



SPHEROBOT

Team: ASTHA MEHROTRA
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Team ID : 234556

Internal guide: Prof. Nirali Pandya

Sphero-ball is a spherical robot with a free-moving domed head. It is white, with orange and silver accents and a black optical lens on its headpiece. Sphero-ball also possesses multiple panels containing various tools or ports.



BASIC IDEA:

A running hamster inside a ball tends the ball to move in a certain direction. If we somehow add an electric component inside a ball with four wheels, the ball will move accordingly

A cartoon chipmunk with a surprised expression, showing its teeth, sitting inside a large glass sphere on a grassy field.

ABSTRACT

The 21st century is a century for robotics. Robots have long borne the potential to bridge the gap between the cybernetic world and the physical world. Robotics is set to play an ever increasingly important role in society healthcare, building service, manufacturing, food production, logistics and transportation.

The scheme of SPHERO-BALL comes from the idea of nomads in early days who were in dire need of navigation dolls. This system can act like a navigation doll for them. This versatile product can also serve as a strong influence for detecting metallic elements in the earth's crust in unattainable forms of lands such as bad land topographies.

The lucrative ideal robot comes with a visual camera on the top of its structure. This powerball will eventually be one of the finest creations in the futureland of robotics. Any sufficiently advanced technology is indistinguishable from magic



**ROBOTS
ARE THE FUTURE**

AEIOU CANVAS

AEIOU is an investigative tool to help interpret observations gathered by ethnographic practices in the field. It is an Observation tool. Its two primary functions are to code data, and to develop building blocks of models that will ultimately address the objectives and issues of a client.

AEIOU stands for 5 elements to be coded:

1. ACTIVITY
2. ENVIRONMENT
3. INTERACTION
4. OBJECT
5. USER

AEIOU SUMMARY:

GROUP ID: 255332

Astha Mehrotra

DATE:

7 July 2020

VERSION : 1

DOMAIN NAME: Briyansi Dabhi

ENVIRONMENT :

Airports

Archeological sites

Security Cameras

Hospitals

INTERACTION:

Government

Robotics Cell

Private Industries

Scientific Labs

Archeologists

OBJECTS:

Metal detector chip

Navigation system

CCTV

Temperature sensor

ACTIVITY :

Detect metal particles

Sense Temperatures

Navigation

Gyroscope

Record Visuals

Omni direction

USERS:

Doctors

Archeologists

Airport Authorities

Tourism Navigator

Scientists

Robot developers

EMPATHY CANVAS

To define any user centric problem we need to know the user properly. That was what this canvas was all about. We thought of so many people but wanted to go for some people that mostly remain untouched by technology but are larger in number. They cover a large mass but are least touched with technology.

Design For : MBIT COLLEGE
(630)

Date: 3 March

Designed by: Astha Mehrotra
Briyansi Dabhi
Version : 1

USER Doctors/Archeologists Tourism/Airports	STAKE HOLDER Researchers Security providers
ACTIVITY Detect Metal Particles Record visuals/ Gyroscope	Sense Temperature/ Omni Direction Navigation
STORYBOARD HAPPY This adorable little sphere was sent to earth's most impossible spot. It comes back with crucial factors and information like temperature, records visuals , finds metals etc.	
HAPPY Sphero is a unique astromech, a spherical droid that speaks to the wonder of physics. BB-8 is way more than just adorableness with a circumference, he is now a major part of the story of a galaxy far, far away.	
SAD There lived an old man, all alone , all by himself. One day, he was sound sleep and few robbers broke in and robbed him	
SAD Once an archeologist was on duty , on an ancient hill side. There was a cave , too small for him to get in and he almost missed the site because of that	

