

Interaction Design – DM1100

Project: ‘ABC3’ - By Joel Reed

Preliminary functionality specification

Version 0.1 (17-04-08)

Parental Section/Panel – Features			
Ref #	Function/Feature	Attribute	Detail/Constraint
1.0.0	Parental Panel		<p>A selection of various button icons which the parent can use to access Ref # 1.0.5, 1.1.0, 1.1.5, 1.2.0 and 1.2.5</p> <p>User (parent) can return to 1.0.0 from any of the sub sections and it can also be accessed from anywhere on the artefact via a button in the top-hand-side of the screen.</p>
1.0.5		Enter Child's Name	<p>User (Parent) can type in their child's name in to a box and then click the corresponding submit button, they will be faced with a small pop-up window where they will be asked to click 'Save Name' or 'Do Not Save Name', by clicking 'Save Name' the child's name will be retained throughout the activity sections in both written and spoken format, if they click 'Do Not Save' they will be returned to start of 1.0.5</p>
1.1.0		Child Avatar	<p>This will be an area where the user (Parent) can upload a suitable photograph of their child, via the corresponding 'File Browse Feature' which can scan the user's computer drives.</p> <p>A confirm pop-up window will appear to save the child's photograph on their avatar once selected, similar to 1.0.5 if they click 'Save' the avatar, using face mapping technology built in to the program, will reflect these changes throughout the activities section, if they click 'Do Not Save' they will return to the start of 1.1.0</p> <p>The User (Parent) must select their child's gender by clicking a radio button for 'Male' or 'Female' and this will be reflected in the activities sections with a pre-determined outfit for both Male and Female to add to the child's photograph mapped in a cartoon fashion on to the face of the avatar.</p>

<p>1.1.5</p>		<p>Online Download Feed</p>	<p>Takes user to a section where they can download the latest activity updates from www.abc3.com the program's official website.</p> <p>User (Parent) will be alerted via this section to pending updates (in a text format streamed from the Internet) they can download updates to add to the existing activities on the program, when they click on this update to download a 'Status Download Bar' will pop-up giving the user a visual reference to the download(s) occurring, the updates will be saved in the same folder as the User downloaded the program to on their C-Drive.</p> <p>The user must be connected to the Internet for this option to work; failure to be connected to the Internet will result in an 'Internet Connection Error' message on entry to 1.1.5 stopping the user from accessing the Online Download Feed until the Internet connection is established, the user can click the standard button in the top right-hand-corner to return to 1.0.0</p>
<p>1.2.0</p>		<p>Your Child's Status</p>	<p>Transports the user to a section which takes feeds of information from the three activities sections and stores the achievements and failures of the child that they record during tasks.</p> <p>There will be a summary of questions answered correctly/wrong displayed for vocal, written and letter reaction sections so parent can monitor the progress, it will also show the average response times from the Mat task (5.0.0).</p> <p>Ten status bars will be displayed in rows and numbered 1-10, 1 being the lowest ability level and 10 being the highest and as child achieves correct answers on activities while under a certain level this bar fills until the child becomes fully competent at that level and it is completed.</p> <p>The parent can select the difficulty level with a drop-down menu, depending on when their child completes an ability level; they can also select the amount of time activities go on for, again with a drop-down selecting between 1-10 minutes</p>

Application Start-Up Features			
Ref #	Function/Feature	Attribute	Detail/Constraint
2.0.0	BEFORE YOU BEGIN INSTRUCTIONS		
	Introduction Requirements		The artefact begins with a simple 'Loading Bar'. Before the user is permitted to start using the interface they will be faced with two separate instructions – they will be firstly asked if the 'Alpha-Mat' (the interactive mat) is switched on and connected to the computer. "If Alpha-Mat is switched on and plugged in to your computer click continue else click quit"
		Quit	Quits and exits the artefact with a quit conformation window.
		Continue	Continue takes you to the next Introduction Requirement "Is Mic On? And Settings Set".
			User met with second requirement – "Is the Alpha-Mic switched on, plugged in to your computer and set correctly, click continue else click quit".
		Quit	Quits and exits the artefact with a quit conformation window.
		Continue	Continue takes you to the 'Root Menu' Ref # 4.0.0 to actually begin using the artefact.
Global Functions/Settings			
Ref #	Function/Feature	Attribute	Detail/Constraint
3.0.0	Settings (or a similar name)		A single, ever-present location which provides the user the control of the artefact's settings. The user should be able to access the

