

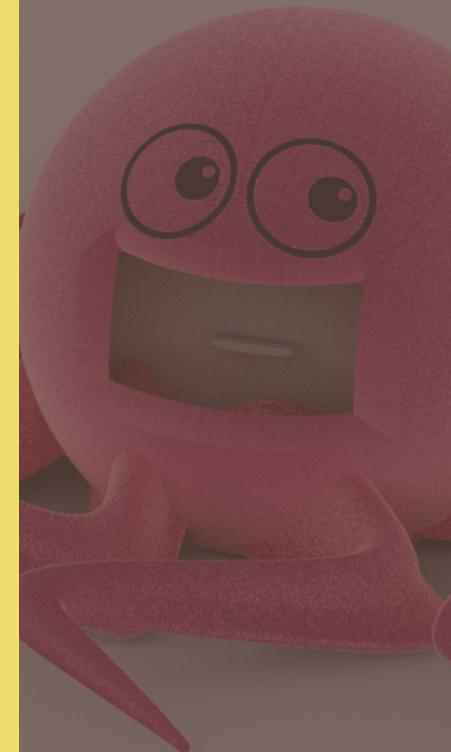
TOY DESIGN

OCTOBUD

FOR CHILDREN WITH DOWN SYNDROME

OCTOBUD CUDDLY + SMART!

Octobud is a cuddly toy + teaching buddy that has been designed after extensive field research to enhance the cognitive skills of children with Down Syndrome. The product uses an app with level based teaching videos & sees a phone as a temporary screen, not a 'phone'. The phone can be attached to the toy tightly (so that children, who have poor motor skills, cannot move it) with the app on. After 15 minutes, the app will close & will be unusable for 3-5 hours. During this time, phone can be removed & the toy will be a fluffy cuddle bud.



WHAT MAKES A GOOD TOY?



DESIGN

The product is in the form of an octopus with a tight attachment in front for the phone, or as we like to call it - the temporary screen. Each tentacle corresponds to one teaching skill & the actual product would have icons on the tentacles so that the children can press the tentacle & the app would start playing the teaching video for the respective skill. The tentacles light upon being pressed to give feedback & excite the child. The toy has texture in order to give the child tactile feedback & a better experience. The toy is sturdy & the phone holder comes ahead of the phone screen hence protecting the phone from any damage.



DESIGN

The tentacles on the Octopus can be pressed by the child and this pressure can actually improve the motor skills of the child as well. This is how the form of the toy connects to the function and the aim at hand. Children with Down Syndrome become attached to objects that interact with them hence they would get attached to this toy which would lead to good learning & development of the child.

APP DESIGN



The app has been designed by the designer & coded by the CSE students. Detailed information on the app design & code has been provided in the design & CSE folders. The app has been designed keeping in mind simplicity, youth & compatibility with the form of the toy.

SAMPLE APP FLOW

The diagram illustrates the sample app flow for Octobud, showing the sequence of screens from welcome to skill selection and back to a previous screen.

Welcome to Octobud
Tap here to go to the next screen

Set difficulty for your child
Tap here to go to the next screen

Welcome Back
Tap here to go to the next screen

Octobud has been designed specifically for people with Down Syndrome. It will accompany your child and/or teacher. Please enter the 8 digit product code (located on the head or neckbeard of any infant with Down syndrome).

Hello Jagriti Aqnihotri
What is your child's name?
hits
Next >

Dear reader: welcome to Octobud! It will help them develop cognitive skills in relation to language.

Each module has been designed to teach a specific skill or topic.

Skills will be taught through audio-visuals.

Each skill is taught at different levels. You can either choose a level as per your child's current development stage or set a level.

Dear reader: welcome to Octobud! It will help them develop cognitive skills in relation to language.

The app has been designed to switch off automatically after 150 minutes. The app cannot be used unless there is a gap of at least 3 hours.

