

Alphabets Learning for Autistic Children

Advance Graphics and Animation (AGA)

Presented By -

Mainak Dutta – (IRO2017009)

Ankit Petkar – (IRM2014002)

Aniket Pal - (PHC2017002)

Introduction

Autism, a mental condition, present from early childhood, characterized by great difficulty in communicating and forming relationships with other people and in using language and abstract concepts.

Children at early age show the symptoms of autism such as no display of feelings, less social interaction etc. Teaching them to learn alphabets is not an easy since most of the autistic patient are visual learners. If one associates an object with an alphabet or alphabet with an object, then it's easier for them to remember those alphabets. They respond well to music and short conversations. Taking that in consideration we have developed a web-application to learn A-Z alphabets in more interactive way. Further we can add more learning elements such as digits, nouns, etc.

Demonstration

Following is the step by step explanation of the web application.

Page 1.



Figure 1. Start page with a soothing background music with the start symbol to start the ABCD interactive learning.

Page 2 -

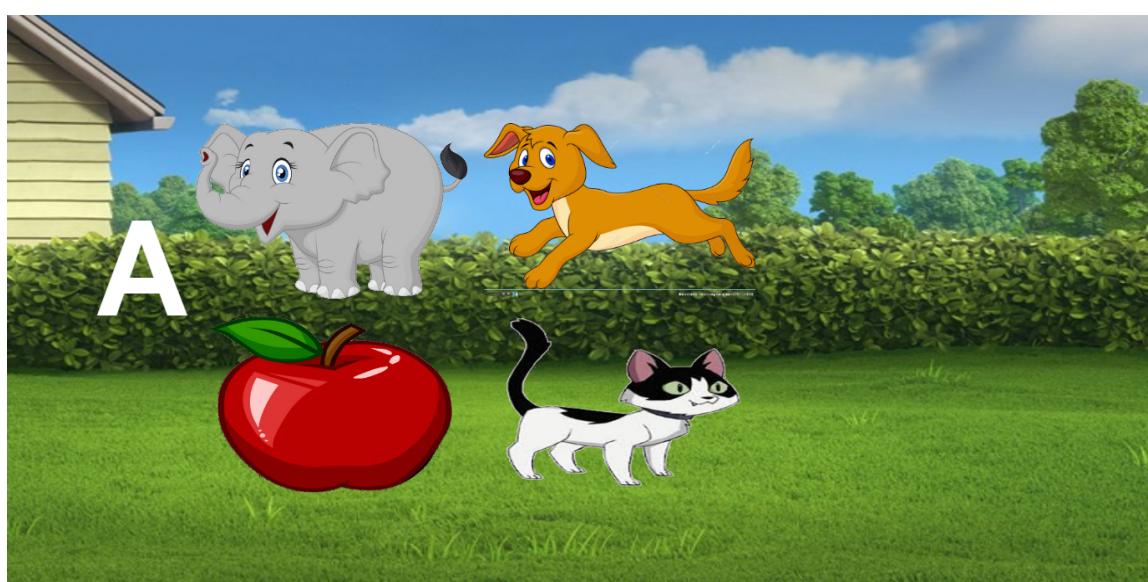


Figure 2. Page two contains letter 'A' and some pictures in this case – Elephant, Dog, Apple, Cat in which the child has to choose which one corresponds to letter 'A'.

