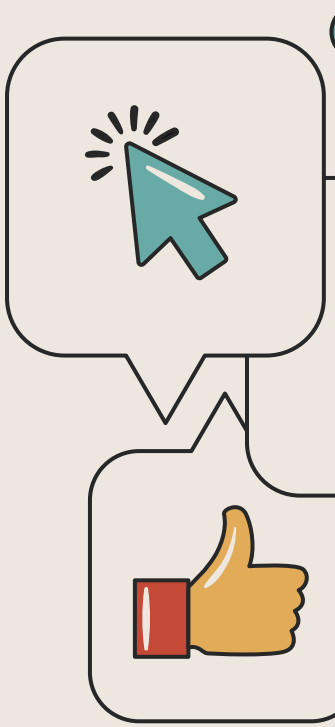


# Human Computer Interaction

**TERM LONG ASSIGNMENT**

DESIGN ALTERNATIVE
PRESENTATION


**Group: Benjamin Robinson (2000724), Errol Hunter (1905299) and Iyana Taylor (2209566)**
**Course: Human Computer Interaction (UN1) Monday 8 AM Tutorial with Ms. Nadine Maitland**

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# 01| Introduction.

In this presentation, part 3 - Design Alternative, each group member comes up with one task that is relevant to the design goal of the assignment based on what has been learned about the chosen problem in the previous 2 parts (Overview and Problem Ideation & Data Gathering, as well as, Data Analysis & Interpretation). Each member will speak on the conceptual and concrete designs of their task, i.e., an outline of what users may do with the product and the details of said product.

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# 02| Benjamin's Submission Items.

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# Item 1: Task Description.

From each student in the group the task should be described in one paragraph and in detail. The description of each task should convey a problem, say what is accomplished, with what goal, and how difficult the task is (from easy to hard).

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# Task Description.

**Task: Contextual Search with follow-up questions**

YouTube users waste significant time scrubbing through lengthy videos to find specific moments or topics they recall. This task solves inefficient content navigation by allowing users to search for topics across videos using natural language, then refine their search with follow-up questions while the AI maintains context from previous queries, eliminating the need to manually review entire videos

**Goal:** The goal is to enable users to quickly pinpoint exact timestamps where relevant content appears without manually reviewing entire videos, transforming YouTube into an intelligent content navigation system that understands evolving search intent.

**Difficult Level of the Task:** This is a hard task because it requires the AI to maintain conversational memory across multiple queries, understand semantic relationships between the initial search and subsequent refinements (e.g., recognizing that "compression faucets" is a specific type of "leaking faucet"), dynamically re-rank and filter results based on accumulated context, and present progressively narrowed timestamped segments that accurately reflect the user's evolving information needs all while managing potential ambiguity in natural language and ensuring the system doesn't lose or misinterpret the original search intent as the conversation develops.

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# Item 2.1: High-level Design Idea (Conceptual).

For each initial design from group members, the report should include:

the high-level idea of the design (one paragraph, including the name of the student who worked on this design)

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**Conceptual Model:** Contextual Search with Follow-up Questions

Users can search using natural, conversational queries like ”how to fix a leaking faucet”. The system understands the context and meaning behind their words, not just the exact keywords. It then provides relevant and refined results, guiding users through follow-up questions that help narrow or expand the search based on their intent.

**Core Concepts:**

- **Contextual understanding:** The system interprets the user’s query using natural language processing (NLP) to grasp meaning, tone, and intent rather than relying on exact text matches.
- **Progressive refinement:** Follow-up questions appear dynamically based on the initial query (e.g.” specifically compression faucets”). These help users refine results step by step without needing to retype or restate their search.
- **Integrated results display:** Search results are presented alongside the follow-up options, allowing users to explore and filter without breaking the flow of discovery.

**What users can do:**

- Type a natural-language query to describe what they’re looking for.
- Choose from contextual follow-up question to refine their search (e.g., “compression faucets”).
- Organize results by sorting or filtering
- Select timestamps to directly view specific/ relevant parts of a video without watching the entire thing

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This idea builds on the other members' designs by:

- Using Iyana's **Visual Search Concept to allow users to describe their search based on what they remembered visually eg. like a thumbnail.** .
- Using Errol's **Filtering and organizing concept to allow users to sort, filter and organize results based on preference and need**

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# Item 2.2: Design Sketches (Concrete).

For each initial design from group members, the report should include:

legible images of sketches on paper of the key aspects of the design *(not digital mock-ups)*. The sketches can be storyboards of scenarios.

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# Answer here.

**Layout**

- Dual search modes accessible via back button: Visual Mode and Contextual Search Mode
- Visual Mode: Grid/carousel toggle for image-based results with match confidence indicators
- Contextual Search: List-based results with video thumbnails and timestamp links
- Persistent navigation: Sort and Filter buttons positioned in top-right corner
- Bottom navigation: Refine Search and New Search options by selecting a radio button based on preference
- Search bar at top with mode indicator clearly visible

**Visual Style:**

- Color-coded modes: Orange for Visual Mode, Blue for Contextual Search
- Match confidence levels: Strong Match (orange), Partial Match (red) with visual badges
- Video thumbnails as X-wireframes with accompanying text descriptions
- Progress indicators during AI search processing
- Clear visual hierarchy: Header > Search controls > Results grid/list
- Red markers to highlight strong/partial matches in visual results

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# Answer here.