Select One:

- ALPHABETS ABCD
- WORDS DOG; CAT
- I AM HUNGRY
- HUMPTY DUMPTY
- COLOURS RED; PINK
- THANK YOU
- NUMBERS 1,2,3,4,5
- SPECIAL EDITION MADHINI PACK

Choose a level:

- EASY
- MEDIUM
- DIFFICULT

Current Difficulty Level: EASY

Learning goals:

- red
- yellow
- blue

Day "THANK YOU" WHEN YOU GET SOMETHING LA LA LA

kapwing.com

Day "THANK YOU" WHEN YOU GET SOMETHING LA LA LA

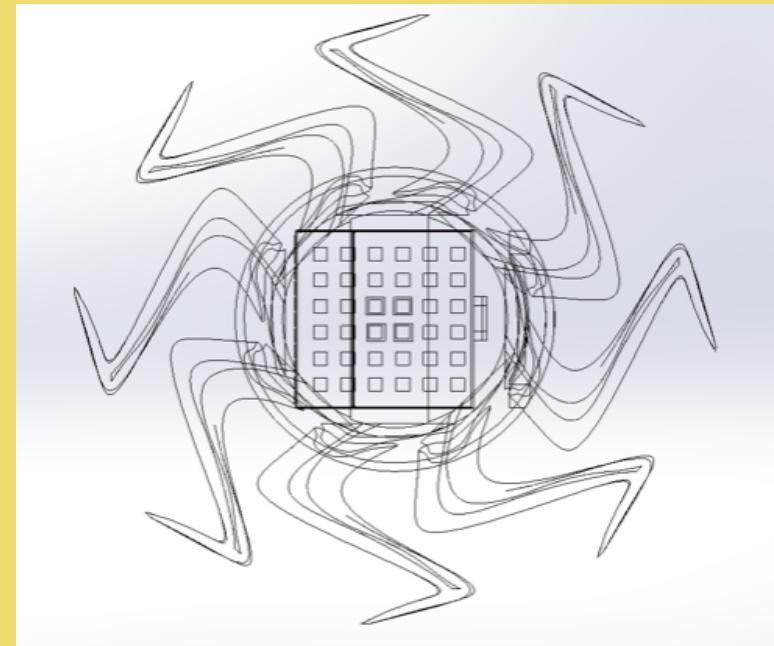
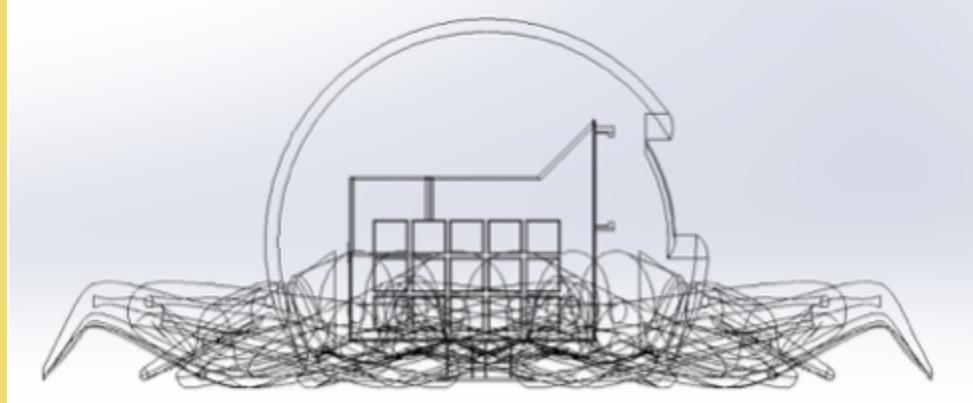
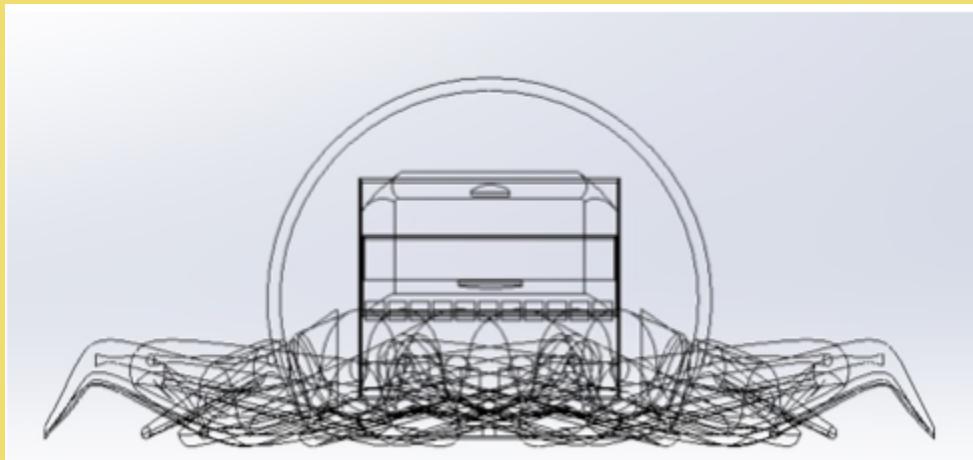
kapwing.com