		<p>settings at any time while using the artefact, similar to the 'Parental Panel (1.0.0)' there will always be a link to the Setting in the top-right-hand corner of the artefact.</p> <p>Settings should, unlike the 'Parental Panel (1.0.0)' open in a window overlaid on top of the user's current location, instead of a complete switch of page within the artefact.</p> <p>There will be tabs down the left-hand-side of the Settings Window which you can click to access the various settings; these will be displayed in a tab format on the right.</p> <p>The user should never lose their progress which they have made within the artefact, when the settings are accessed all activity is temporarily stopped until the user quits the settings, and then they should return to the exact point they left off.</p>
<p>3.0.5</p>	<p>Microphone (Alpha-Mic)</p>	<p>There will be three settings for the microphone, the user can adjust the amount of echo going out the microphone, they can adjust the sensitivity to the amount of noise the microphone captures and they can also test the microphone to make sure it is picking up the sound of the child's voice, which will use voice recognition to test whether the child is pronouncing the letters of the alphabet correctly.</p> <p>There will be a small indicator under this section which will test the amount of sound coming in to the microphone, when the indicator is out of the red/orange zone and in the yellow - green this will enable the microphone and the technology around it to work and will give a message to the parent "your child's microphone is now ready to use within ABC3" if it isn't in this correct sound input zone a message will display "your child's microphone is not receiving enough vocal volume for it to work within ABC3, please try again until your sound input is past the yellow colour on the indicator".</p> <p>The settings of the microphone will be kept once set until they are changed again by the parent.</p>

3.1.0		Mat (Alpha-Mat)	<p>Once the mat is connected to the artefact it will work but within the settings the user can adjust a couple of minor attributes.</p> <p>The user can control whether to mute the mat and stop any sound being exported via the computer speakers when the child steps on a particular part of it.</p> <p>The user can change the light settings on the mat and choose from 15 different colour sequences by clicking a drop-down menu, a small preview of the light sequence will be shown actually on the mat itself to aid in choosing.</p>
3.1.5		Artefact Useful Tips and FAQ	This option will present the user a selection of information to help aid their use of the artefact, it will be presented in text with optional audio commentary.
3.2.0		Close Settings Window (Quit)	Closes settings window and returns user to where ever they were in the artefact, saving progress.

Root Menu

Ref #	Function/Feature	Attribute	Detail/Constraint
4.0.0	ROOT MENU OPTIONS		<p>Music will play on entering the Root Menu, along with a vocal welcome (including their name) to the child providing their name is entered in the Parental Panel section, if there name isn't this feature won't occur.</p> <p>The child will then be asked – “What section do you want to play today” - before # Ref 4.0.5, 4.1.0, 4.1.5, become visible as rollover icons, with sound/animation effects on mouse contact.</p>
4.0.5		Alpha-Mat	First of three main options for the child to click on with parent supervising, the section incorporates the use of the Alpha-Mat and the activity is designed to monitor the child's reaction speed in identifying the letter once they are shown it on the screen.

4.1.0		Alpha-Mic	<p>The second of the three options for the child to click on with the parent supervising, the section incorporates the use of the Alpha-Mic and the activity is designed to verbally teach the alphabet pronunciation in a fun way, showing how the letters sound, how it is said and items beginning with that letter.</p>
4.1.5		Alpha-Mouse	<p>The third and final option for the child to click on with the parent supervising, the section incorporates a computer mouse and the use of traditional pencil and paper and is designed to teach the child how to write the lower and uppercase letters correctly.</p>
4.2.0		Activity Sheets	Stores worksheets used in Ref # 7.0.0
4.2.5		Settings	Ref # 3.0.0
4.3.0		Parental Panel	Ref # 1.0.0
4.3.5		Quit	<p>A single, ever-present location (which will be alongside buttons for 1.0.0 and 3.0.0) provides the user the control to exit the artefact at anytime.</p> <p>The user should be able to access the Quit option at any time while using the artefact</p>
		Exit	<p>A window will appear with the message – “Click Yes To Quit or No To Continue” – if user clicks ‘Yes’ the artefact will close down until they are back on their desktop – if they are in the middle of an activity task their progress on the task will be lost and the child’s points unknown to them being fed in to Ref # 1.2.0 will also be lost.</p>
		Don’t Exit	<p>If the user clicks ‘No’ they will return to the screen they were on (as this option will be available throughout artefact) when they clicked the option, no progress will be lost.</p>

