

CSE519 Human Computer Interaction
Assignment 1

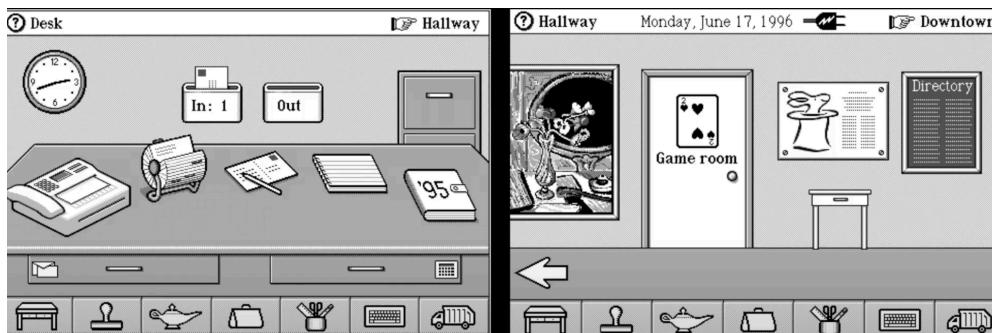
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Question 1

Chapter No.	Invention	HCI Goals
1	Vacuum tubes, Early computers	Get the data processed
2	Transistor, IC, Microprocessor, Personal Computer	Bring the physical world into a digital space
3	Computer mouse, GUI	Mimic the physical world and make it user-friendly
4	Smartphones, Internet	Enable people to access computing technology from anywhere
5 / 5.1	Sensors, Big Data	Bring the digital world into a physical space
6	AI, NLP	Get a machine to think and act like a human
7	Sensors, AI, Computer Vision	Replace the need for humans
8	AR; VR	Connect the physical world with the virtual world; Bring humans into a virtual world
9	Brain-computer interfaces	Augment humans

Points worth noticing:

- Early attempt at GUI, beginning of HCI - Skeuomorphic (design style that uses real-world elements to make digital interfaces more familiar and intuitive)



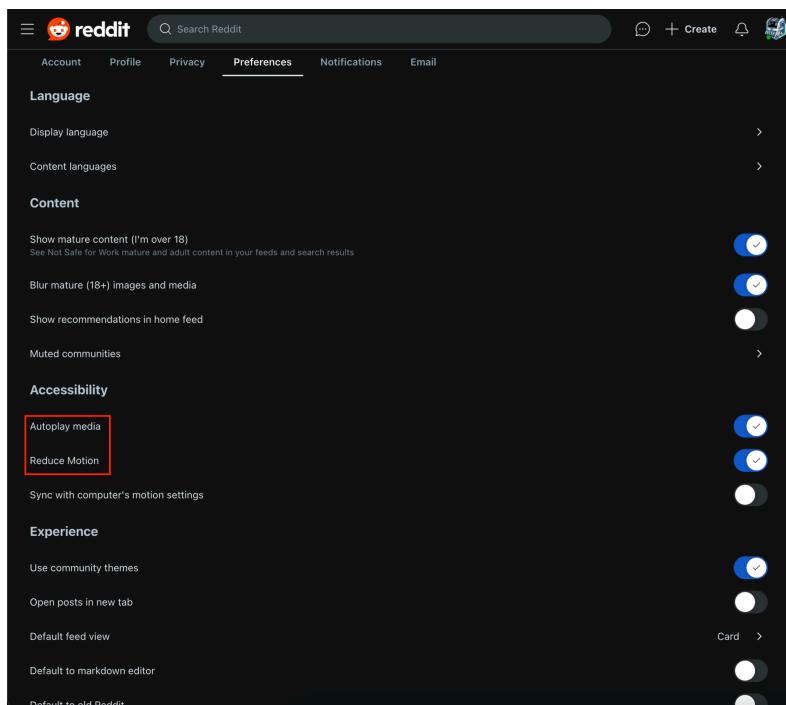
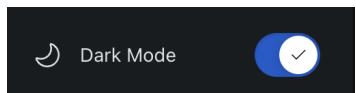
- Facebook and Google's algorithms. 10 likes from you to outperform predictions from work colleagues about preferences and personality, 70 to outperform friends, 150 to outperform family members, 300 to outperform spouses

Question 2

Website:

Name: [Reddit](#)

Photo:



Description:

Reddit allows you to change personal preferences like motion control, dark mode, autoplay media etc. catering to users with disabilities and impairments like visual impairment, sensory sensitivity and cognitive disabilities.