**Interaction Flow Example**

- User enters query "How to fix a leaking faucet" in Contextual Search
- AI processes search, displays loading state
- Results appear showing "Plumbing 101" video with timestamp links (3:12 compression faucet repair, 10:15 replacing compression washer)
- User clicks timestamp to jump directly to relevant video segment
- Video plays at selected point with scrubber showing current position
- User can switch to Visual Mode to see image-based results from same query
- Drag and drop functionality allows result reorganization
- Refine Search option enables follow-up questions building on current context

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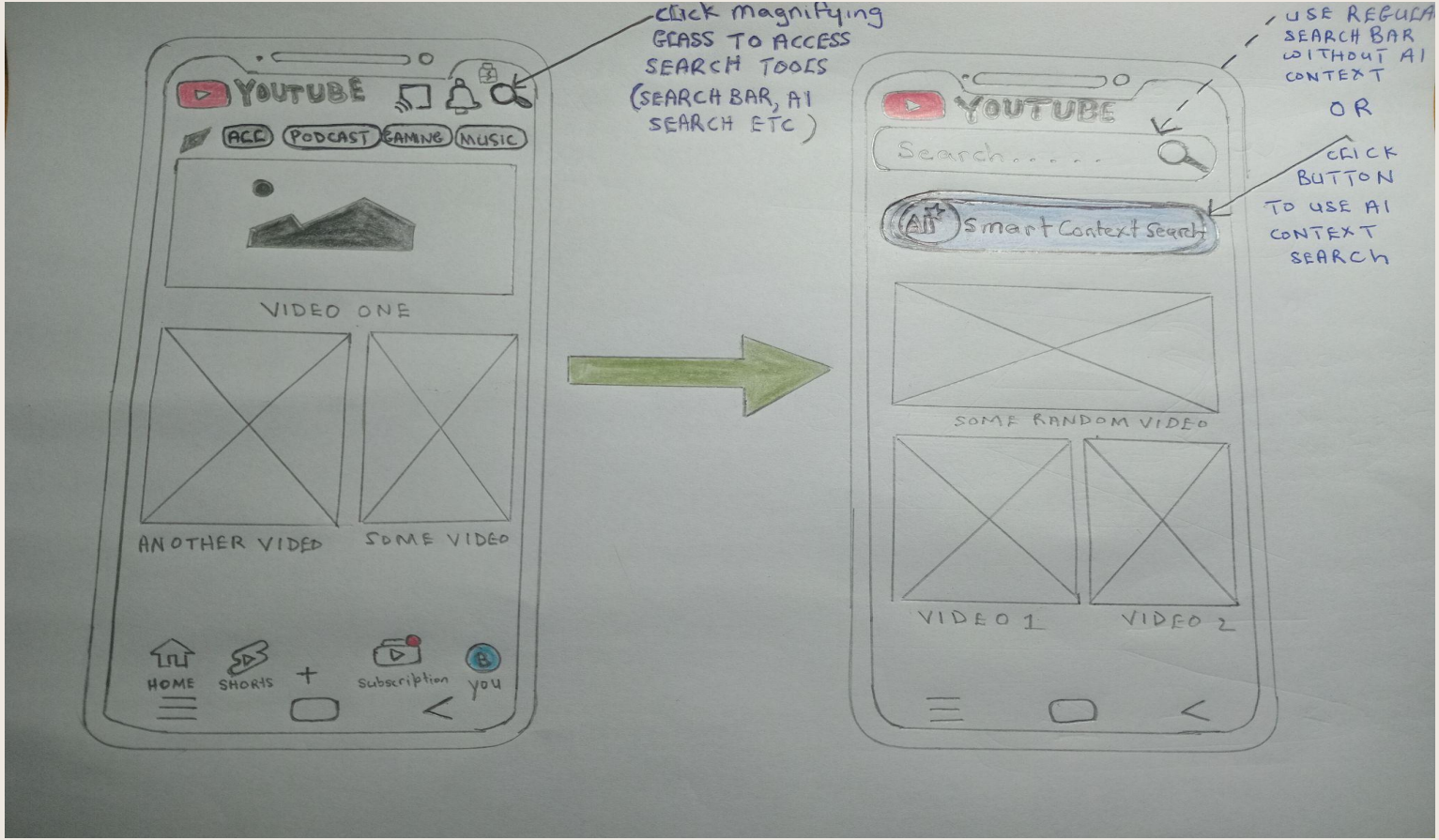