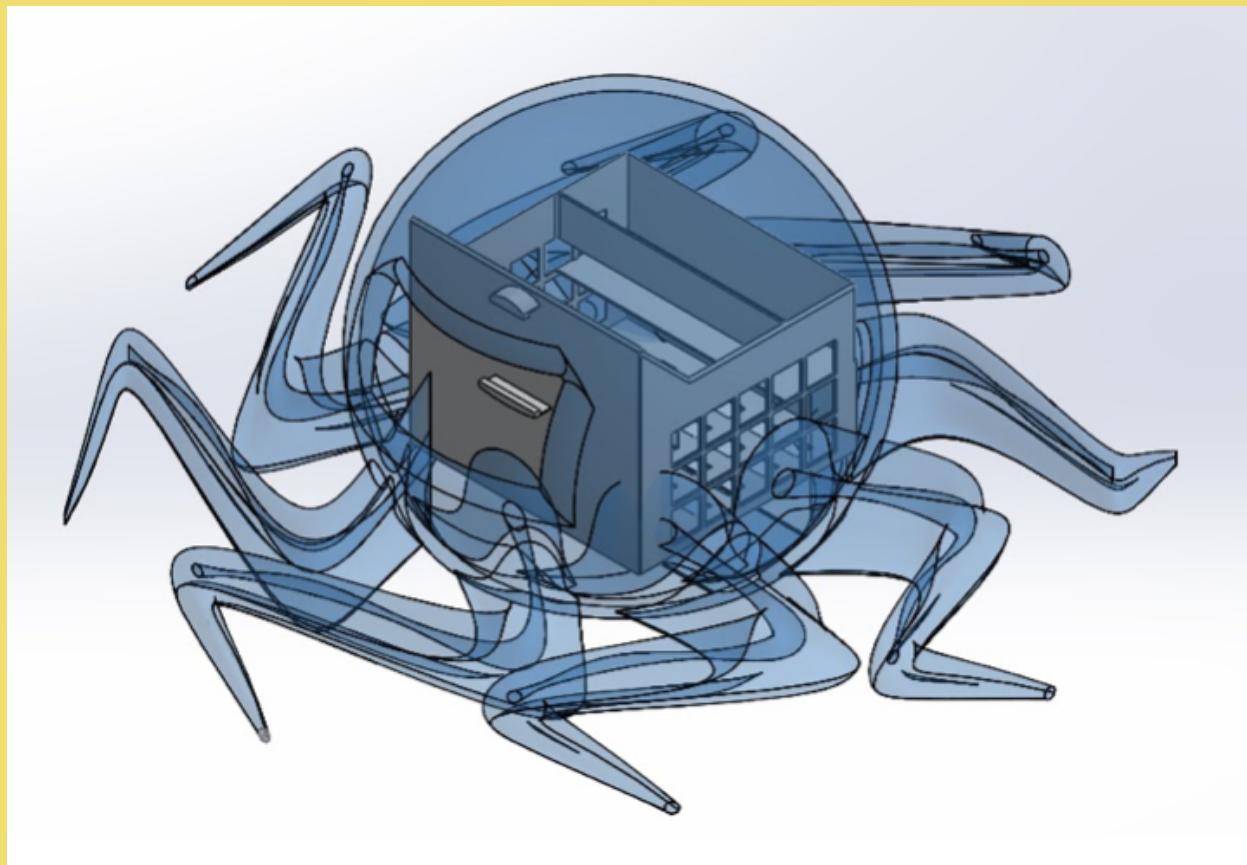
MECHANICAL DETAILS

There are 2 parts of the toy - Inner & Outer. Functions of the inner part - To provide sufficient stiffness; To work as the base of the toy; To hold the mobile phone; To contain & protect the electrical devices; Internal structure of the toy; To increase robustness; To provide safety of the mobile phone. The material used - Aluminium alloy 6061 because it is lightweight & stiff. Functions of the outer part - For softness of the toy; For aesthetics of the toy. The material used - Felt & cotton.