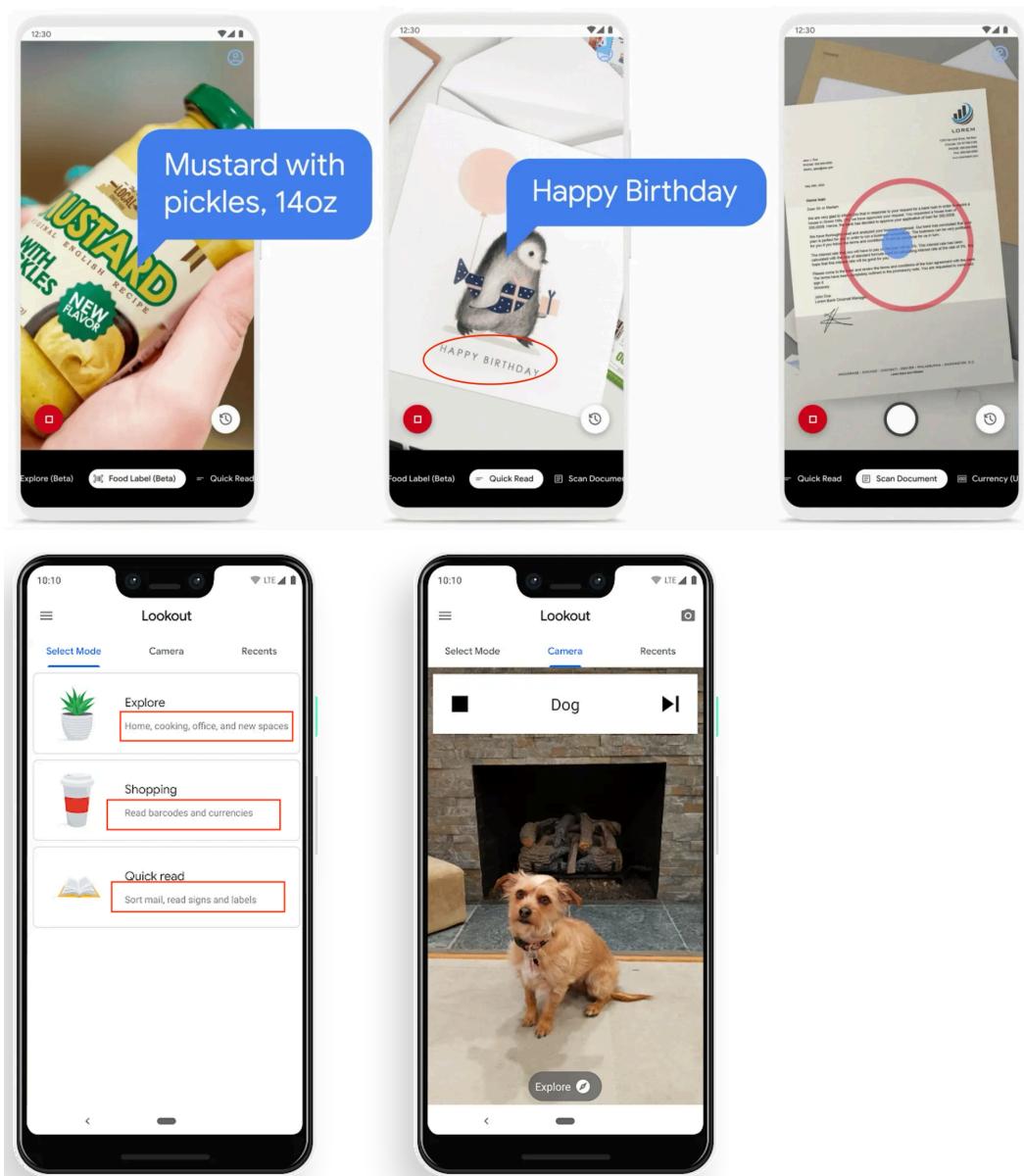
Reduce Motion reduces unnecessary animations which helps users with motion sickness or sensory overload.