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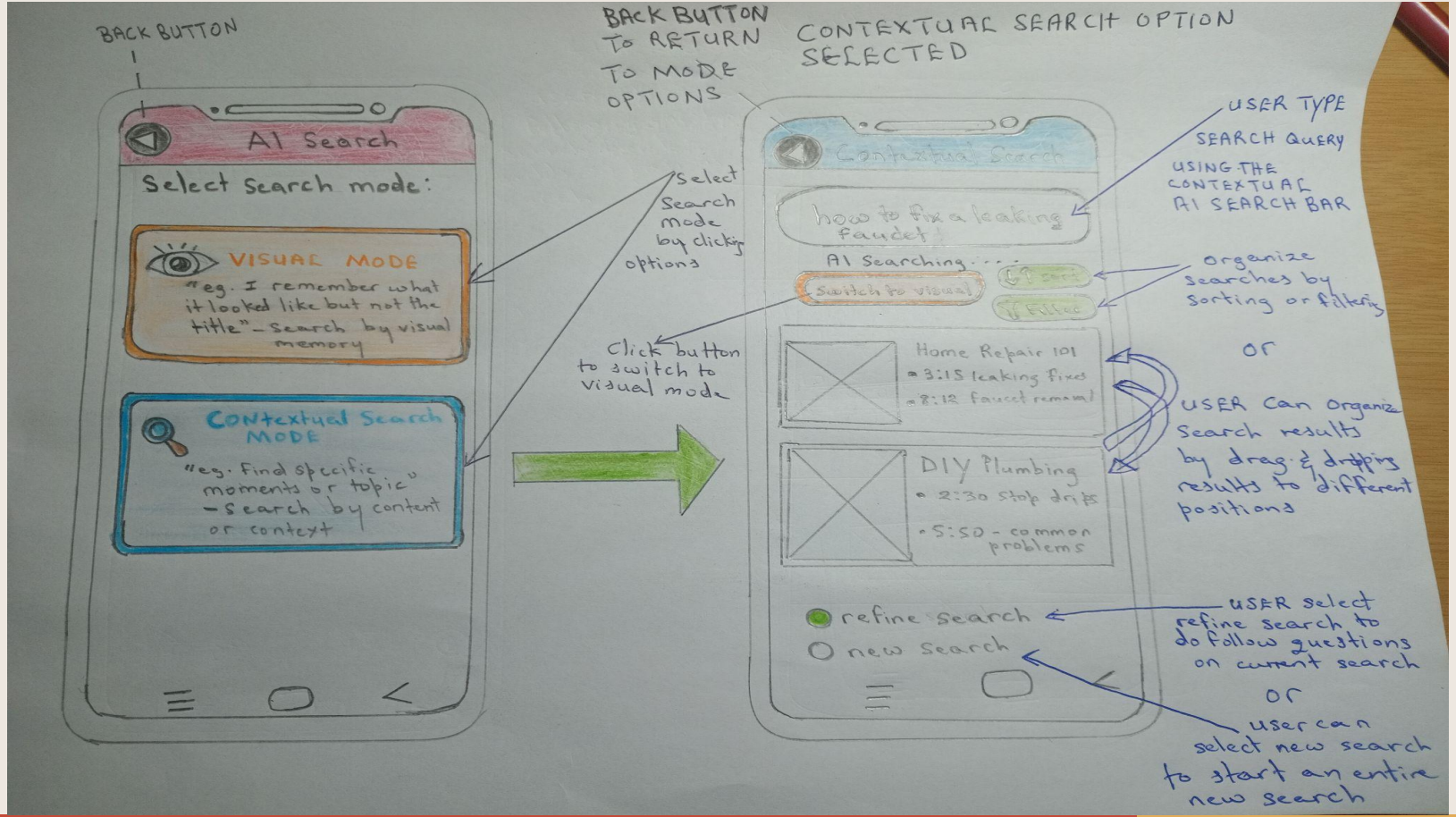


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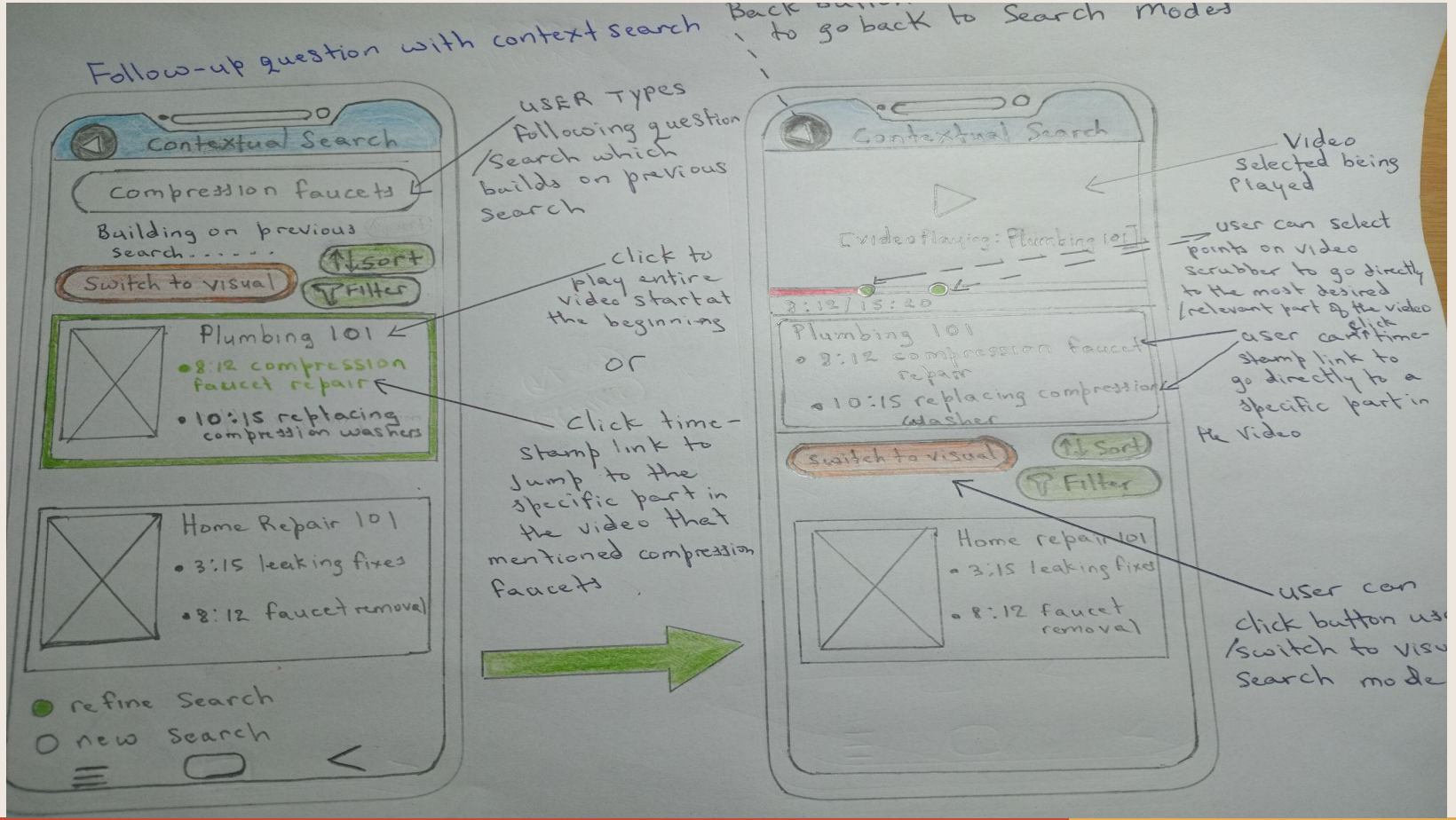