Alpha-Mat Activity			
Ref #	Function/Feature	Attribute	Detail/Constraint
5.0.0	Alpha-Mat – Letter Reaction Activity (Or a similar name)		<p>User(s) can decide between identifying letters or objects beginning with various letters of the alphabet (depending on learning level) using their Alpha-Mat to stamp on the letter or object icon with the Mat's arrow(s) section.</p> <p>There will be a button in the top-right-hand corner of the screen alongside buttons for Ref # 1.0.0, 4.3.5 and 3.0.0 to return to 4.0.0</p> <p>If the user decides to press the 'return to home button') Ref # 5.0.5 will appear.</p> <p>The Alpha-Mat will display which ever light sequence which has been selected by the User in the settings, Ref # 3.1.0, this also goes for muting the sound from the Mat.</p> <p>The child will see their virtual avatar created in Ref # 1.1.0, stamping where they stamp on the screen.</p>
		Close Activity Window	<p>This will appear as a new window in the center of the artefact when the 'Home – 4.0.0' icon is clicked on, it will show a message – “To Return Home Click Yes or Click No To Return To Activity” – additional information about losing progress will also be in presence.</p>
		Yes	<p>Returns user back to Ref # 4.0.0 but their progress on the task will be lost and the child's points unknown to them being fed in to Ref # 1.2.0 will also be lost – this will encourage the parent and child to complete the task in its entirety.</p>
		No	<p>Returns the user back to the activity or position they were at, this doesn't result in progress data being lost.</p>

<p>5.1.0</p>		<p>Letter Identifier (or similar name)</p>	<p>The child will be faced with a stream of letters which will appear on the screen in front of them, these will be displayed in Capital and Lowercase form, and the voice-over will read out the letter which they will have learned in section 6.0.0.</p> <p>The child must stamp on the letter on the mat that they deem to be correct, based on what they have seen on the screen.</p> <p>There will be 26 different 'questions' in this section.</p> <p>If they answer correctly the screen will highlight 'green' and the voice-over will say "Well Done, Brilliant etc" – if they answer incorrectly the screen will go red and the voice-over will offer encouragement.</p> <p>All questions answered will flow in to Ref # 1.2.0; there will be an invisible stop-clock monitoring reaction speed of answers and the task will go on for as long as the parent set it be in 1.2.0</p>
<p>5.1.5</p>		<p>Object Identifier (or similar name)</p>	<p>The child will be faced with a stream of objects which will appear on the screen in front of them, these will be displayed in pictorial/animated states, and the voice-over will read out the object by name.</p> <p>The child must stamp on the letter on the mat that they deem the object to begin with, based on what they have seen on the screen.</p> <p>There will be 3000 different 'questions/objects', but parents can check Ref # 1.1.5 for question updates to add-on.</p> <p>If they answer correctly the screen will highlight 'green' and the voice-over will say "Well Done, Brilliant etc" and animation will run along with SFX– if they answer incorrectly the screen will go red and the voice-over will offer encouragement.</p> <p>All questions answered will flow in to Ref # 1.2.0; there will be an invisible stop-clock monitoring reaction speed of</p>

			answers and the task will go on for as long as the parent set it be in 1.2.0
5.2.0		Settings	Ref # 3.0.0
5.2.5		Parental Panel	Ref # 1.0.0
5.3.0		Quit	Ref # 4.3.5
Alpha-Mic Activity			
Ref #	Function/Feature	Attribute	Detail/Constraint
6.0.0	Alpha-Mic – Letter Pronunciation Activity (Or a similar name)		<p>User(s) can decide between watching the streaming video(s), which will teach the child pronunciation, they can also test their skills using their Alpha-Mic.</p> <p>There will be a set of buttons in the top-right-hand corner of the screen which will house Ref # 1.0.0, 3.0.0, 5.0.5 and 4.3.5</p> <p>The Alpha-Mic (hardware) settings will reflect the one's set in Ref # 3.0.5</p>
6.0.5		Alphabet Pronunciation Videos	<p>There will be all 26 letters on the screen that the child can pick from.</p> <p>Depending on which letter the child clicked they will be faced with a stream of video which will appear on the screen in front of them above the 26 letters, there will be the letter they chose in pictorial/animated states, shown in both capital and lowercase and the voice-over will pronounce the letter to the child, how it is said, how it sounds to say and an item beginning with that letter.</p> <p>The child will then be invited after watching this video to try to repeat the three ways of pronunciation the voice-over told them using the Alpha-Mic and the voice recognition technology will record whether they have done this correctly.</p> <p>If they answer correctly the screen will highlight 'green' and the voice-over will say "Well Done, Brilliant etc" and animation will run along with SFX– if they answer incorrectly the screen will go red</p>

