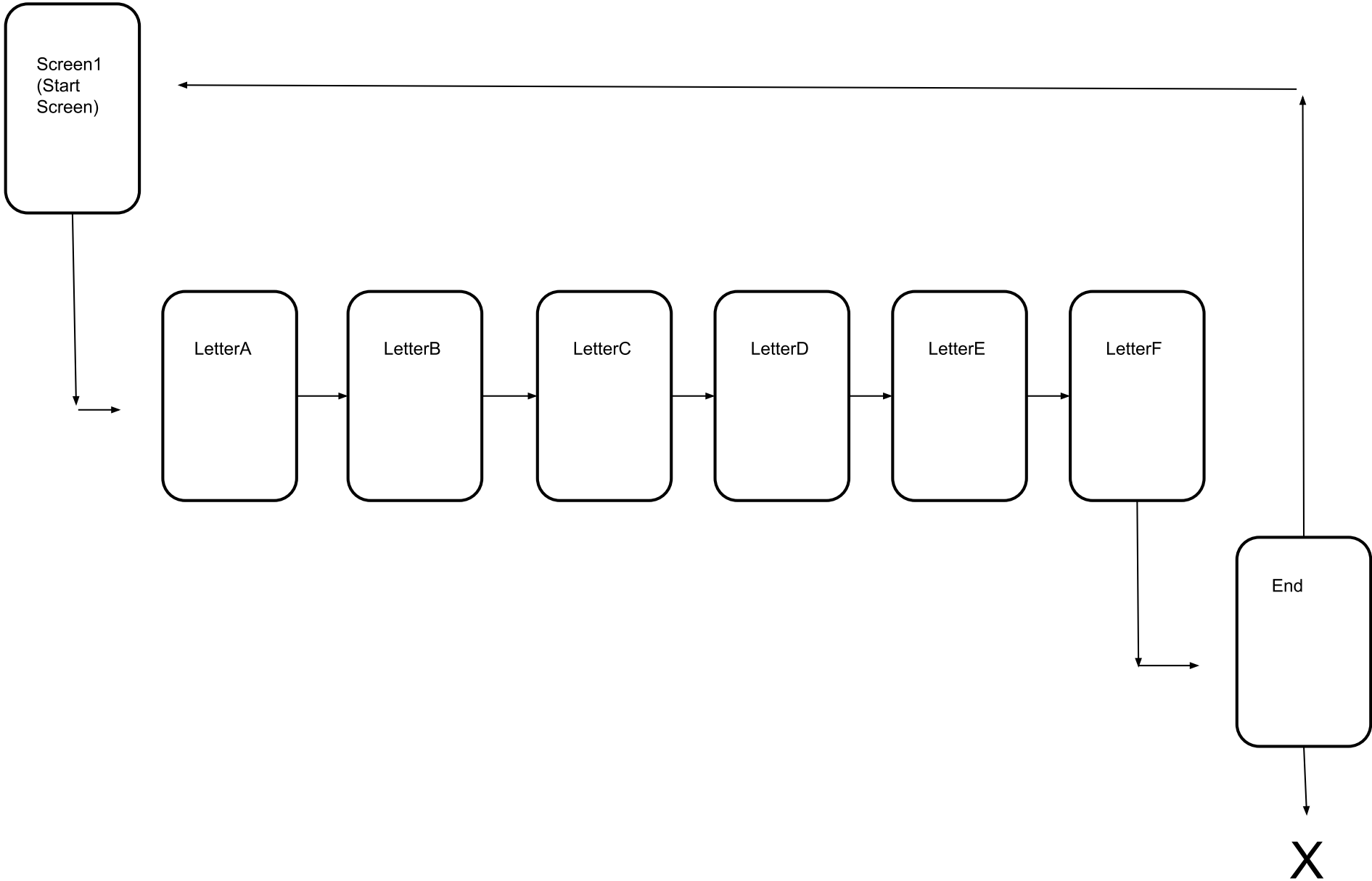
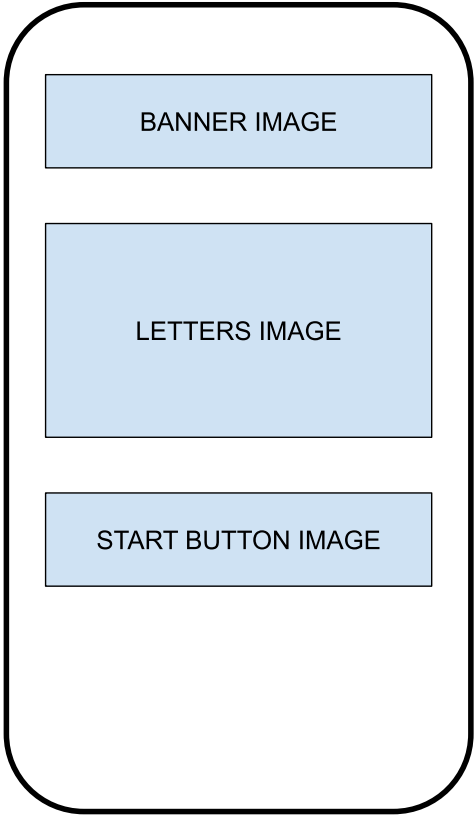
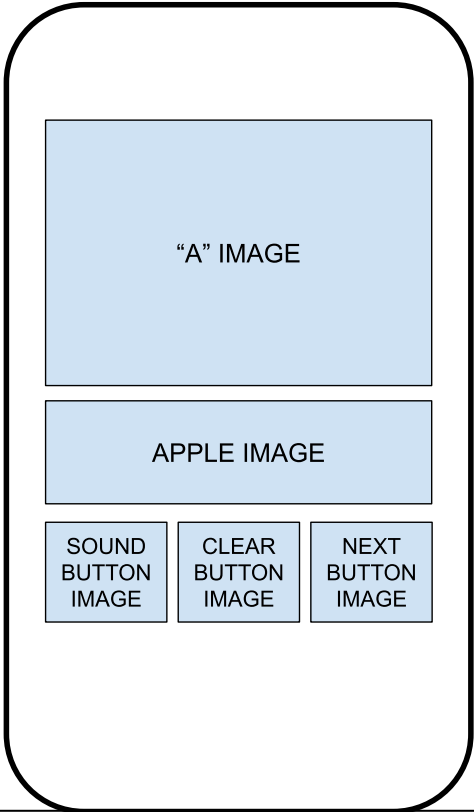


