**First ever! Wooden, Screen free, Multi-Language, STEAM Oriented, Braille compatible, Physically programmable, Robot!**

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**Q & A for Aarohan**

**DOES YOUR PRODUCT HAVE A CLEAR TARGET MARKET OR AUDIENCE?** Yes definitely our many ideas is to make kids grasp the logic behind the programming/coding. So we would say our target audience are children. As our product allows children to perform programming within local languages like Kannada, Hindi etc including English. its widely acceptable in govt schools. And also our product is so designed that, even visually impaired children can learn programming.

**DOES YOUR PRODUCT ADDRESS A CLEAR NEED, PROBLEM, OR OPPORTUNITY?** Yes, we address an opportunity to let the kids learn programming and explore all by themselves without using any additional gadgets like Tab, Laptop, Mobile, Desktop etc. This product can leverage the creativity of a child which helps one to come up with many new programs on their own and Our product is also eco-friendly, as of now we have used wood to build the body of the product.

**DOES YOUR PRODUCT HAVE A POTENTIAL TO SCALE AND POSITIVELY IMPACT PEOPLE??** Absolutely Yes. as We all know the world is picking up with more automation, robotics, AI etc, both to stay and beat the competition its very much required to educate/train our children, who are our future and will be discovering the same platforms. Fortunately, few International private schools provide this kind of training for children at a younger age. However 77.9% of our existing schools are Govt and Govt aided Schools who learn in local languages. Now this is where our product comes into the picture. This Product ROBOL can enable children, even situated in rural areas and with the regional languages can learn programming at a very young age. It triggers him/her to sneak into a whole new digital world waiting for him/her to discover.

**DOES YOUR PRODUCT HAVE COMMERCIAL VIABILITY??** Yes. We can also come up with various foreign languages as well.

**IS YOUR PRODUCT ECONOMICAL AND SUSTAINABLE?** Yes its economical, as we don’t require additional gadgets to operate it and it’s sustainable too.

**DOES YOUR PRODUCT INCLUDE INNOVATIONS IN TECHNICAL DESIGN AND/OR IMPLEMENTATION?** By the mercy of the Supreme Lord inspiring within, we are able to come up with a unique design. Our product uses a new format with the existing technology to teach children programming especially for visually impaired through having various holes of 3 X 2 Matrix in the form of Command coins which is nothing but integrating Braille system in it, which is Unique and first of its kind.

**Q & A for Aarohan**

**IS YOUR PRODUCT TECHNOLOGICALLY VIABLE?** We already have a working prototype with us so we would say ‘Yes’ it is

technologically viable, Sir. **IS YOUR PRODUCT A FULLY FUNCTIONING PROTOTYPE, BEYOND A CONCEPT IDEA OR MOCK UP?** Yes, it is a fully functioning prototype and this was made possible by the great team we have. **IF THERE ARE SIMILAR PRODUCTS OR SERVICES IN THE MARKET, DOES YOUR PROJECT CLEARLY AND MEANINGFULLY INNOVATE BEYOND THOSE EXISTING PRODUCTS OR SERVICES?** Well, to be honest, No, Sir. There is no such product in the market similar to this one, which can help a regional language child, a visually impaired child to learn programming.

**DOES YOUR PRODUCT PRESENT A NEW AND IMPROVED WAY OF SOLVING A PROBLEM?** We are giving a way to children, an opportunity, a window to peep in to the digital world. And preparing these kids for the future at the same time have fun while learning.

**IS YOUR PRODUCT OR PROTOTYPE USER-FRIENDLY, SIMPLE AND INTUITIVE TO USE?** We are very happy to answer this question. Yes, its most simple yet most revolutionary, making a child ‘future ready’.

**DOES YOUR PROTOTYPE HAVE DURABILITY?** Yes, its durable. However there is a lot of room to enhance it, we may require expert guidance on the same.

**DOES THE ENTRY PRESENT YOUR PRODUCT CONCISELY AND EFFICIENTLY?** As much we understand, we have tried it to present our product concisely with all the necessary documents attached.

**IS YOUR PRODUCT’S PURPOSE AND BASIC FUNCTIONALITY EASILY UNDERSTOOD?** Yes , because our main Audience are the children, so we are presenting the product as simple as possible and easily understandable.

DOES YOUR PRODUCT EXPRESS A POSITIVE TONE? Definitely yes, we are expressing through our product that, digital screens and laptops are not only the means to learn and prepare themselves for the future. But while playing toy like Bot can also teach them programming in an easier way. Which is highly appreciated and widely accepted under STEAM education model.

**Report Contents:**

• Product Description

• Statistics

• Using the product

• Product elements

• Product prototyping stages

• Product block diagram

• Mechanical designs - BOT and SLATE 2D designs - Coins design for different languages

• Hardware designs - Block Diagram - PCBs designed

• Software designs - Software architecture - Algorithms used

**Product Description**

**Robol** is a technology that helps children learn programming in a simple manner.

Today’s children are immersed in technology from a very young age. This exposes them to some of the biggest vision-related risks; minimising this is our primary motivation in creating a “screen-free product.” There is no radiation emitting display present in our product.

Our product comprises of 2 major parts - the bot and the slate.

The bot is given a set of commands by placing coins in the slate; each coin represents a specific keyword - this includes almost 40+ keywords directly taken from today’s computer programming. Our Product is also capable of taking in input commands through different types of sensors such as touch, rain and obstacle detection, which are embedded in the bot.

We also cater to the needs of those who are visually impaired, by integrating the braille system into products.

It is also our mission to integrate all the local languages of our country. While we have a long way to go, we can proudly say that our product is already accessible in three different languages - English, Hindi and Kannada.

**Product Elements**

The **bot** is given a set of commands by placing coins in the slate. It is also capable of taking in input commands through different types of sensors such as touch, rain and obstacle detection, which are embedded in the bot.

The **slate** scans the coins when they are placed in their slots, and sends their commands to the bot.

Each **coin** represents a specific keyword - this includes almost 40+ keywords directly taken from today’s computer programming.

**Statistis**

**40 computer related jobs were identified for Blind and Visually Impaired persons. Of these, 38 were found viable (28 fully, 10 partially) for persons with total loss of sight.**

**- http://nivh.gov.in**

**There are 372.4 millions of children of age group 0 to 14 among which 273.6 million (73.46%) are from rural and 98.8 millions (26.53%) from urban areas.**

**According to the ministry of statistics and programme implementation ( MOSPI) govt of india 2011 census in india**

**Using the product**

INSERT COINS ON SLATE AND SLIDE THE SCANNER

SLATE WILL SEND COMMANDS TO RORA

OYA!! RORA RUN YOUR COMMANDS!!

OYA!! RORA RUN YOUR COMMANDS!!

**Product prototyping stages**

**Mechanical designs** BOT and SLATE 2D designs

**Mechanical designs**

**| Coins design for different languages**

**Hindi**

**Kannada**

**English**

**Braille : Default, Coin holes are designed with Braille style**

**Hardware Design | Slate Hardware Block Diagram**

**BOT Hardware Block Diagram**

**Hardware Design | Slate and BOT PCBs**

**Software Design | Slate Software State machine**

**BOT Software State machine**

**Thank you!**

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