Dark mode reduces eye strain, which helps users with light sensitivity and migraines.

App:

Name: [Google Lookout](#)

Photo:



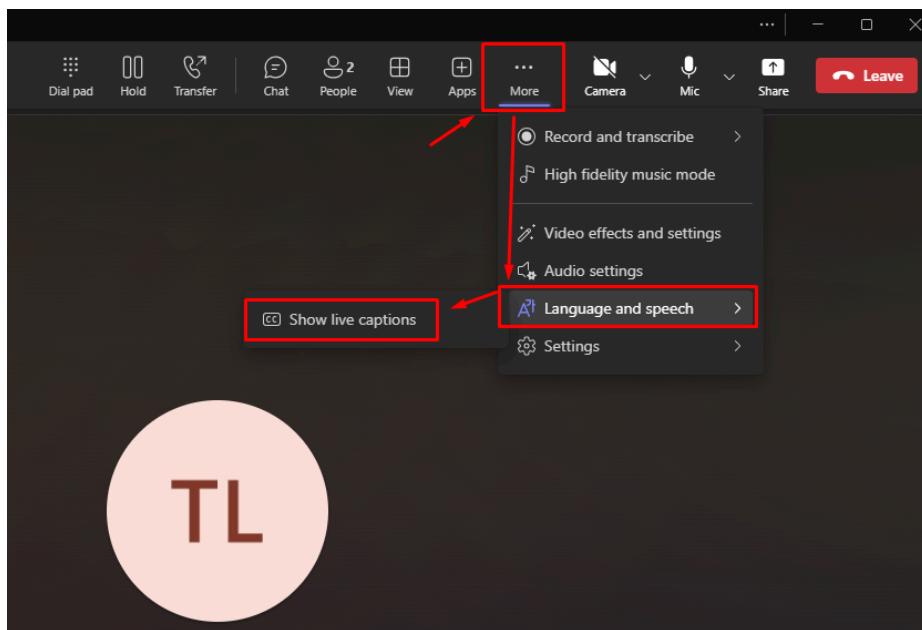
Description:

Google lookout improves accessibility for users that are visually impaired by using AI to read text, identify objects, scan QR codes and describe surroundings in real-time. It has three different modes: Explore (for recognising objects in surroundings and places), Shopping (for reading product labels and prices) and Quick Read (for scanning short text like signs etc).

The app can also work without an active internet connection.

Software:

Name: [Microsoft Teams](#)



Description:

Microsoft Teams offers a live captions feature that helps users with hearing disabilities by automatically generating real-time captions during meetings and calls. This helps users follow conversations with accuracy without relying only on audio. It also allows smoother communication in virtual meetings, webinars and classroom discussions.

Question 3

Age range	Name of the stage	Description of this stage
0-2	Sensori-Motor stage	Development of five senses through experiences and movement. We start with simple reflexes and move up to habits and doing things intentionally. People remain egocentric in this stage.
2-7	Pre-operational stage	People learn to speak and understand that words, images and gestures are symbols for something else. There is increased curiosity and we ask more questions - birth of primitive reasoning. We are still egocentric in this stage
7-12	Concrete-operational stage	People begin to discover logic and inductive reasoning, helping them draw conclusions and make generalisations. The brain learns to rearrange thoughts to classify and build concrete operational mental structures. We start applying these in our conversations and activities. We also learn to put ourselves in others' shoes (less egocentric thinking)
12 above	Formal operational stage	We develop the ability to think more rationally about abstract concepts and hypothetical events. We form a deeper understanding of our own identity and morality. We also develop the ability to perform deductive reasoning - we can compare two statements and reach a logical generalisation

Question 4

(4.1) Why “Search Feature Page” designed by adults was not the appropriate design for children?

The search page designed by adults was based on adult search patterns like searching by title or author, this is contrary to how children think. The design was very superficial in understanding children’s needs and thus just incorporated colours and cartoon mascots that were not efficiently solving the purpose.

(4.2) Mention any two points how the “Search Feature Page” designed after working with children was different.

- **Visual Search Options:** Children could now search books using visual cues like character type, book cover colour and length.
- **Categorization of Books:** The books were also categorized by type - picture books and chapter books. This is unheard of for adult books.