Structure Diagram for Counting App:



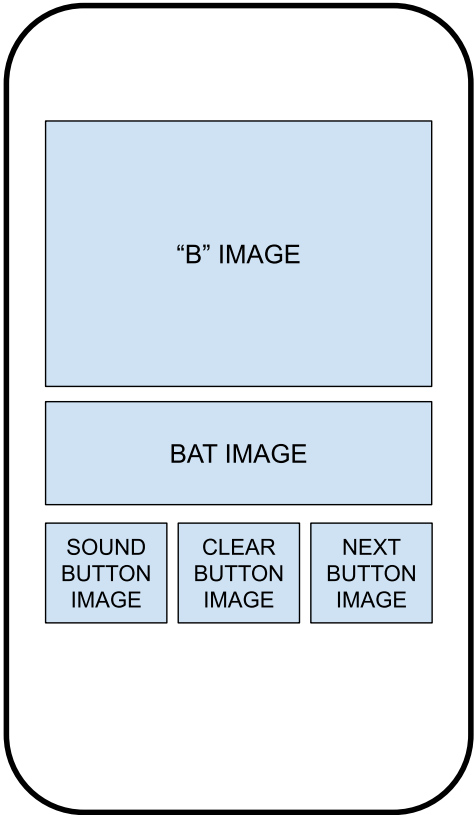
Screen Name: Screen1	Developer Name: Benjamin Walker	Assets	Events
		Banner.png  LET_1-5.png  StartButton.png	Start Button (input)
		Designer notes/Alternative Ideas	Method of Solution
		<p>This screen includes a white background, original drawn coloured text and child like text and friendly images</p> <ul style="list-style-type: none"> <li>• Banner image and letters image could be merged into just a single image</li> <li>• Letter song could be played at app start-up</li> <li>• Animation on start button</li> </ul> <p>These alternative ideas were rejected due to too many things happening in such a simple app, as it would distract the child from the</p>	<p>Begins the main function of the app, as it sends you to your first letter when the play button is touched</p>

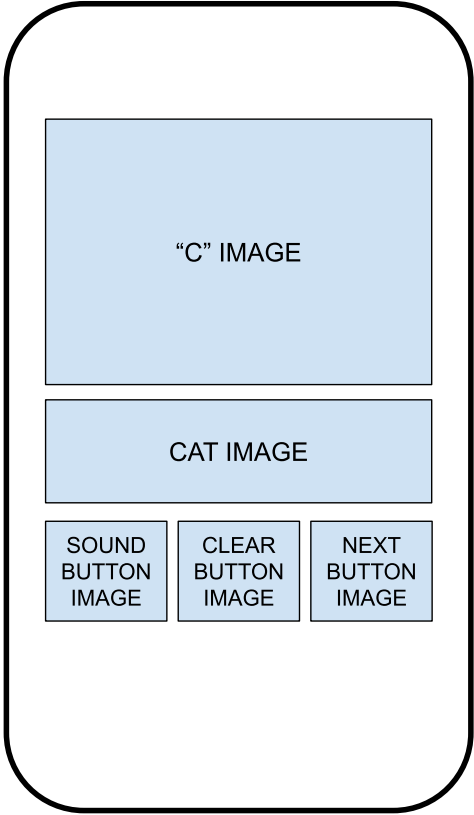
	purpose and with the banner and letters image as one image would make editing less flexible	
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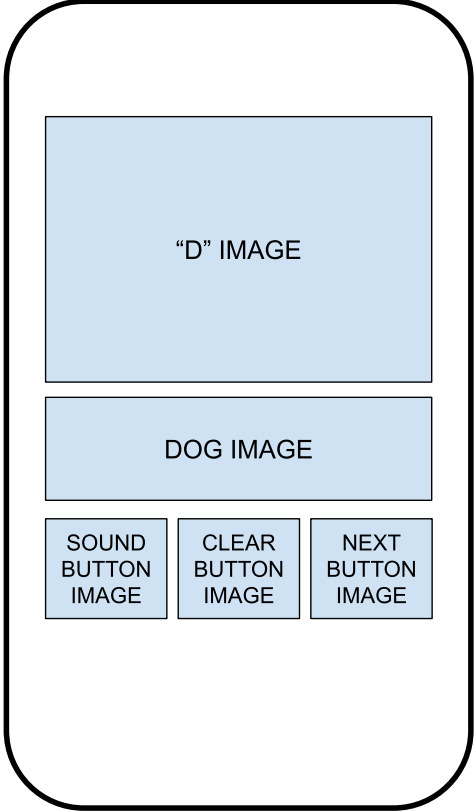
Screen Name: LetterA	Developer Name: Benjamin Walker	Assets	Events
 <p>The mockup shows a rounded rectangle containing a large light blue box labeled "A" IMAGE, a smaller light blue box labeled APPLE IMAGE below it, and three small light blue boxes at the bottom labeled SOUND BUTTON IMAGE, CLEAR BUTTON IMAGE, and NEXT BUTTON IMAGE.</p>		A.png SoundButton.png ClearButton.png NextButton.png LetterA.mp3	Sound Button (output) Clear Button (input) Next Button (input) Speaking the letter (output) Canvas (input)
		Designer notes/Alternative Ideas	Method of Solution