Page 3 -

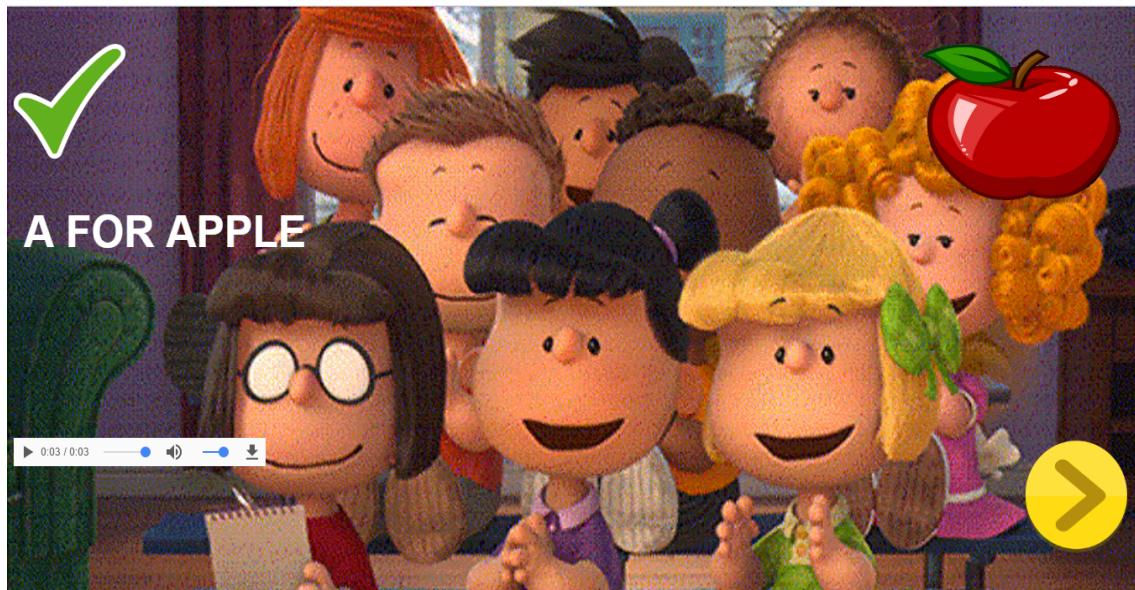


Figure 3. If the child chooses the correct option then he/she will be directed to this page , Background voice says "A for Apple" and , the play option is present to repeat the pronunciation again. Another background congratulation tune is added to remember that this is a response to the right answer. The arrow sign directs to the next letter.

Page 4 -



Figure 4 - Page 4 contains letter 'B' and some pictures in this case – Joker, Fish, Ball, Vegetables in which the child has to choose which one corresponds to letter 'B'.

Page 5 -

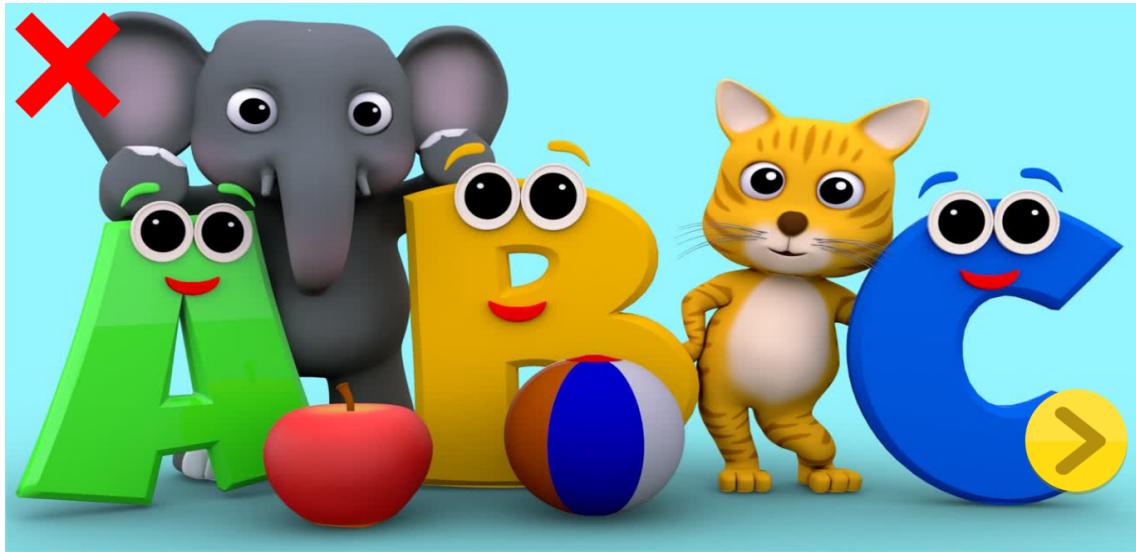


Figure 5 - If the child chooses the Wrong option then he/she will be directed to this page. There will be an audio response for a wrong answer to know he/she choose wrong. The arrow sign directs to the same letter to try again but this time the options are shuffled.