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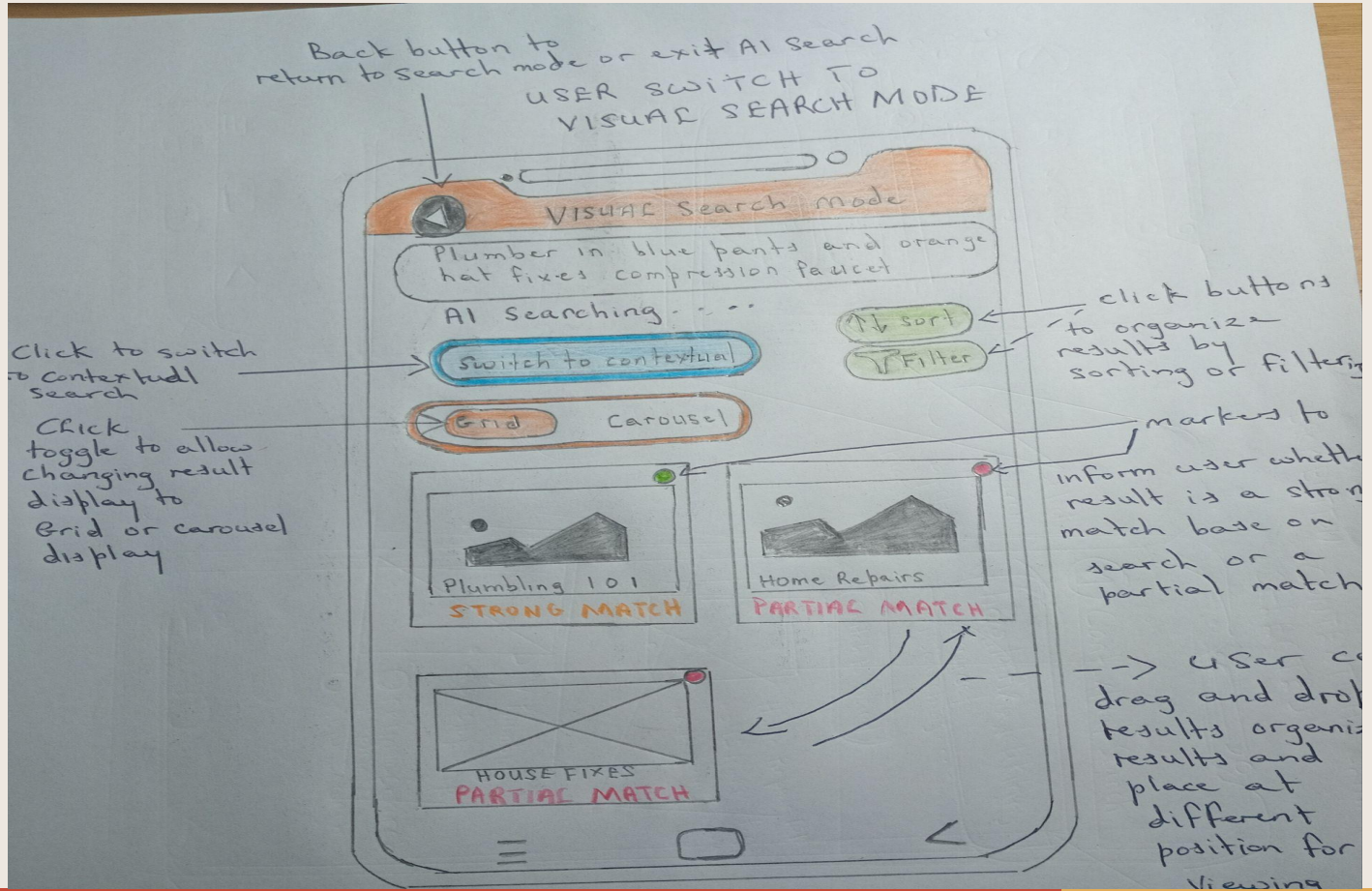


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# Item 2.3: How to complete each task.

For each initial design from group members, the report should include:

how to complete each of the three selected tasks with the design *(one or two sentences per task describing each of the steps)*

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# Answer here.

**1. Contextual Search with Follow-up Questions (Benjamin's Task)**

Users search video content and receive timestamped results, then use "Refine Search" to ask follow-up questions that build on previous context without re-entering information, with clickable timestamp links jumping directly to relevant video segments.

**2. Categorizing & Filtering Options (Errol's Task)**

Users organize results via Sort and Filter buttons in the top-right corner, with options to filter by categories and sort by parameters, plus drag-and-drop functionality in Visual Mode for manual result repositioning.