	<p>This screen includes custom “A” drawing, custom buttons and an image of an apple, as well as a white background</p> <ul style="list-style-type: none"> <li>• Letter song could be played when the next button is pressed</li> <li>• Animation on the apple image</li> </ul> <p>These alternative ideas were rejected due to too many things happening in such a simple app, as it would distract the child from the purpose</p>	To learn the letter: A, as well as the example object it has given as a example
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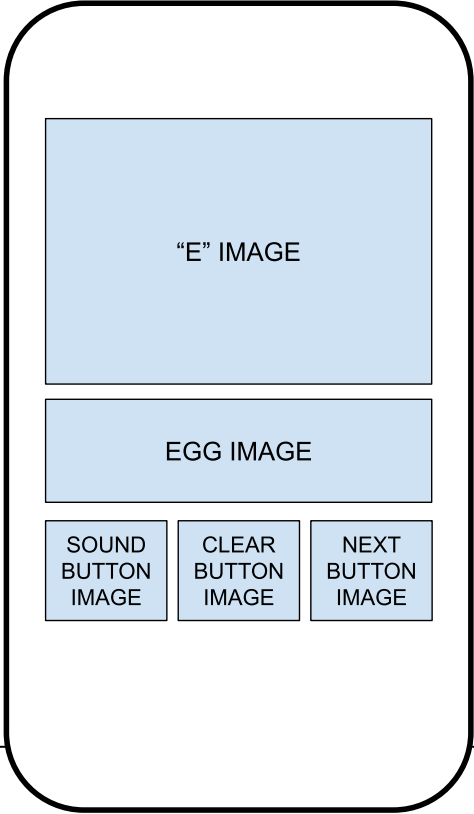
<b>Screen Name: LetterB</b>	<b>Developer Name: Benjamin Walker</b>	<b>Assets</b>	<b>Events</b>
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	<p>B.png</p> <p>SoundButton.png</p> <p>ClearButton.png</p> <p>NextButton.png</p> <p>LetterB.mp3</p>	<p>Sound Button (output)</p> <p>Clear Button (input)</p> <p>Next Button (input)</p> <p>Speaking the letter (output)</p> <p>Canvas (input)</p>
	<p><b>Designer notes/Alternative Ideas</b></p>	<p><b>Method of Solution</b></p>
	<p>This screen includes custom “B” drawing, custom buttons and an image of a bat, as well as a white background</p> <ul style="list-style-type: none"> <li>• Letter song could be played when the next button is pressed</li> <li>• Animation on the bat image</li> </ul> <p>These alternative ideas were rejected due to too many things happening in such a simple app, as it would distract the child from the purpose</p>	<p>To learn the letter: B, as well as the example object it has given as a example</p>

Screen Name: LetterC	Developer Name: Benjamin Walker	Assets	Events
		C.png SoundButton.png ClearButton.png NextButton.png LetterC.mp3	Sound Button (output) Clear Button (input) Next Button (input) Speaking the letter (output) Canvas (input)
		Designer notes/Alternative Ideas	Method of Solution
		<p>This screen includes custom “C” drawing, custom buttons and an image of a cat, as well as a white background</p> <ul style="list-style-type: none"> <li>Letter song could be played when the next button is pressed</li> <li>Animation on the cat image</li> </ul> <p>These alternative ideas were rejected due to too many things happening in such a simple app, as it would distract the child from the purpose</p>	<p>To learn the letter: C, as well as the example object it has given as a example</p>