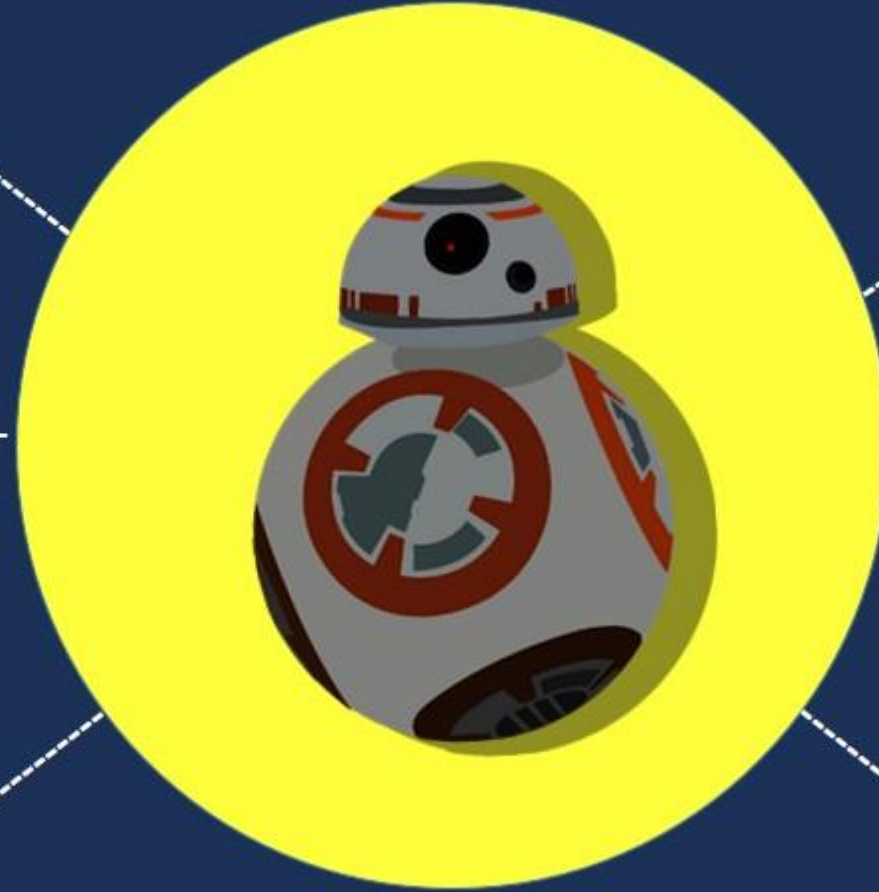
MIND MAP CANVAS

Mind map is a diagram in which information is presented visually, usually with a central idea placed in the middle and associated ideas arranged around it. A mind map for the project “SPHERO” is made.

MIND MAP

TEAM: ASTHA MEHROTRA
BRIYANSI DABHI

SPHERO BALL



Props

- Metal detector chip
- Alarm sensors
- Navigators
- Camera
- Magnets

Users

- Tourists
- Archeologists
- Doctors
- Airport Authorities
- Navigators
- Scientists

Features

- Metal detector
- Temp. Sensor
- Camera
- Alarm system

Stake holders

- Client
- Dealers
- Researchers
- Government

IDEATION CANVAS

- . At third week we started with Ideation Canvas where first we started with people, where we simply thought about the people for whom we want to solve the problem. So, our problem definition which we wanted to develop is 'SPHERO'. This canvas includes people, activity, situation, context, location and props, possible solution. People includes Doctors, Archeologists, Scientists, Robot developers et

Archeologist

Scientists



PEOPLE

Travel Buddy

Pilots

Defense

Government officials

Cinematographers

Astronaut

Robotic Members

Navigators

Doctors/ Nurses

Tourists



ACTIVITIES

Detects Metal

Navigator

Temperature Sensor

Camera records visuals



SITUATION/LOCATION/CONTEXT

Archeological sites

Tourist spots

Scientific Labs

Robotics Cell



PROPS/TOOLS

Metal detector chip

Axis and Circuit

Temp. detector chip

Magnets

Spherical Body

Sound chip

PRODUCT DEVELOPMENT CANVAS









. Product development is a holistic process. It consists of a number of moving pieces, whether they are people, features, or hopes and dreams of client teams. This canvas adds structure to the chaos, and has become a central artifact in our variable design process. It can be applied to problems and businesses of all types and sizes. We use it when kicking off a new feature or product to inspire team alignment, and mitigate long-term risk.

By dusting off the granular details at the onset of a new project or product, we avoid stakeholder misalignment and tough conversations mid-way through, when tensions are high and resourcing is limited.

