



Virtually Assistive Oculus Uterque for Visually Impaired & Blind People.

TEAM ABHYUDAY

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Applicability

All the coding and technology part will be implemented on Raspberry-pi using python.

- **Virtual Assistant**

SANJAYA, our own developed virtual assistant, will be used to access the features of glasses on user command. It will use advanced Artificial Intelligence (AI), natural language processing and machine learning to understand the user commands and process them accordingly.

- **Facial recognition & Storage**

On the user's command, the virtual assistant will enable the face recognition feature, to store the facial data of a person standing in front of the user in the Raspberry Pi memory via a camera included into the smart glass itself. It will use Cascade Classifier technology from OpenCv .

- **Text Recognition**

The OpenCV and OCR Text Recognition technology will detect and convert the text into speech, based on the user's commands, using the virtual assistant.



Applicability

All the coding and technology part will be implemented on Raspberry-pi using python.

- **Object detection**

The user will be alerted through sound and beeping if he/she comes in contact with an object within the radius of 3 meters while walking on the road on user command.

Object detection will be implemented using tensor flow object API.

- **Colour detection**

Virtual Assistant will tell the user, based on the TCS 34725 Colour sensor, what colour an object is.

The technology will only be employed when the user requests it.



Scalability

❑ FUTURE SCOPE:

- ✓ We will extend the object detection technology to object recognition.
- ✓ We can extend the scope of usability to speechless people by adding touchpads on smart glass.
- ✓ We will make SANJAY (Virtual assistant) Multi-lingual.
- ❑ Our main focus is on visually impaired and blind people to navigate around their surroundings so they can benefit from a better quality of life and it can also be used by anyone for entertainment purposes



Commercial Viability

❑ Currently no such type of product is available in Indian market so it will stand as a mighty tool and will be prove to boon for visually impaired/blind persons.

❑ **Commercialization for our project will be on a large scale.**

✓ Once we develop this product, we will always try to upgrade it in every way.

✓ By adding more salient features like: bilingual virtual assistant making it more viable.

✓ We will offer our product to NGOs and societies working for blind people.

✓ As our product will not be much expensive one can own it by themselves only.

✓ We will offer our product to government and it can be used by government schools to offer blind students to help them in studies.

✓ Once our product will be fully developed, we will do promotions on social platforms.

❑ **Flow for commercialization:**

Social media marketing -> Advertising in newspaper -> Campaigns in school and colleges

-> Good dealers to accomplish the same.



Social Benefit

- ❑ One of the major 21 century's challenges is assisting visually impaired and blind people in navigating their surroundings so that they can have a higher quality of life.

Technologies are assisting blind people in leading a regular life similar to that of others but to a very small extent.

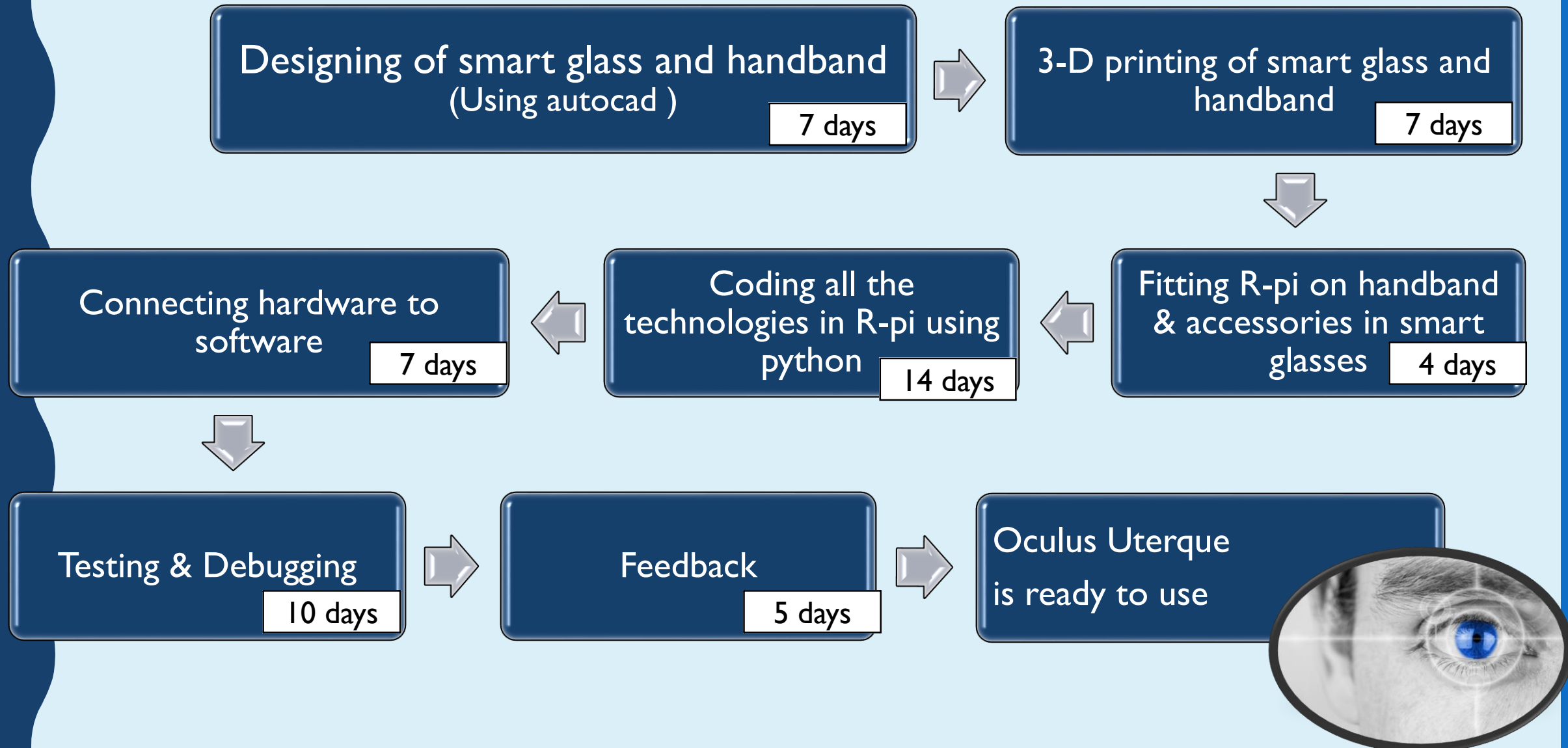
- ❑ The oculus uterque (smart glasses) can read printed information, reducing social isolation and empowering the blind to become more autonomous .

It can also store facial information of their near dears & other people and can recognize them.

It can recognize colors and inform user through power speech as all the features are then turned into speech and let visually impaired people hear. what is happening around them.



Gestation period:



Cost

❑ The cost of our product will be approx. Rs 6500-7500/-

❑ Factors influencing cost:

1. Raspberry pi
2. PLA cost(3-D printer)
3. Sensors (ultrasonic , TCS 34725 RGB color sensor with IR - Color Detection)
4. Camera, earphones and mic