**3. Visual Preview Search Mode (Iyana's Task)**

Users search by visual memory using Grid or Carousel display, with AI showing match confidence levels ("Strong Match" in orange, "Partial Match" in red) and easy toggling between Visual and Contextual Search modes.

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# 03| Iyana's Submission Items.

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# Item 1: Task Description.

From each student in the group the task should be described in one paragraph and in detail. The description of each task should convey a problem, say what is accomplished, with what goal, and how difficult the task is (from easy to hard).

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# Task Description.

**Task: Visual Preview and Recall**

When users struggle to recall a video title but can recognize it visually, they need a way to browse results that emphasize thumbnails, short previews, and familiar cues.

This task allows users to ***visually skim AI-generated search results*** using thumbnail grids, short looping previews, or highlighted scenes that match their memory (the best match to their natural language query).

The goal is to help users quickly recognize the correct video without relying solely on titles or text. This task focuses on improving recognition-based search, reducing frustration, and supporting visual memory cues.

Difficulty level: ***Moderate***, as it involves both search output design and interaction flow consideration (previewing and selecting a result).

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# Item 2.1: High-level Design Idea (Conceptual).

For each initial design from group members, the report should include:

the high-level idea of the design (one paragraph, including the name of the student who worked on this design)

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# Answer here.

**Conceptual Model:**
Users describe what they remember in natural language (e.g., *"the tutorial where the guy fixed his PS5 with toothpaste"*). The system then provides a **visual-first result interface** where users can **recognize** rather than recall.
Core concepts:

- **Recognition over recall:** leveraging thumbnails, short scene previews, and creator names/ faces and video descriptions.
- **Semantic linking:** results are grouped by context/ filters (e.g., "tech repairs," "gaming moments").
- **User control:** users can toggle between text-based or visual-based browsing by clicking a preview or description icon.

What users can do:

- Type or speak a descriptive query.
- Select Follow-up questions to narrow their search.
- View grouped/ filtered visual suggestions.
- Hover/tap thumbnails for quick previews or video description.
- Identify and open the correct video.

This idea builds on the other members' designs:

- It uses Benjamin's **Contextual AI Search with Follow-up Questions**.
- It visually organizes those results i.e., Errol's **Filtering/Categorizing**.

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# Item 2.2: Design Sketches (Concrete).

For each initial design from group members, the report should include:

legible images of sketches on paper of the key aspects of the design *(not digital mock-ups)*. The sketches can be storyboards of scenarios.

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# Answer here.

**Layout:**

- A grid of **large thumbnails** (bigger than YouTube's standard).
- Each card shows: Thumbnail preview (eye icon); Video description (original posted by creator - Recognition over recall; burger icon); Channel name and caption.
- Filter ovals above natural language search bar, with a "+" to dd more filters

**Visual Style:**

- Background: light/dark adaptive (to match the user's YouTube's mode).
- Accent color: red or orange gradient (to align with YouTube branding but feel "enhanced").
- Subtle shadows and rounded cards for modernity.
- Micro-animations for responsiveness.
- Preview icons (a small eye icon, play button icon, 3-line burger icon for description) for clarity.

**Interaction Flow Example:**

1. User types: *"that fridge repair video with the guy fixing the cooling fan"*.
2. The system uses **Contextual AI Search with Follow-up Questions** (Benjamin's task) to generate semantic results.
3. **Filtering module** (Errol'st ask) lets them narrow results by "home," "repair," or "home repair."
4. Results are shown so the user sees thumbnails arranged in a cluster for the best matches based on their input and follow-up answers.
5. Clicking the eye icon shows 3-5 second preview loops or the burger icon to read description  so user recognizes the video visually.
6. Clicks play button to open video.

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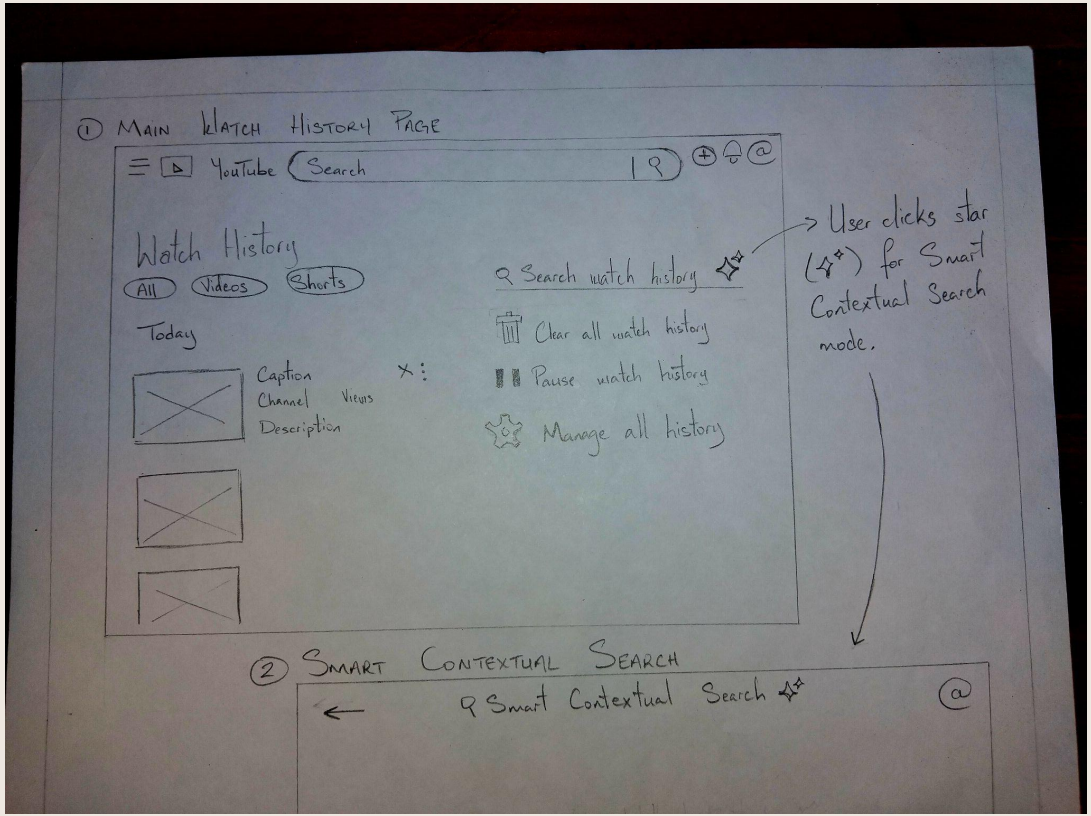