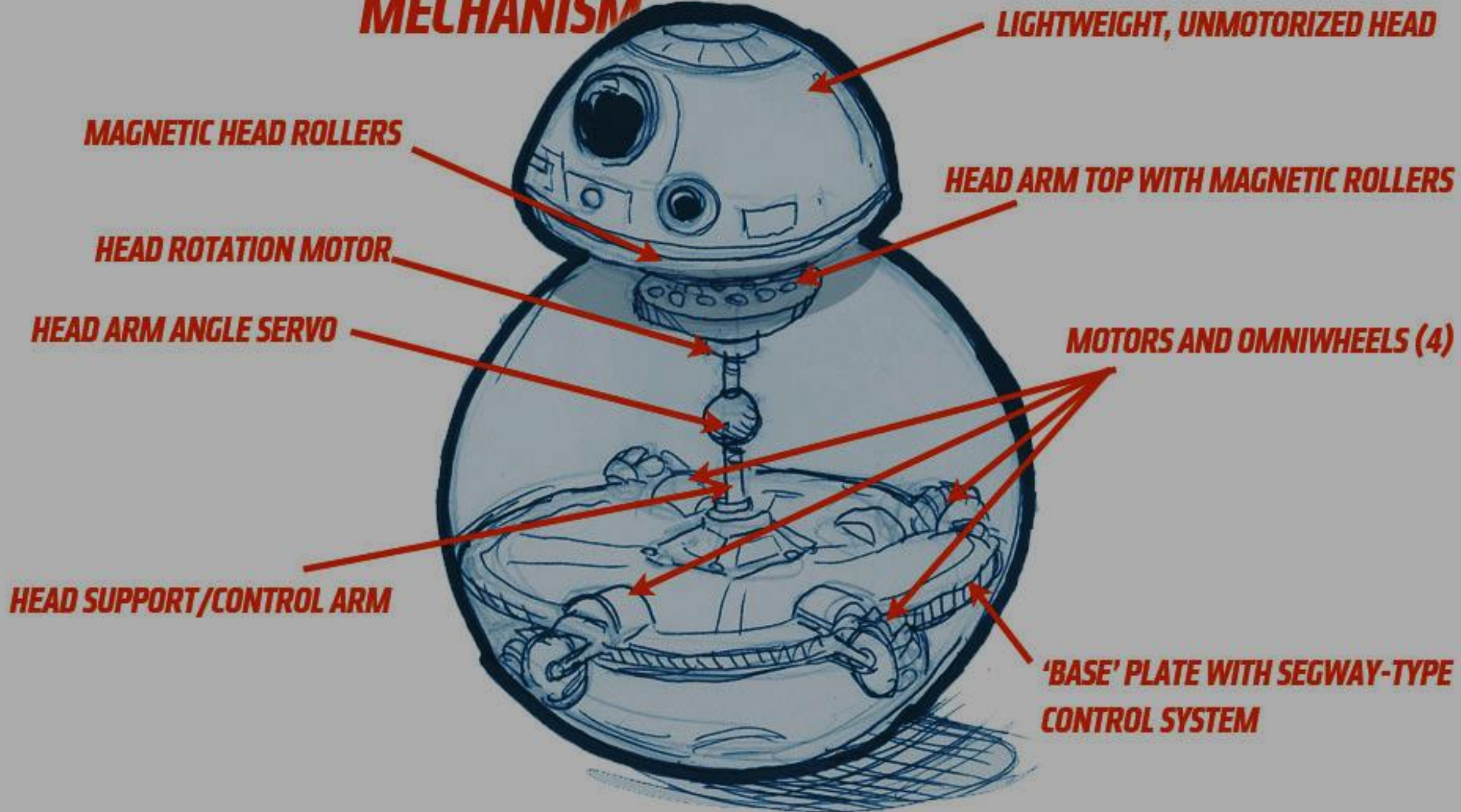
PRODUCT DEVELOPMENT CANVAS

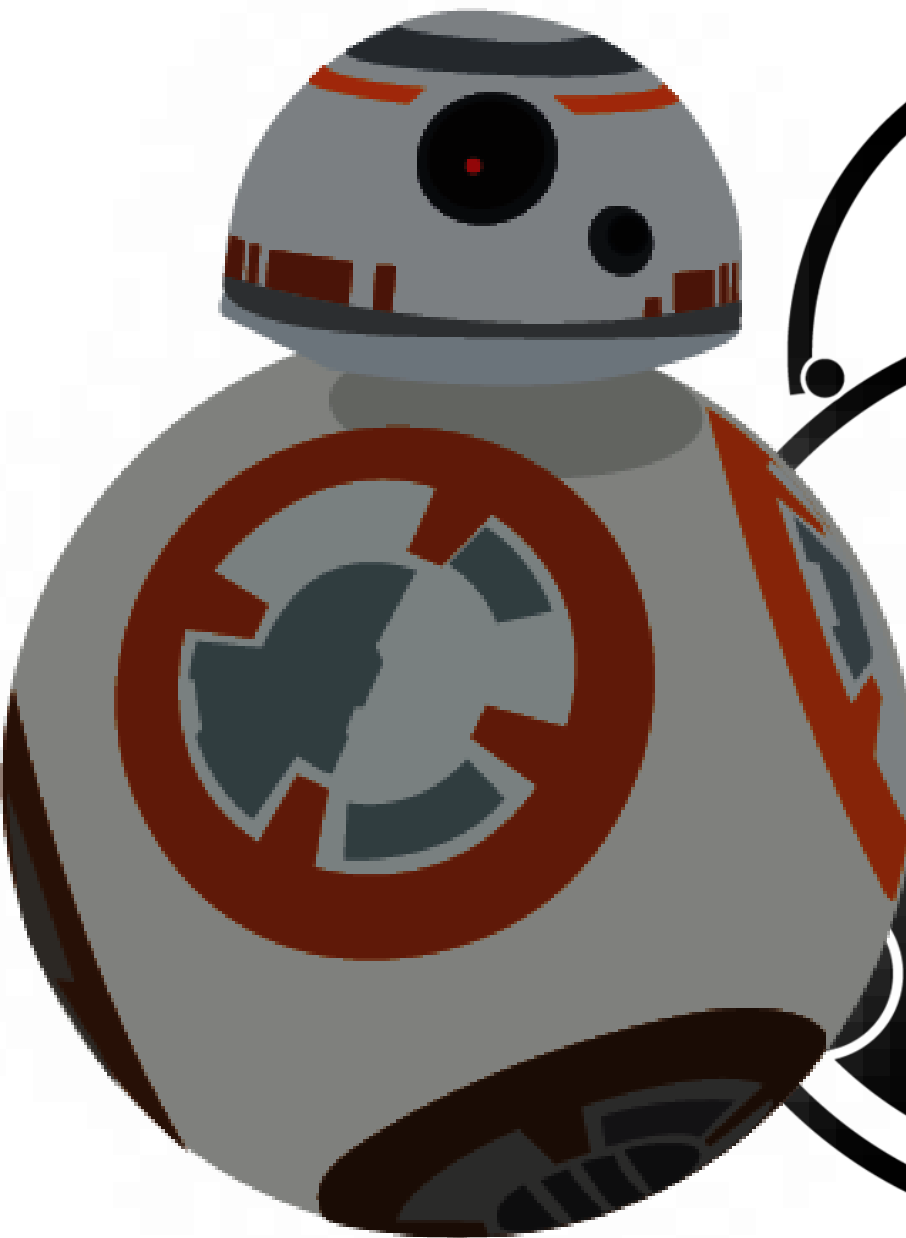
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<p> PURPOSE</p> <p>Metal detector</p> <p>Archeology</p> <p>Temperature sensor</p> <p>Visual Camera</p>	<p> PRODUCT EXPERIANCE</p> <p>Great Navigator</p> <p>Quick response</p> <p>Security system enabled</p>	<p> CUSTOMER REVALIDATION</p> <p>Client Validation</p> <p>App Validation</p> <p>System secured</p> <p>OTP Validation</p>
<p> PEOPLE</p> <p>Scientist</p> <p>pilots</p> <p>Cinematographers</p> <p>Tourists</p>	<p> PRODUCT FUNCTION</p> <p>Controlled by phone</p> <p>All time companion</p> <p>Great Navigator</p>	<p> REJECT/REDESIGN</p> <p>User interface</p> <p>Complex Circuits</p>
<p> PRODUCT FEATURE</p> <p>Omni directive movement</p> <p>Metal detecting sys.</p>	<p> COMPONENTS</p> <p>Sphero Application</p> <p>Camera</p>	

MECHANISM





Lightweight Shell "Head"

Simple Magnet

Ball Bearings

Simple Magnet

Lightweight Structure Holding Magnet Up

Axel to Rotate Magnets/Head

Heavy Robot (no balancing mechanics needed)

Omni-directional Wheels

Hamster Ball Body



THANK

YOU