Page 6 -

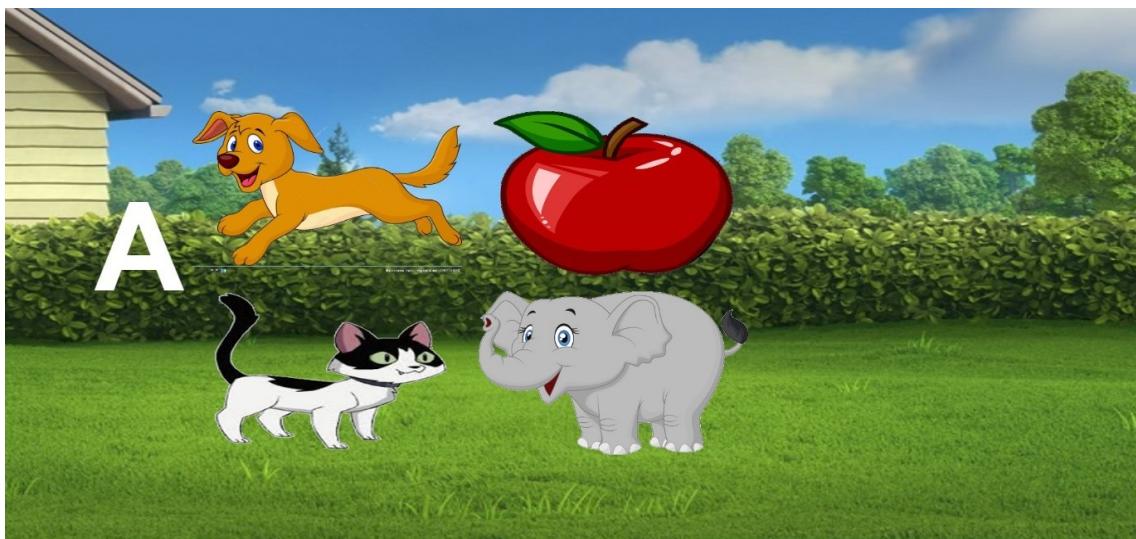


Figure 6 – In case he/she chooses the wrong option, they are again redirected to the same letter with the options shuffled. And again he/she will choose new option.

Update and Control

Following are the steps regarding update and admin privileges for the user.

Page 7 -

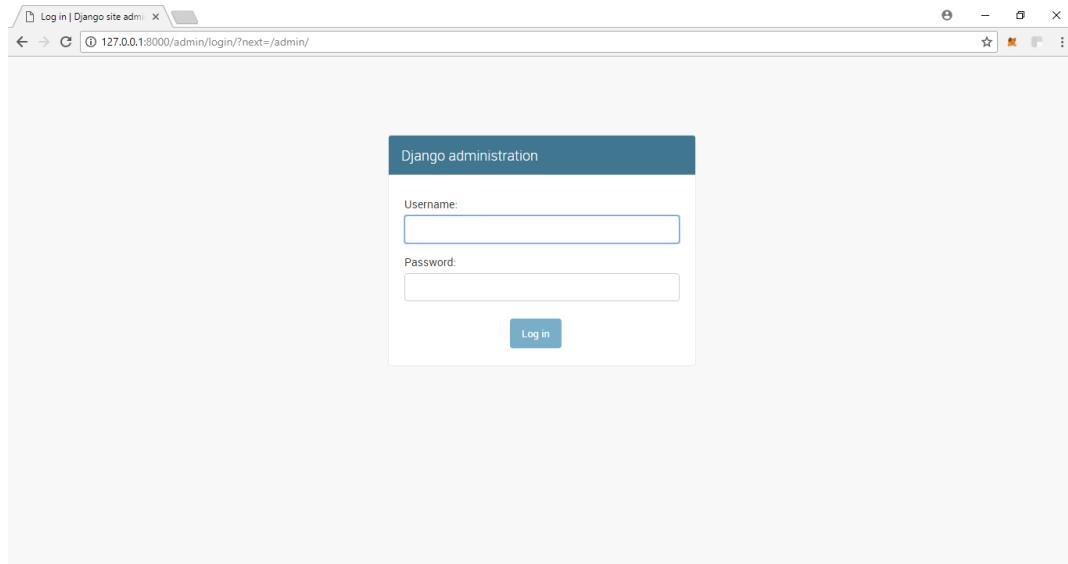


Figure 7 – Enter ‘home-address/admin’ in the browser , you will be directed to above page where you are asked to enter your login details. This will direct you to the Admin page.