			<p>and the voice-over will offer encouragement and repeat the pronunciations.</p> <p>All questions answered will flow in to Ref # 1.2.0</p> <p>Once the child pronounces the words correctly they will return to the start of Ref # 6.0.5 to choose another letter or move elsewhere.</p>
6.1.0		Alpha-Mic Test (Or a similar name)	<p>The child will be faced with a stream of letters (similar to 5.1.0 and 5.1.5) which will appear on the screen in front of them, these will be displayed in pictorial/animated states, and the voice-over will ask the child to pronounce the letter as it is said or how the letter sounds.</p> <p>There will be 52 different 'questions' in this section.</p> <p>If they answer correctly the screen will highlight 'green' and the voice-over will say "Well Done, Brilliant etc" – if they answer incorrectly the screen will go red and the voice-over will offer encouragement.</p> <p>All questions answered will flow in to Ref # 1.2.0</p>
6.1.5		Settings	Ref # 3.0.0
6.2.0		Parental Panel	Ref # 1.0.0
6.2.5		Quit	Ref # 4.3.5
Alpha-Mouse Task			
Ref #	Function/Feature	Attribute	Detail/Constraint
7.0.0	Alpha-Mouse – Letter Writing Activity (Or a similar name)		There will be a set of buttons in the top-right-hand corner of the screen which will house Ref # 1.0.0, 3.0.0, 5.0.5 and 4.3.0

7.0.5	Pen or Alpha-Mouse	User(s) can decide between using a pen and paper or a mouse to complete tasks by clicking on the relevant icon.
	Click Pen	If the user clicks the Pen and Paper icon a new window will appear in the middle of screen asking if they have the correct activity sheets to work from – “Do you have the activity sheets from the Activity section – Yes or No?”
	Yes	Move on to Ref # 7.1.0
	No	User is shown a message “Go back to the Main Menu and download and print out the correct worksheets from the Activity section” – they then return to the start of 7.0.5
7.1.0	Pen and Paper	<p>The user is shown a streaming video of how to write lowercase and capital letters, after each letter the child is then asked to trace out what they have just seen on to the relevant Activity document printed from Ref # 8.0.0 with Parental guidance before moving on to the next ‘letter clip’</p> <p>The stats are obviously not fed in to Ref # 1.2.0 as the parent will be present for this task.</p>
7.1.5	Click Mouse	<p>The user is shown a streaming video of how to write lowercase and capital letters, (similar to Ref # 7.1.0), but after each letter the child on their own is then asked to trace out the letters using the mouse on the virtual activity sheet (similar to one under Ref # 8.0.0) underneath the video before moving on to the next ‘letter clip’</p> <p>If they trace the letter in the correct direction, the screen will highlight ‘green’ and the voice-over will say “Well Done, Brilliant etc” – if they answer incorrectly the screen will go red and the voice-over will offer encouragement.</p> <p>The stats are fed in to Ref # 1.2.0 so the parent can identify what letters the child is struggling with.</p>

7.2.0		Settings	Ref # 3.0.0
7.2.5		Parental Panel	Ref # 1.0.0
7.3.0		Quit	Ref # 4.3.5
Activities Print-Outs			
Ref #	Function/Feature	Attribute	Detail/Constraint
8.0.0	Activities Print-Outs		<p>A list of sheets needed for tasks in 7.0.0</p> <p>There are print icons under or alongside each sheet.</p> <p>Is linked to Ref # 1.1.5 so when Parent downloads updates from www.abc3.com new sheets are posted in this section.</p>
		Click Print	When clicked the artefact tries to detect the local printer, if it does then the sheet is printed, if it can't an error message window will appear in the middle of the screen "ABC3 Can't Detect Your Local Printer – Please Make Sure It is Switched On And Set Correctly" and when the users clicks on OK on this window they will return to the start of 8.0.0
8.0.5		Settings	Ref # 3.0.0
8.1.0		Parental Panel	Ref # 1.0.0
8.1.5		Quit	Ref # 4.3.5