(4.3) What are three “Take Away” points of the speaker?

- Users (kids, elders, experts etc.) may have different ways of conceptualizing problems, especially when they are different from the designer.
- A good designer works on understanding user needs, free from their own assumptions.
- Designing with users, rather than for them, leads to more positive and effective outcomes.

(4.4) What is your personal learning regarding understanding the user and involving the user for HCI design?

Understanding users is of the utmost importance, it helps designers make useful and meaningful interfaces rather than just having superficial aesthetically pleasing designs.

(4.5) Which two feedback would you give if the design team of AURIS approaches you and asks for your feedback on the design of the “Home Page” of the AURIS?

- According to me, the AURIS home page is too cluttered with shortcuts to pages we don’t require, for example: Winter 2023 course registration. I would suggest making it simpler to remove redundancy.

- Similar links can be grouped together as a collapsable link, this will make sure the user is not overwhelmed with options. For example, performance could have student reports whereas course selection could have EOI, course registration and directory.

Question 5

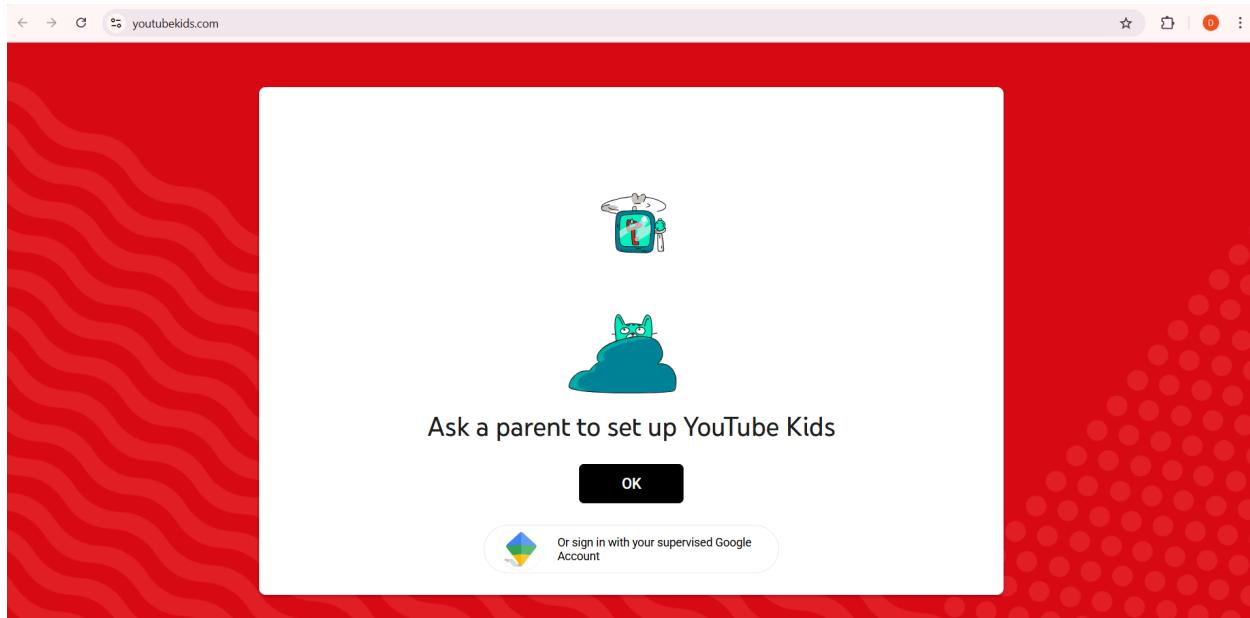
Website

Design principle: Design for children aspect of universal usability

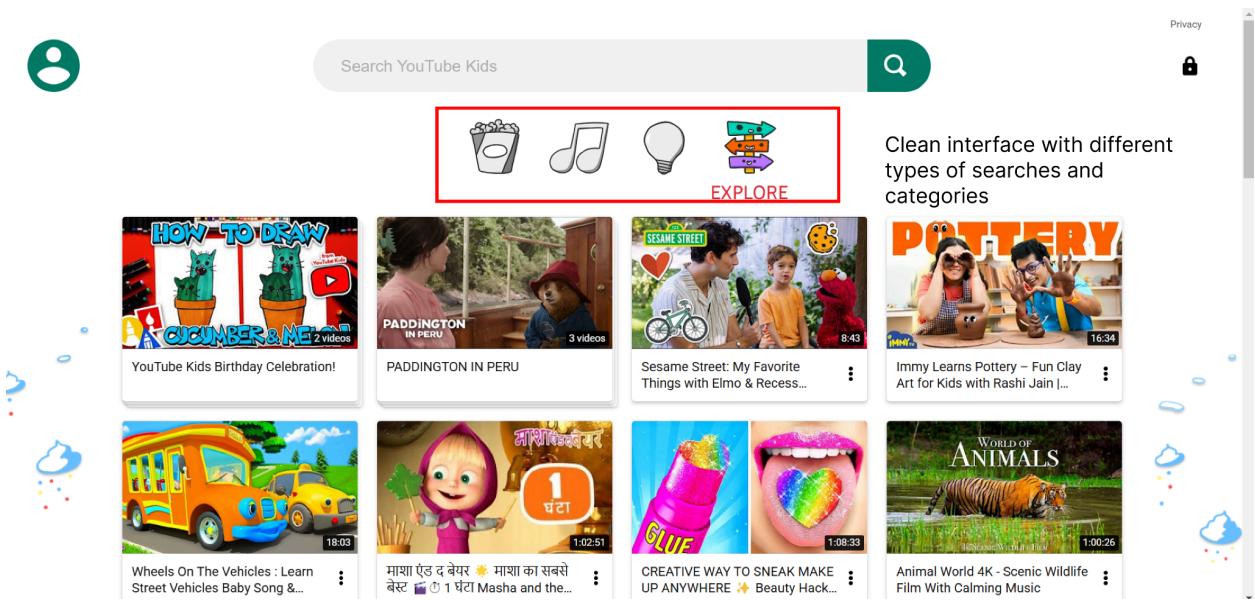
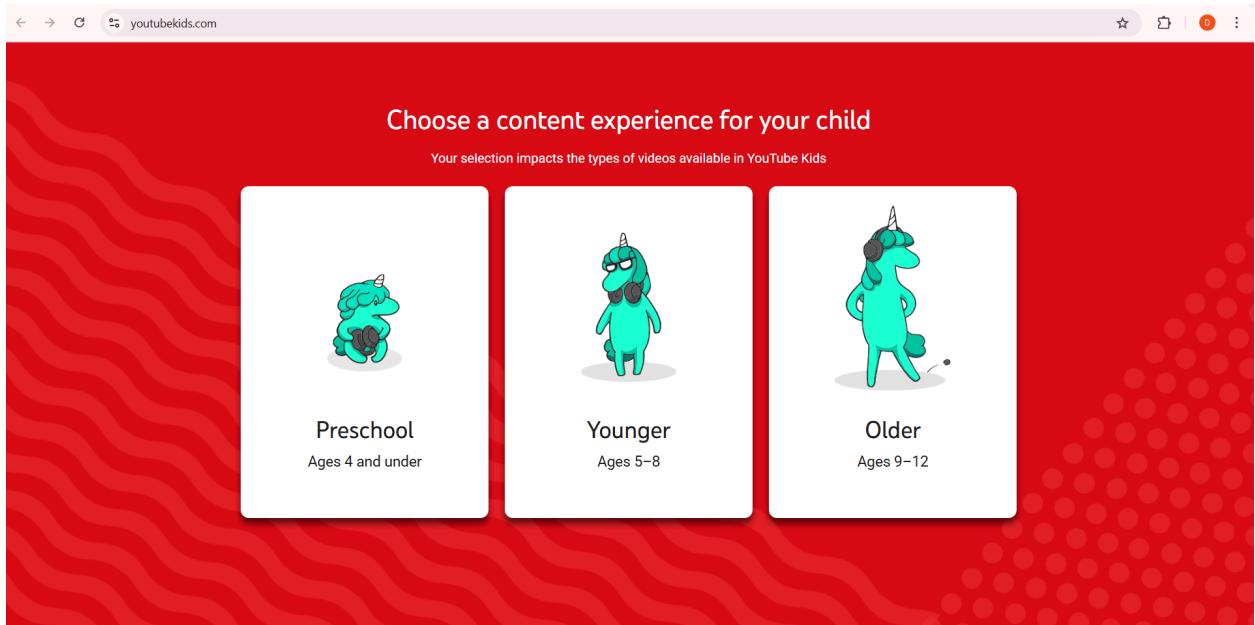
Name: [YouTube Kids](#)

Photo:

Ensures safety for children by making sure only parents can create accounts.