Screen Name: LetterD	Developer Name: Benjamin Walker	Assets	Events
		D.png  SoundButton.png  ClearButton.png  NextButton.png  LetterD.mp3	Sound Button (output)  Clear Button (input)  Next Button (input)  Speaking the letter (output)  Canvas (input)
		Designer notes/Alternative Ideas	Method of Solution
		<p>This screen includes custom “D” drawing, custom buttons and an image of a dog, as well as a white background</p> <ul style="list-style-type: none"> <li>Letter song could be played when the next button is pressed</li> <li>Animation on the dog image</li> </ul> <p>These alternative ideas were rejected due to</p>	<p>To learn the letter: D, as well as the example object it has given as a example</p>

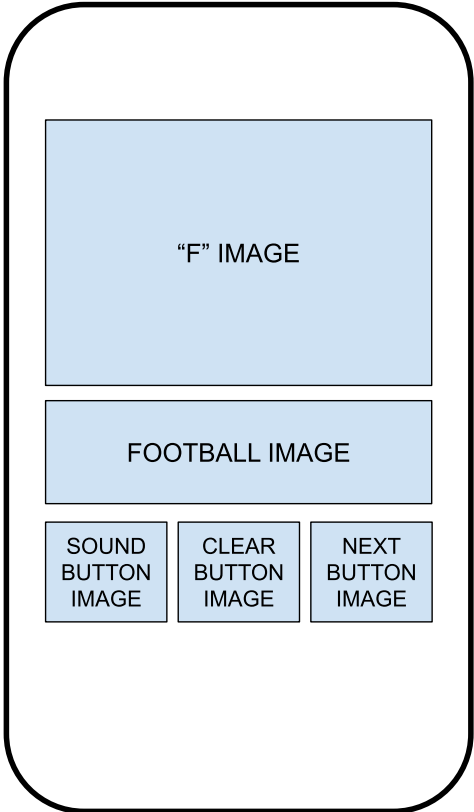
	too many things happening in such a simple app, as it would distract the child from the purpose	
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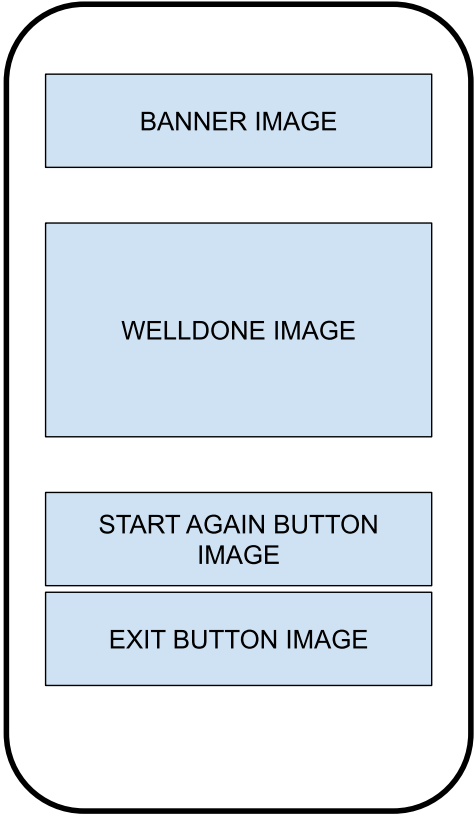
Screen Name: LetterE	Developer Name: Benjamin Walker	Assets	Events
		E.png  SoundButton.png  ClearButton.png  NextButton.png  LetterE.mp3	Sound Button (output)  Clear Button (input)  Next Button (input)  Speaking the letter (output)  Canvas (input)
		Designer notes/Alternative Ideas	Method of Solution



	<p>This screen includes custom “E” drawing, custom buttons and an image of an egg, as well as a white background</p> <ul style="list-style-type: none"> <li>• Letter song could be played when the next button is pressed</li> <li>• Animation on the egg image</li> </ul> <p>These alternative ideas were rejected due to too many things happening in such a simple app, as it would distract the child from the purpose</p>	To learn the letter: E, as well as the example object it has given as a example
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<b>Screen Name: LetterF</b>	<b>Developer Name: Benjamin Walker</b>	<b>Assets</b>	<b>Events</b>
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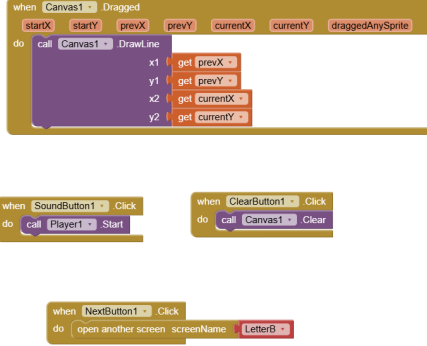
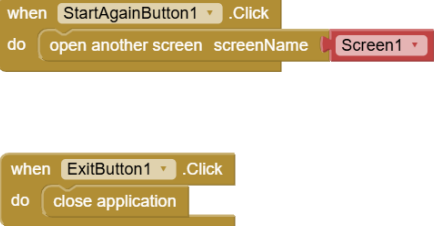