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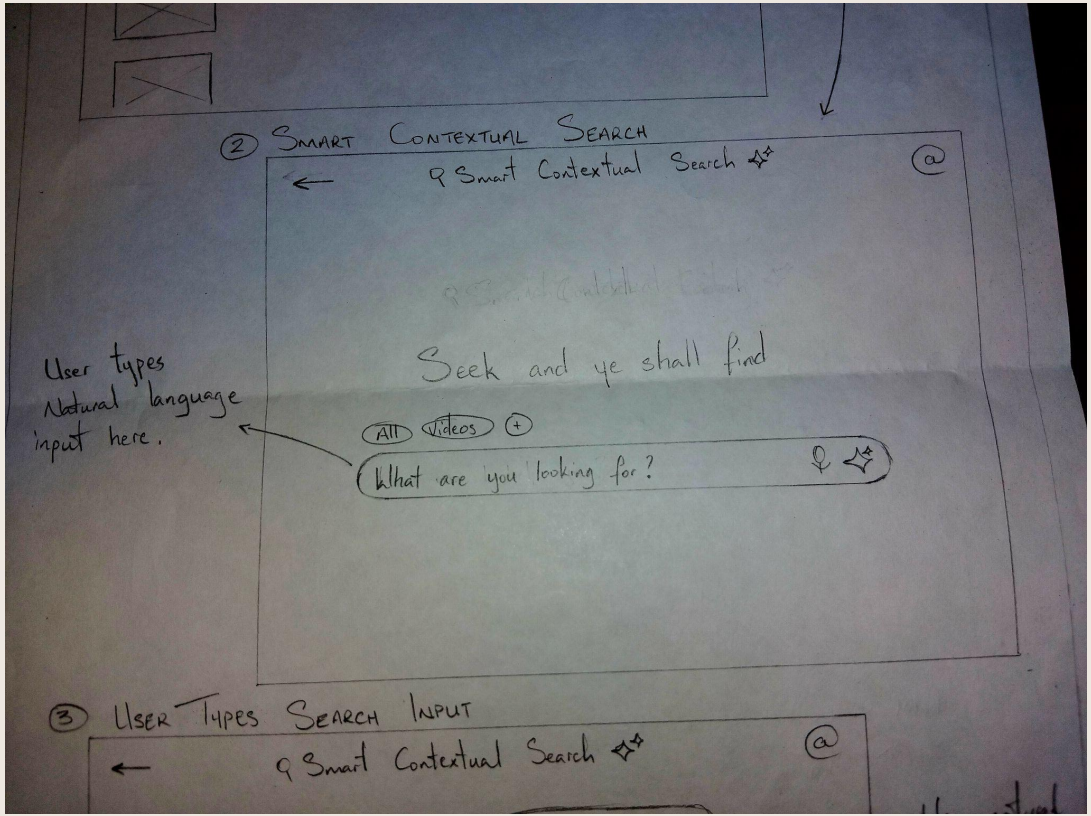


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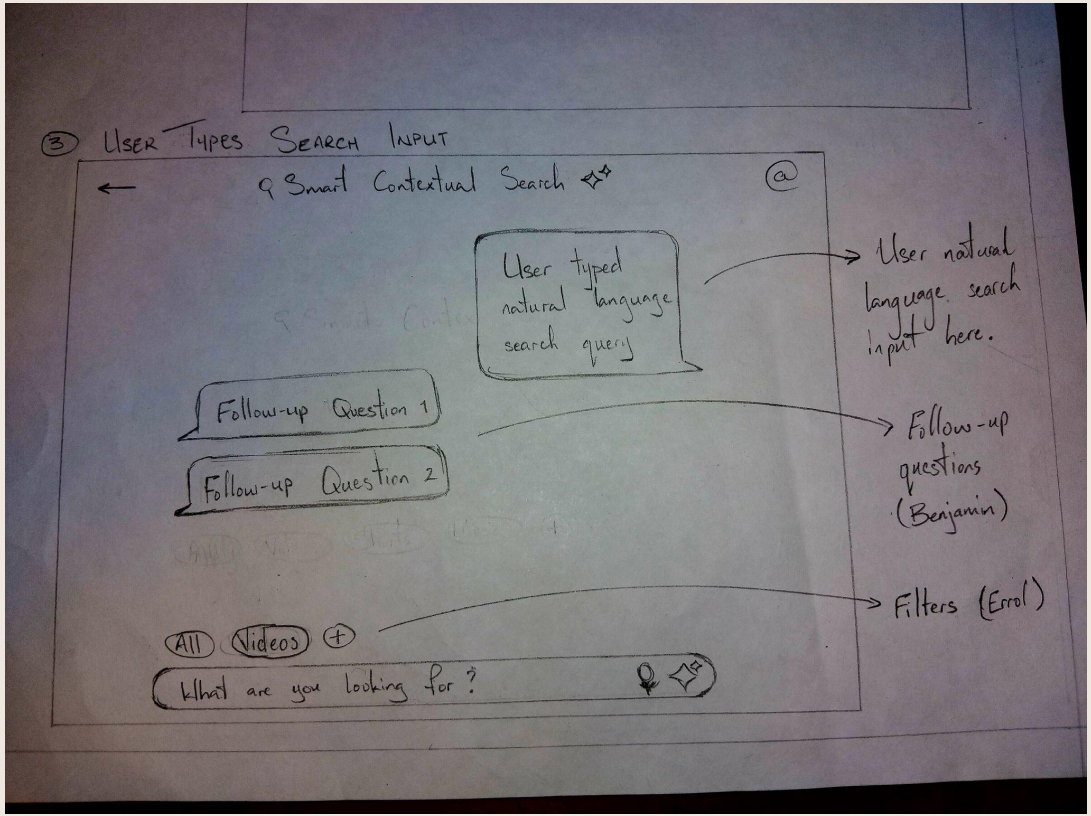