Varied content experiences depending on the age group. This takes into account different stages of cognitive development from Piaget's theory



Description:

Concept of question 3:

YouTube kids offers the option to customize the videos based on the age group of children, this takes Piaget's cognitive development theory into account. Videos for preschoolers are mostly very visually entertaining but videos for older age groups are geared towards learning.

Concept of question 4:

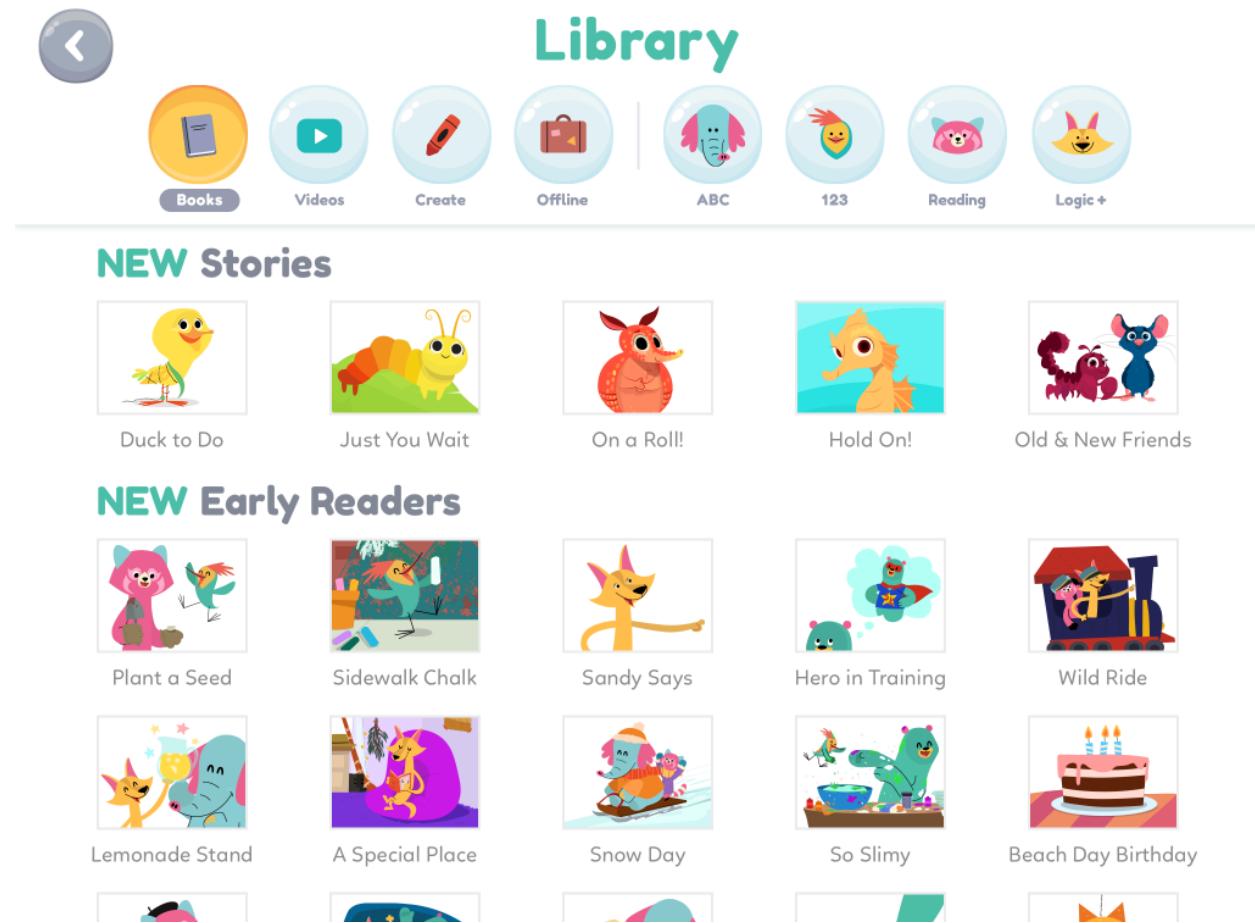
The home page has very unique categories enlisted with big bold icons like shows, music, learning and exploration. This is very different from normal YouTube's interface. They have also made the design very simple and easy to navigate.