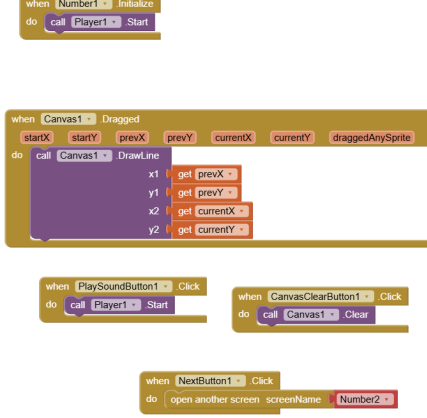
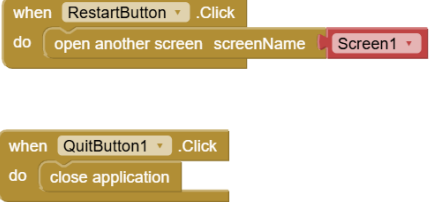
	F.png SoundButton.png ClearButton.png NextButton.png LetterF.mp3	Sound Button (output) Clear Button (input) Next Button (input) Speaking the letter (output) Canvas (input)
	<b>Designer notes/Alternative Ideas</b>	<b>Method of Solution</b>
	<p>This screen includes custom “F” drawing, custom buttons and an image of a football, as well as a white background</p> <ul style="list-style-type: none"><li>• Letter song could be played when the next button is pressed</li><li>• Animation on the football image</li></ul> <p>These alternative ideas were rejected due to too many things happening in such a simple app, as it would distract the child from the purpose</p>	<p>To learn the letter: F, as well as the example object it has given as a example</p>

Screen Name: End	Developer Name: Benjamin Walker	Assets	Events
		Banner.png  Welldone.png  StartAgainButton.png  ExitButton.png	Start Again Button (input)  Exit Button (input)
		Designer notes/Alternative Ideas	Method of Solution
		<p>This screen includes a white background, original drawn coloured text and child like text and friendly images</p> <ul style="list-style-type: none"> <li>• Welldone song could be played at the end</li> <li>• Animation on well done image</li> </ul> <p>These alternative ideas were rejected due to too many things happening in such a simple app, as it would distract the child from the purpose</p>	<p>To show that you have completed the app, by learning all the letters</p>






## Pseudocode





Screen	Screen1	LetterA	LetterB	LetterC	LetterD	LetterE	LetterF	End
<b>Pseudocode</b>	If Start button pressed display Letter A Screen	If Sound button pressed play Letter A sound. If finger drag across canvas draw line. If clear button pressed clear Canvas. If next button pressed display Letter B screen.	If Sound button pressed play Letter B sound. If finger drag across canvas draw line. If clear button pressed clear Canvas. If next button pressed display Letter C screen.	If Sound button pressed play Letter C sound. If finger drag across canvas draw line. If clear button pressed clear Canvas. If next button pressed display Letter D screen.	If Sound button pressed play Letter D sound. If finger drag across canvas draw line. If clear button pressed clear Canvas. If next button pressed display Letter E screen.	If Sound button pressed play Letter E sound. If finger drag across canvas draw line. If clear button pressed clear Canvas. If next button pressed display Letter F screen.	If Sound button pressed play Letter F sound. If finger drag across canvas draw line. If clear button pressed clear Canvas. If next button pressed display Exit screen.	If Start Again button pressed display Screen1. If Exit button pressed Close app.

## Pre-defined Code

Code			
Taken from			
Used for	Starting and entering the app	Seeing the letters, drawing on the letter and moving on to the next one	Exiting or restarting the app

## Assets/Sources Log


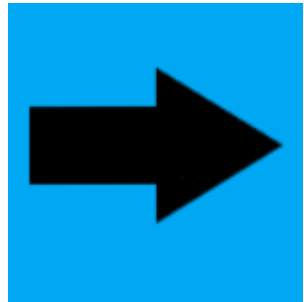



Description of Asset	File Name	Source	Modifications made	Where used	Appearance
App banner showing name of app “Learn the Alphabet”	Banner.png	Original	N/A	Screen1	
Image showing “Letters A to F”	LET_A-F.png	Original	N/A	Screen1	
Big green start button	StartButton.png	Original	N/A	Screen1	
Large image of red letter “A”	A.png	Original	N/A	LetterA	
Large image of blue letter “B”	B.png	Original	N/A	LetterB	

Large image of yellow letter "C"	C.png	Original	N/A	LetterC	
Large image of green letter "D"	D.png	Original	N/A	LetterD	
Large image of blue letter "E"	E.png	Original	N/A	LetterE	
Large image of indigo letter "F"	F.png	Original	N/A	LetterF	
"LetterA" sound file	LetterA.mp3	Original	N/A	LetterA	N/A
"LetterB" sound file	LetterB.mp3	Original	N/A	LetterB	N/A
"LetterC" sound file	LetterC.mp3	Original	N/A	LetterC	N/A
"LetterD" sound file	LetterD.mp3	Original	N/A	LetterD	N/A
"LetterE" sound file	LetterE.mp3	Original	N/A	LetterE	N/A
"LetterF" sound file	LetterF.mp3	Original	N/A	LetterF	N/A