Page 8 -

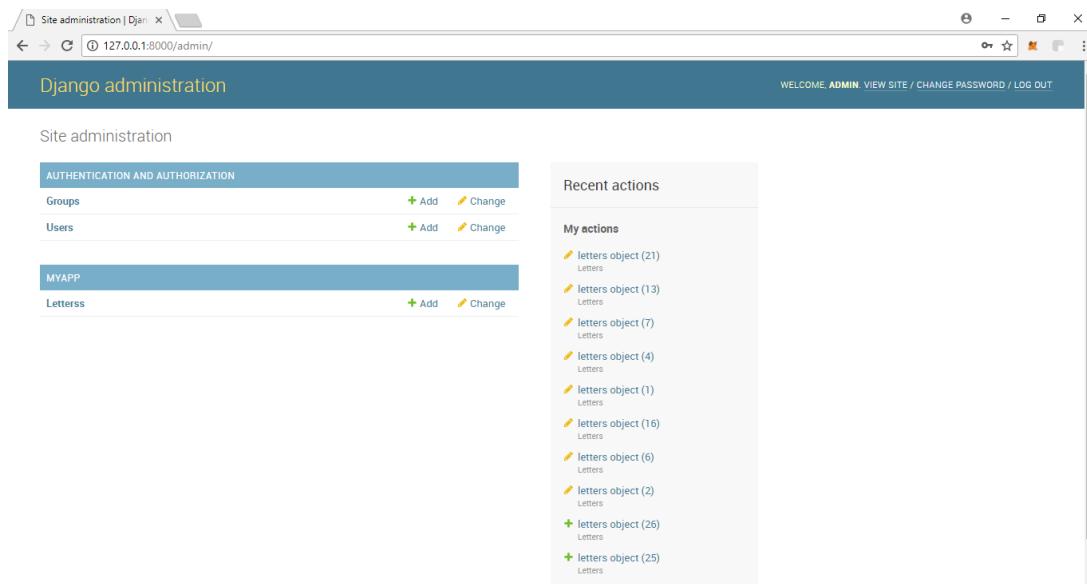


Figure 8. Admin page contains 3 main sections , Groups ,Users and Letters.

- i. Groups – new groups can be created and given admin privileges.
- ii. Users – new users can be added.
- iii. Letters – If you want to make some change in alphabets or images click this option.

Page 9 -

The screenshot shows the Django admin interface for the 'Letters' model. The title bar reads 'Django administration' and 'WELCOME ADMIN VIEW SITE / CHANGE PASSWORD / LOG OUT'. The main content area is titled 'Select letters to change' and shows a list of 26 selected items under the heading 'LETTERS'. Each item is labeled 'letters object (number)' where 'number' ranges from 14 to 26. At the top right of this list, there is a button labeled 'ADD LETTERS +'. Below the list, there is a search bar with placeholder text 'Select letters to change' and a 'Go' button.

Figure 9. Clicking Letters option in previous page directs you to the above page where new letters can be added or changes can be made to the existing ones.

Page 10 -

The screenshot shows the 'Change letters' form page for a specific letter object. The title bar reads 'Change letters | Django' and '127.0.0.1:8000/admin/myapp/letters/17/change/'. The main form has several fields:

- 'Enter A letter:' with a text input field containing 'Q'.
- 'Enter the correct Image:' with a file input field showing 'Currently: pics/Queen_Qj90o6s.png' and a 'Choose File' button.
- 'Upload the name of the correct object:' with a text input field containing 'QUEEN'.
- 'Upload 1st incorrect Image:' with a file input field showing 'Currently: pics/Dog_hnuDqaY.png' and a 'Choose File' button.
- 'Upload 2nd incorrect Image:' with a file input field showing 'Currently: pics/watermelon_PpczCa.png' and a 'Choose File' button.
- 'Upload 3rd incorrect Image:' with a file input field showing 'Currently: pics/Umbrella_c00GQ9k.png' and a 'Choose File' button.
- 'Upload Audio Ex: A for Apple:' with a file input field showing 'songclips/Queen.mp3' and a 'Clear' link.
- 'Enter the text : Ex: A FOR APPLE:' with a text input field containing 'Q FOR QUEEN'.

Figure 10. Above page is where the actual update and changes of letters, images, sound responses are done.

Software Requirements

1. Python 3
2. Django 2
3. HTML5
4. Bootstrap
5. CSS
6. Java-script
7. Gimp editor

Future Work

Learning digits, Simple Nouns, small phrases learning can be integrated. The pictures given can be changed if necessary since some autistic children may like some particular things so learning can include those things to make it easier to teach and interact with them. Application is completely customisable according to their need. Update and control provides full flexibility to add new language alphabets new images and their audio response as well making it more universal.