WIREFRAMES

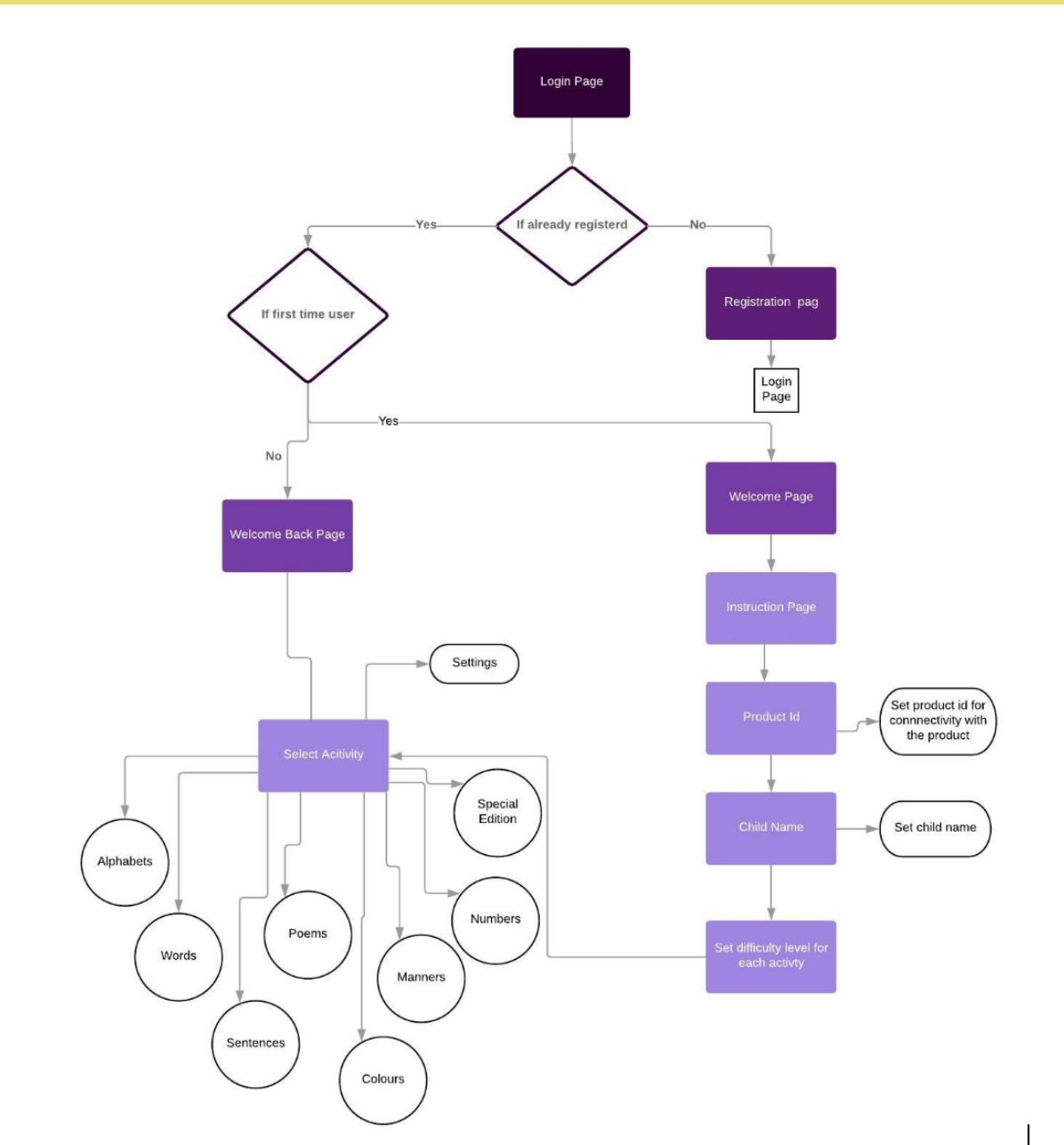


ISOMETRIC VIEW



PROGRAMMING DETAILS

An android application that can be installed in the parent/guardian's phone and can be plugged in for 15-20 minutes so the child to learn. Android phones are common in most households and the application runs on API 21 and higher thus targeting more than 96 per cent of Android users. The phone can be removed from the toy and used as usual. Hardware interfaces - Arduino microcontroller along Bluetooth module for connectivity with the app. Development supports Android version 4.0 and above. Database - SQLite.