Large image of “apple”	Apple.png	<a href="https://pixabay.com/vectors/apple-red-ripe-leaf-fruit-food-312695/">https://pixabay.com/vectors/apple-red-ripe-leaf-fruit-food-312695/</a>	N/A	LetterA	
Large image of” bat”	Bat.png	<a href="https://www.shutterstock.com/image-vector/simple-cartoon-bat-icon-flying-spread-1671353788">https://www.shutterstock.com/image-vector/simple-cartoon-bat-icon-flying-spread-1671353788</a>	N/A	LetterB	
Large image of “cat”	Cat.png	<a href="https://www.shutterstock.com/image-vector/cute-cat-concept-adorable-domestic-animal-2480967273">https://www.shutterstock.com/image-vector/cute-cat-concept-adorable-domestic-animal-2480967273</a>	N/A	LetterC	
Large image of “dog”	Dog.png	<a href="https://stock.adobe.com/images/Cute-Puppy-Dog-Cartoon-Vector-Illustration/534886771?as_content=tineye_match&amp;clickref=10111AerCJTT&amp;mv=affiliate&amp;mv2=pz&amp;as_campaigntype=domain&amp;as_channel=affiliate&amp;as_source=">https://stock.adobe.com/images/Cute-Puppy-Dog-Cartoon-Vector-Illustration/534886771?as_content=tineye_match&amp;clickref=10111AerCJTT&amp;mv=affiliate&amp;mv2=pz&amp;as_campaigntype=domain&amp;as_channel=affiliate&amp;as_source=</a>	N/A	LetterD	



		<a href="#">ce=partnerize&amp;as_campaign=tineye</a>			
Large image of “egg”	Egg.png	<a href="https://www.istockphoto.com/vector/cute-cartoon-happy-egg-character-gm1300470309-392786939">https://www.istockphoto.com/vector/cute-cartoon-happy-egg-character-gm1300470309-392786939</a>	N/A	LetterE	
Large image of “football”	Football.png	<a href="https://www.gettyimages.co.uk/detail/illustration/black-and-white-soccer-ball-with-shadows-royalty-free-illustration/131613039?adppopup=true">https://www.gettyimages.co.uk/detail/illustration/black-and-white-soccer-ball-with-shadows-royalty-free-illustration/131613039?adppopup=true</a>	N/A	LetterF	
Small yellow button with a speaker symbol	SoundButton.png	Original	N/A	LetterA, LetterB, LetterC, LetterD, LetterE, LetterF	

Small magenta button with a white 'X'	ClearButton.png	Original	N/A	LetterA, LetterB, LetterC, LetterD, LetterE, LetterF	
Small blue button with a black arrow pointing right	NextButton.png	Original	N/A	LetterA, LetterB, LetterC, LetterD, LetterE, LetterF	
Big green "Start Again" button	StartAgainButton.png	Original	N/A	End	
Big red "Exit" again button	ExitButton.png	Original	N/A	End	
Image showing a face winking and displaying Well Done	Welldone.png	Original	N/A	End	

Test No	Screen	Test	Expected outcome	Actual Outcome	Comments
1	Screen1	Open app	Screen1 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	Trace letter A on screen with finger	Pink line is drawn on screen		
5	LetterA	Press sound button	"LetterA" sound file is played and heard clearly		
6	LetterA	Press clear button	All drawn lines are cleared from screen		
7	LetterA	Press next button	LetterB screen is displayed		
9	LetterB	Display LetterB screen	LetterB screen displays and all images and buttons are displayed and fully visible		
10	LetterB	Trace letter B on screen with finger	Pink line is drawn on screen		
11	LetterB	Press sound button	"LetterB" sound file is played and heard clearly		

12	LetterB	Press clear button	All drawn lines are cleared from screen		
13	LetterB	Press next button	LetterC screen is displayed		
15	LetterC	Display LetterC screen	LetterC screen displays and all images and buttons are displayed and fully visible		
16	LetterC	Trace letter C on screen with finger	Pink line is drawn on screen		
17	LetterC	Press sound button	"LetterC" sound file is played and heard clearly		
18	LetterC	Press clear button	All drawn lines are cleared from screen		
19	LetterC	Press next button	LetterD screen is displayed		
20	LetterD	Display LetterD screen	LetterD screen displays and all images and buttons are displayed and fully visible		
21	LetterD	Trace letter D on screen with finger	Pink line is drawn on screen		
22	LetterD	Press sound button	"LetterD" sound file is played and heard clearly		

23	LetterD	Press clear button	All drawn lines are cleared from screen		
24	LetterD	Press next button	LetterE screen is displayed		
25	LetterE	Display LetterE screen	LetterE screen displays and all images and buttons are displayed and fully visible		
26	LetterE	Trace letter E on screen with finger	Pink line is drawn on screen		
27	LetterE	Press sound button	“LetterE” sound file is played and heard clearly		
28	LetterE	Press clear button	All drawn lines are cleared from screen		
29	LetterE	Press next button	LetterF screen is displayed		
30	LetterF	Display LetterF screen	LetterF screen displays and all images and buttons are displayed and fully visible		
31	LetterF	Trace letter F on screen with finger	Pink line is drawn on screen		
32	LetterF	Press sound button	“LetterF” sound file is played and heard clearly		