App

Name: Khan Academy Kids

Photo:

Vast menu with many options to engage kids.





Description:

It embraces universal usability by ensuring diversity in characters, stories, and learning materials, making children from different backgrounds feel represented. It supports multiple learning styles with interactive visuals, voice guidance, and adaptive difficulty. The touch-friendly UI, speech support, and offline access make it inclusive for children with disabilities and low-income families. It is also completely free with no ads, this ensures equal access to quality education for all children.

Concept of question 3:

It is a learning app based on several cognitive developmental theories, including Piaget's theory.

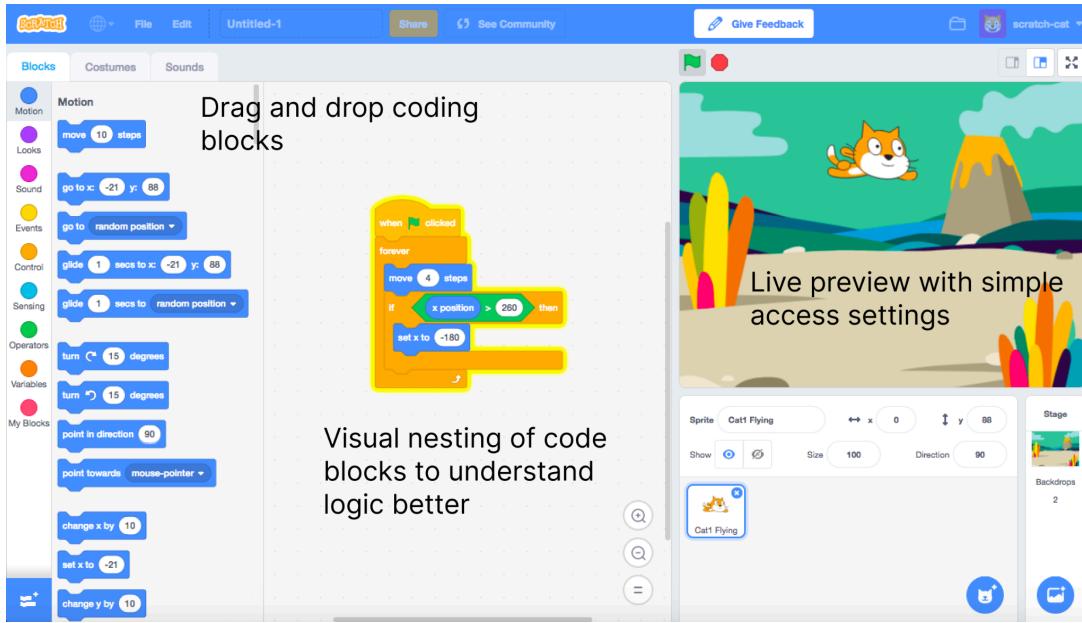
Concept of question 4:

The interface tries incorporating fun characters and stories but in my opinion it is too cluttered. They can simplify the interface and just show what the child needs while having the story more pictorial and less text heavy.

Software

Name: Scratch

Photo:



Description:

Having been a user of scratch when I was 12 years old, it was truly a simple easy to learn interface. It has drag and drop colour coded blocks, large clickable elements and has a preview screen. The interactive sounds and cartoon-like characters make it very engaging. It serves its target audience very well by combining form and function perfectly.

Concept of question 3:

The software supports trial and error learning along with learning by doing, it also has a special Scratch Jr. version. It also has varying levels of difficulty and complexity users can add in their code, this aligns with Piaget.

Concept of question 4:

The software was designed for children to learn and this is reflected in the simplicity of its working. It is very unlike traditional coding platforms, this testament and personal experience makes me believe that learnings of user understanding have been applied very well here.