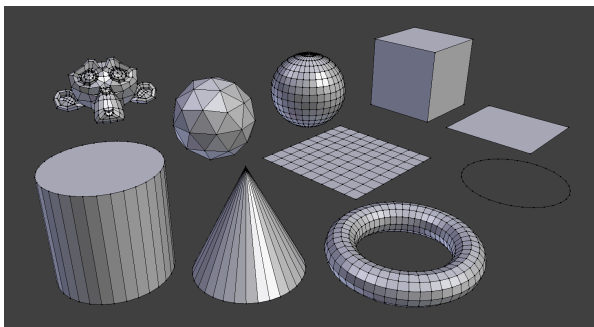**Obj**

1. To give students an exposure to advanced technologies that are needed to get future ready. Technologies that are going to be used in the future as regular technologies.

   a. Augmented reality (AR)

   b. Virtual reality (VR)

   c. Artificial intelligence (AI)

2. To give the students, a hands-on experience of building augmented reality applications

3. To teach a student how to configure a machine and make it learn

4. To improve the coding skills of the students

5. To enhance the strategic thinking of the student

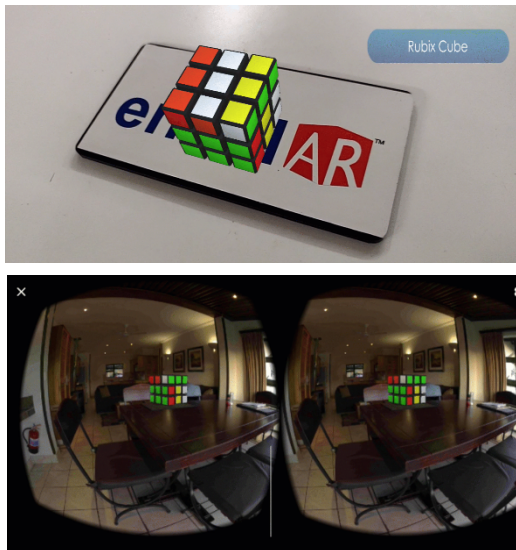6. To enhance the problem-solving skills of the student

Contents of the Advanced Technologies Lab

Lab Cost: Rs. 124,192. (all inclusive)

- **All software updates will be free of cost**

- **Tech support to be provided free of cost in case of bugs and updates**

Augmented reality and virtual reality			
Item	Purpose	Specification	Quantity
3d Modeling software	3d modeling software that can teach how to create 3d models. 3d modeling is one of the important skills needed for children to build AR and VR applications	- Any 3d modeling software where students can create 3d models and export them in the following file formats - Obj - FBX - There are free software available online (paint 3D or blender)	30

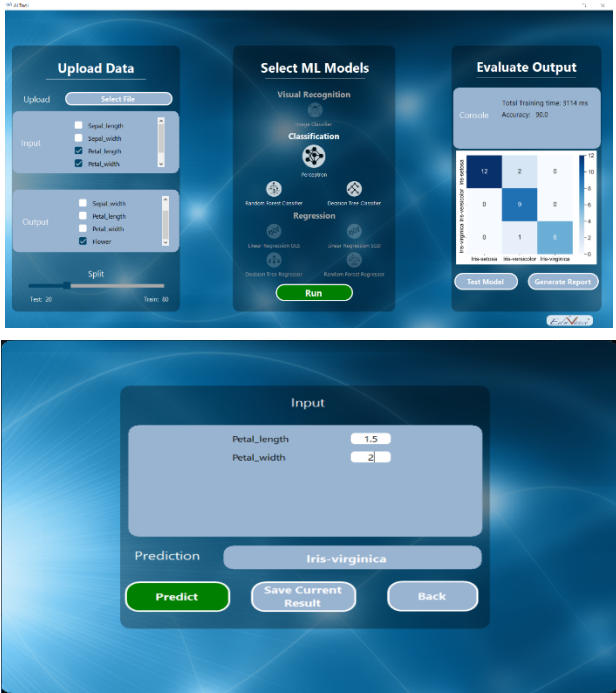| AR and VR app development software	Software needed for students to develop and experience AR and VR applications	- Platform that can help a student develop AR and VR applications - Custom trigger image - Static VR - Dynamic VR -Hologram app development -Software platform must have Block coding capability for students to learn coding basics Example: EnablAR	30
Hard VR headset	To deploy and view the virtual reality applications built by the student	VR headset where students can - Develop the app and install it in the mobile phone - Insert the mobile phone into the headset	10
Bluetooth remote	For students to control the VR applications built	Bluetooth remote that has the following functionality - 360 degrees joystick - 2 pairing modes - 4 mode buttons - 2 configurable joysticks	20

DIY Hologram kit	For students to understand and build holograms	- Pyramid based hologram - Base stilt structure - Side slides for reflection prevention	10
Artificial Intelligence			
AI prototyping software	For students to learn and implement experiments in artificial intelligence	- Desktop software with user interface that can: - Teach students how to identify object based on data inputs - Teach students how to predict data - Teach students how to train a machine to recognize images - Software should be capable of displaying the machine's learning accuracy - Software should be capable of testing the machine's learning - Student must be able to change the method by which a machine will learn	30

AI Voice controlled and Hardware robot	- Voice controlled AI applications - Ultrasound and camera interface	- Interfacing hardware for AI - Camera interfacing - Alexa voice control interface - Robotic movement control using AI	2

Annexure 2: Cost break up of lab.

Components of Lab

Augmented reality and virtual reality					
Item	Purpose	Specification	Quantity	Cost Per Piece	Total Cost
3d Modeling software	3d modeling software that can teach how to create 3d models. 3d modeling is one of the important skills needed for children to build AR and VR applications	- Any 3d modeling software where students can create 3d models and export them in the following file formats - Obj - FBX - There are free software available online (paint 3D or blender)	10	0	0
AR and VR app development software	Software needed for students to develop AR and VR applications	- Platform that can help a student develop AR and VR applications - Custom trigger image - Static VR - Dynamic VR - Block coding capability Hologram app development Example: EnablAR	22	1136 (Market MRP = 2,499)	24,990

Hard VR headset	To deploy and view the virtual reality applications built by the student	VR headset where students can - Develop the app and install it in the mobile phone - Insert the mobile phone into the headset	10	999	9,990
Bluetooth remote	For students to control the VR applications built	Bluetooth remote that has the following functionality - 360 degrees joystick - 2 pairing modes - 4 mode buttons - 2 configurable joysticks	20	499	9,980
DIY Hologram kit	For students to understand and build holograms	- Pyramid based hologram - Base stilt structure - Side slides for reflection prevention	10	999	9,990
Artificial Intelligence					
AI prototyping software	For students to learn and implement experiments in artificial intelligence	- Desktop software with user interface that can: - Teach students how to identify object based on data inputs - Teach students how to predict data - Teach students how to train a machine to recognize images - Software should be capable of displaying the machine's learning accuracy - Software should be capable of testing the machine's learning - Student must be able to change the method by which a machine will learn	22	1378 (Market MRP = 3,499)	30,300
AI Voice controlled and Hardware robot.	- Voice controlled AI applications - Ultrasound and camera interface	- Interfacing hardware for AI - Camera interfacing - Alexa voice control interface - Robotic movement control using AI	2	9,999 (Actual MRP = 16,999)	19,998
				Total	**1,05,248**
				18% GST	**18,945**
				Grand Total	**124,192**