33	LetterF	Press clear button	All drawn lines are cleared from screen		
34	LetterF	Press next button	End screen is displayed		
35	End	Display End screen	End screen displays and all images and buttons are displayed and fully visible		
36	End	Press Start Again button	Screen1 is displayed		
37	End	Press Close App button	App closes		

## Components and Properties

### Screen: Screen1

<b>Screen Properties</b>	AlignHorizontal: Center AlignVertical: Center BackgroundColor: White ScreenOrientation: Portrait Scrollable: No				
<b>Components</b>	<b>Palette Group</b>	<b>Name</b>	<b>Purpose</b>	<b>Properties &amp; Assets</b>	
VerticalArrangement	Layout	VerticalArrangement1	Places the images and buttons in a	AlignHorizontal: Center	

			column	AlignVertical: Center Height: Fill Parent
Image	User Interface	BannerImage1	Displays the banner image	Picture: Banner.png
Image	User Interface	LettersImage1	Displays the main screen image	Picture: LET_A-F.png
Button	User Interface	StartButton1	Starts the learning by progressing to the first letter screen	Image: StartButton.png Text: None

### Screen: LetterA

<b>Screen Properties</b>	AlignHorizontal: Center AlignVertical: Center BackgroundColor: White ScreenOrientation: Portrait Scrollable: No			
Components	Palette Group	Name	Purpose	Properties & Assets
HorizontalArrangement	Layout	TopHorizontalAllArrangement1	Places and displays the letter A and apple images	AlignHorizontal: Center AlignVertical: Center BackgroundColor: None Height: 200 px Width: 210 px Image: A.jpg
Canvas	Drawing & Animation	Canvas1	Allows the user to draw on the canvas	Height: Fill parent Width: Fill parent LineWidth : 20 PaintColour: Pink BackgroundColor: None
Image	User Interface	AppleImage1	displays the apple image	Picture: Apple.png

HorizontalArrangement	Layout	MenuHorizontalArrangement1	Places the three menu buttons	AlignHorizontal: Center AlignVertical: Center Height: 15% Width: Fill parent
Button	User Interface	SoundButton1	Speaks the letter and object out loud	Image: SoundButton.png Text: None
Button	User Interface	ClearButton1	Clears any drawing from the canvas	Image: ClearButton.png Text: None
Button	User Interface	NextButton1	Allows progress to the next number	Image: NextButton.png Text: None
Player	Media	Player1	Allows the sound file to be played	Source: LetterA.mp3

#### Screen: LetterB

<b>Screen Properties</b>	AlignHorizontal: Center AlignVertical: Center BackgroundColor: White ScreenOrientation: Portrait Scrollable: No			
Components	Palette Group	Name	Purpose	Properties & Assets
HorizontalArrangement	Layout	TopHorizontalAllArrangement1	Places and displays the letter A and apple images	AlignHorizontal: Center AlignVertical: Center BackgroundColor: None Height: 200 px Width: 210 px Image: B.jpg
Canvas	Drawing & Animation	Canvas1	Allows the user to draw on the	Height: Fill parent Width: Fill parent



			canvas	LineWidth : 20 PaintColour: Pink BackgroundColor: None
Image	User Interface	BatImage1	displays the apple image	Picture: Bat.png
HorizontalArrangement	Layout	MenuHorizontalArrangement1	Places the three menu buttons	AlignHorizontal: Center AlignVertical: Center Height: 15% Width: Fill parent
Button	User Interface	SoundButton1	Speaks the letter and object out loud	Image: SoundButton.png Text: None
Button	User Interface	ClearButton1	Clears any drawing from the canvas	Image: ClearButton.png Text: None
Button	User Interface	NextButton1	Allows progress to the next number	Image: NextButton.png Text: None
Player	Media	Player1	Allows the sound file to be played	Source: LetterB.mp3

#### Screen: LetterC

<b>Screen Properties</b>	AlignHorizontal: Center AlignVertical: Center BackgroundColor: White ScreenOrientation: Portrait Scrollable: No			
<b>Components</b>	<b>Palette Group</b>	<b>Name</b>	<b>Purpose</b>	<b>Properties &amp; Assets</b>
HorizontalArrangement	Layout	TopHorizontalArrangement1	Places and displays the letter A and apple images	AlignHorizontal: Center AlignVertical: Center BackgroundColor: None Height: 200 px

				Width: 210 px Image: C.jpg
Canvas	Drawing & Animation	Canvas1	Allows the user to draw on the canvas	Height: Fill parent Width: Fill parent LineWidth : 20 PaintColour: Pink BackgroundColor: None
Image	User Interface	CatImage1	displays the apple image	Picture: Cat.png
HorizontalArrangement	Layout	MenuHorizontalArrangement1	Places the three menu buttons	AlignHorizontal: Center AlignVertical: Center Height: 15% Width: Fill parent
Button	User Interface	SoundButton1	Speaks the letter and object out loud	Image: SoundButton.png Text: None
Button	User Interface	ClearButton1	Clears any drawing from the canvas	Image: ClearButton.png Text: None
Button	User Interface	NextButton1	Allows progress to the next number	Image: NextButton.png Text: None
Player	Media	Player1	Allows the sound file to be played	Source: LetterC.mp3