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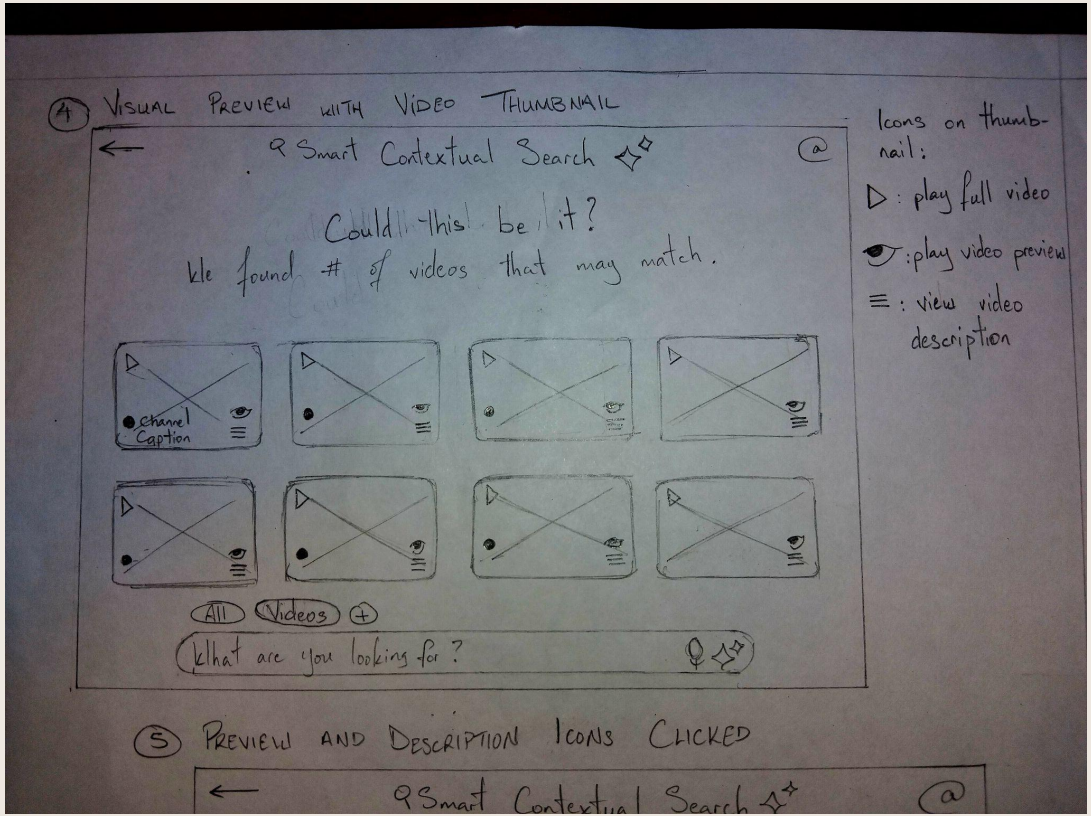