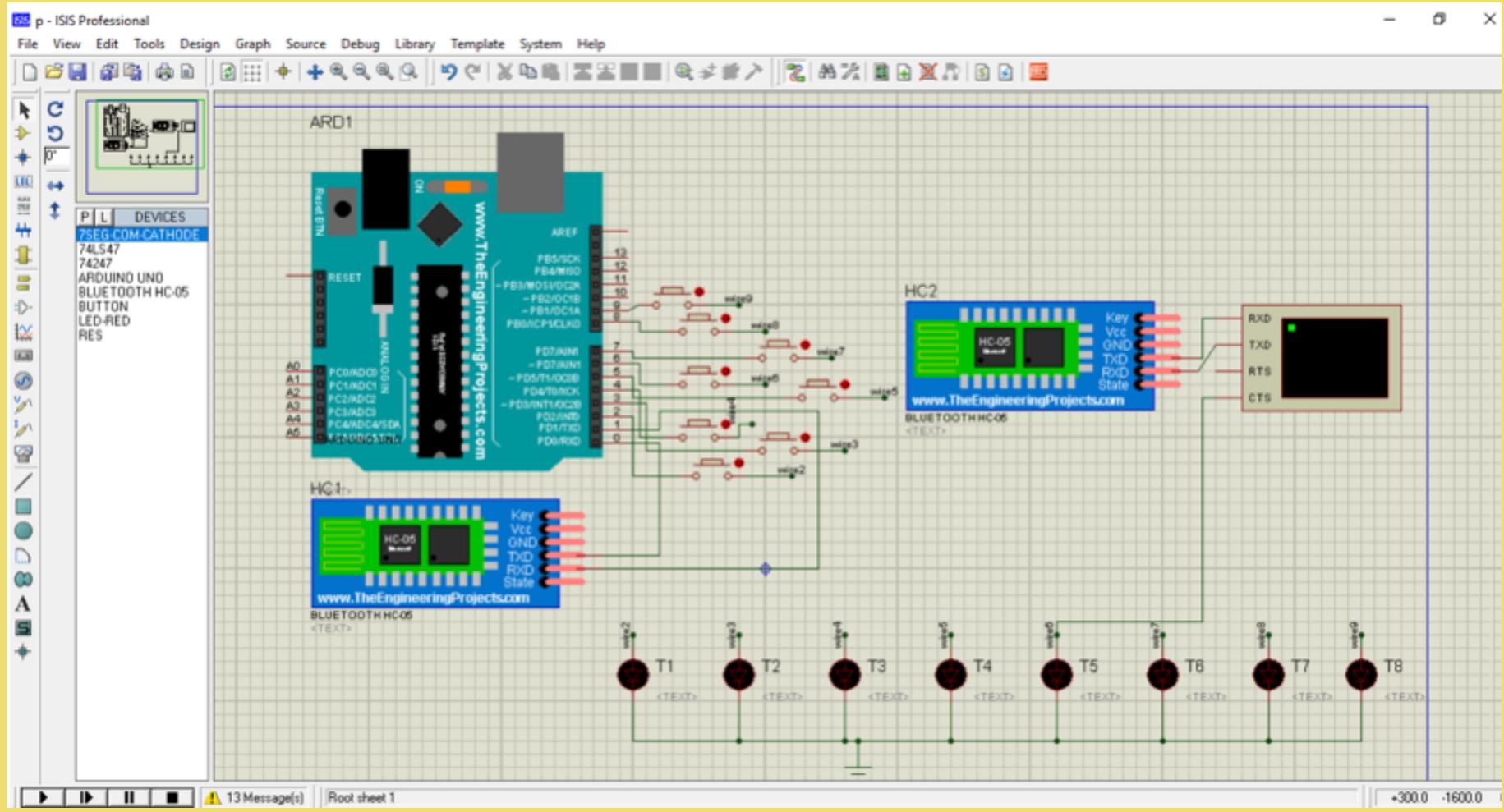




ELECTRONIC DETAILS

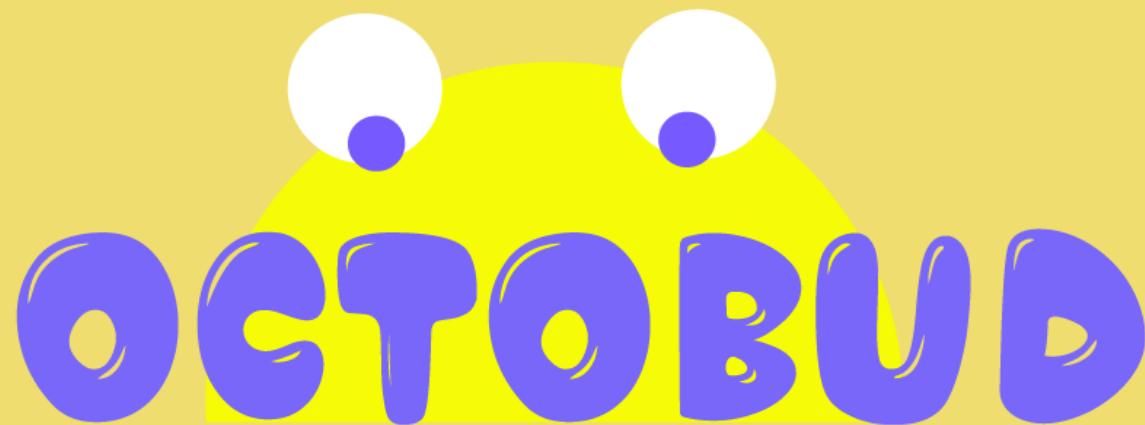
Components used - Arduino Nano; Muscle Wires, Bluetooth Module, Push Button & LEDs.
Details have been provided in the report

THE CIRCUIT



BRANDING

The logo is bright & fun - exactly what we aim to achieve with our toy. The colours used have a large contrast in order to create a greater focal point & excite the viewer. The font is fun & bubbly - giving a marine type feel to the product.



To know more,
visit www.octobudinprogress.com

OCTOBUD

The all in one fluffy friend cum teaching companion -
specially designed for children with Down Syndrome

Designed keeping in
mind major
impact protection
against tantrums,
screams & throws.
(with & without
the screen inside)



Just put your
phone inside &
get the Octobud
app to unlock
teaching mode!
We look at phones as
temporary screens,
not "phones".

Specially designed
after well done research
for children with Down
Syndrome. Their love for
colours, storytelling
& learning - all combined
into this fun little toy!

Teaching buddy
with phone; cuddle
buddy without!

THE TEAM

Tanishqa Bobde 2016528 (Design)

Revati Mahajan 2016142 (CSE)

Jagriti Agnihotri 2016111 (CSE)

Rishabh Bajpai 2016207 (ME)

Rishabh Singh Tomar 2016209 (ECE)

Atul Kumar 2016056 (ECE)



A large, brown, fluffy teddy bear is sitting on a patch of green grass. It is holding a black smartphone in its front paws. The bear's head is tilted slightly upwards and to the right, looking towards the phone. The phone screen is dark, and the bear's reflection is visible on it. The bear's fur is a light brown color, and it has a small red bow tie around its neck.

**THANK
YOU!**