#### Screen: LetterD

<b>Screen Properties</b>	AlignHorizontal: Center AlignVertical: Center BackgroundColor: White ScreenOrientation: Portrait Scrollable: No			
<b>Components</b>	<b>Palette Group</b>	<b>Name</b>	<b>Purpose</b>	<b>Properties &amp; Assets</b>

HorizontalArrangement	Layout	TopHorizontalAllArrangement1	Places and displays the letter A and apple images	AlignHorizontal: Center AlignVertical: Center BackgroundColor: None Height: 200 px Width: 210 px Image: D.jpg
Canvas	Drawing & Animation	Canvas1	Allows the user to draw on the canvas	Height: Fill parent Width: Fill parent LineWidth : 20 PaintColour: Pink BackgroundColor: None
Image	User Interface	DogImage1	displays the apple image	Picture: Dog.png
HorizontalArrangement	Layout	MenuHorizontalArrangement1	Places the three menu buttons	AlignHorizontal: Center AlignVertical: Center Height: 15% Width: Fill parent
Button	User Interface	SoundButton1	Speaks the letter and object out loud	Image: SoundButton.png Text: None
Button	User Interface	ClearButton1	Clears any drawing from the canvas	Image: ClearButton.png Text: None
Button	User Interface	NextButton1	Allows progress to the next number	Image: NextButton.png Text: None
Player	Media	Player1	Allows the sound file to be played	Source: LetterD.mp3

#### Screen: LetterE

<b>Screen Properties</b>	AlignHorizontal: Center AlignVertical: Center
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	BackgroundColor: White ScreenOrientation: Portrait Scrollable: No			
Components	Palette Group	Name	Purpose	Properties & Assets
HorizontalArrangement	Layout	TopHorizontalAllArrangement1	Places and displays the letter A and apple images	AlignHorizontal: Center AlignVertical: Center BackgroundColor: None Height: 200 px Width: 210 px Image: E.jpg
Canvas	Drawing & Animation	Canvas1	Allows the user to draw on the canvas	Height: Fill parent Width: Fill parent LineWidth : 20 PaintColour: Pink BackgroundColor: None
Image	User Interface	EggImage1	displays the apple image	Picture: Egg.png
HorizontalArrangement	Layout	MenuHorizontalArrangement1	Places the three menu buttons	AlignHorizontal: Center AlignVertical: Center Height: 15% Width: Fill parent
Button	User Interface	SoundButton1	Speaks the letter and object out loud	Image: SoundButton.png Text: None
Button	User Interface	ClearButton1	Clears any drawing from the canvas	Image: ClearButton.png Text: None
Button	User Interface	NextButton1	Allows progress to the next number	Image: NextButton.png Text: None
Player	Media	Player1	Allows the sound file to be played	Source: LetterE.mp3

## Screen: LetterF

Screen Properties	AlignHorizontal: Center AlignVertical: Center BackgroundColor: White ScreenOrientation: Portrait Scrollable: No			
Components	Palette Group	Name	Purpose	Properties & Assets
HorizontalArrangement	Layout	TopHorizontalAllArrangement1	Places and displays the letter A and apple images	AlignHorizontal: Center AlignVertical: Center BackgroundColor: None Height: 200 px Width: 210 px Image: F.jpg
Canvas	Drawing & Animation	Canvas1	Allows the user to draw on the canvas	Height: Fill parent Width: Fill parent LineWidth : 20 PaintColour: Pink BackgroundColor: None
Image	User Interface	FootballImage1	displays the apple image	Picture: Football.png
HorizontalArrangement	Layout	MenuHorizontalArrangement1	Places the three menu buttons	AlignHorizontal: Center AlignVertical: Center Height: 15% Width: Fill parent
Button	User Interface	SoundButton1	Speaks the letter and object out loud	Image: SoundButton.png Text: None
Button	User Interface	ClearButton1	Clears any drawing from the canvas	Image: ClearButton.png Text: None
Button	User Interface	NextButton1	Allows progress to the next	Image: NextButton.png

			number	Text: None
Player	Media	Player1	Allows the sound file to be played	Source: LetterF.mp3

## Screen: End

<b>Screen Properties</b>	AlignHorizontal: Center AlignVertical: Center BackgroundColor: White ScreenOrientation: Portrait Scrollable: No			
Components	Palette Group	Name	Purpose	Properties & Assets
VerticalArrangement	Layout	VerticalArrangement1	Places the images and buttons in a column	AlignHorizontal: Center AlignVertical: Center Height: Fill Parent
Image	User Interface	BannerImage1	Displays the banner image	Picture: Banner.png
Image	User Interface	WelldoneImage1	Displays the main screen image	Picture: Welldone.png
Button	User Interface	StartAgainButton1	Starts the learning by progressing to the first letter screen	Image: StartAgainButton.png Text: None
Button	User Interface	ExitButton1		Image: ExitButton.png Text: None