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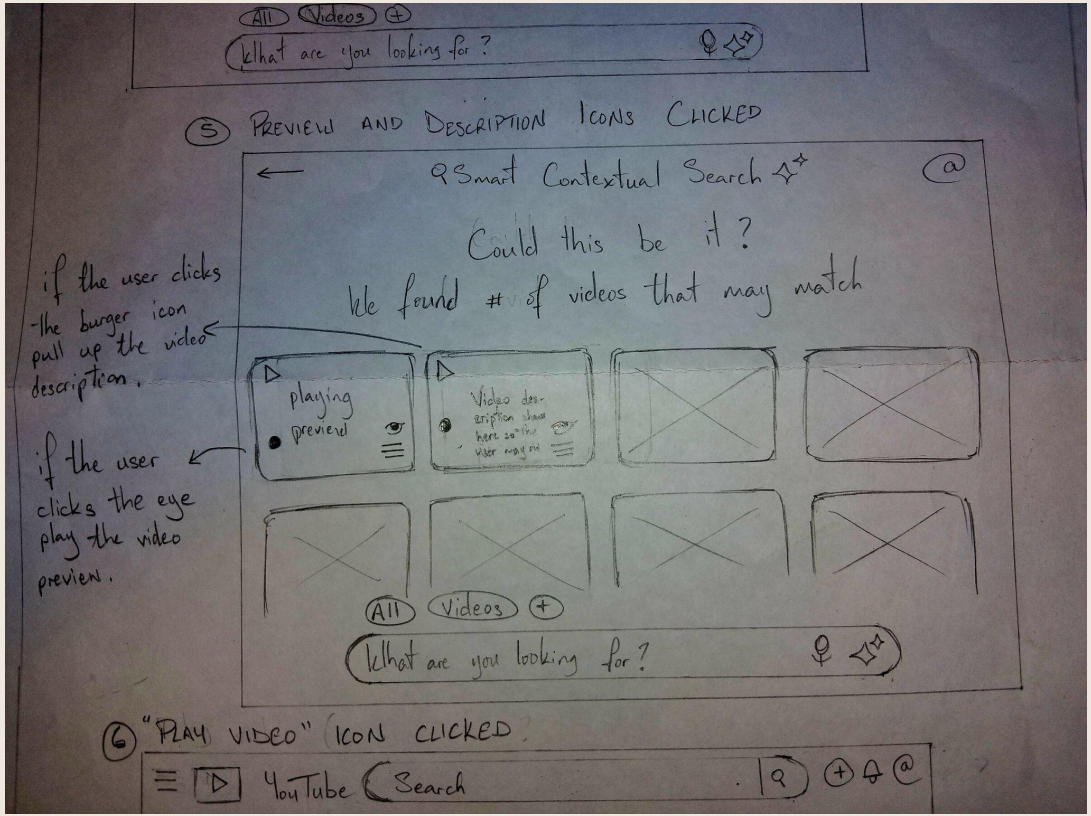


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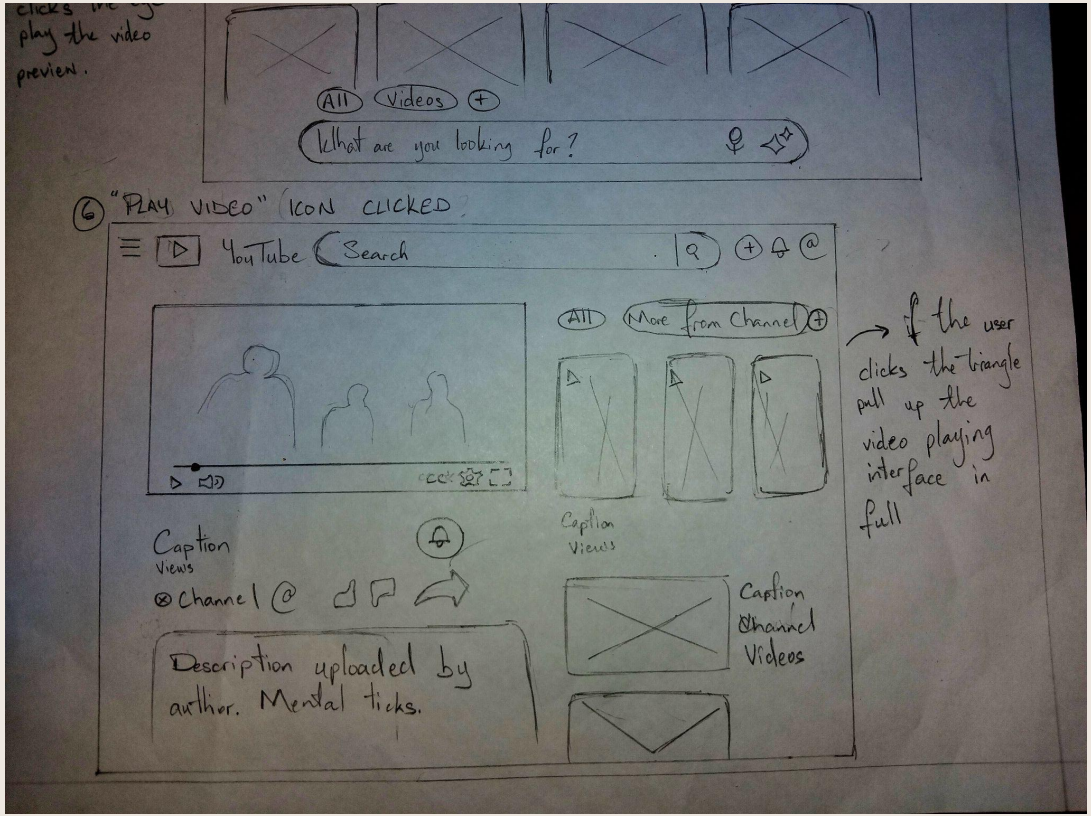


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# Item 2.3: How to complete each task.

For each initial design from group members, the report should include:

how to complete each of the three selected tasks with the design *(one or two sentences per task describing each of the steps)*

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# Answer here.

1. **Contextual Search with Follow-up Questions (Benjamin's Task)** – User types or says a descriptive natural language query; system asks follow-up questions to refine (e.g., "Was it a tutorial or a vlog?").

2. **Categorizing & Filtering Options (Errol's Task)** – User filters results by topic ("DIY repairs") or content type ("tutorials").

3. **Visual Preview & Recognition (Iyana's Task)** – User visually browses search results and interacts using the icons (play, preview eye and description burger) to instantly recognize the correct video.

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# 04| Errol's Submission Items.

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# Item 1: Task Description.

From each student in the group the task should be described in one paragraph and in detail. The description of each task should convey a problem, say what is accomplished, with what goal, and how difficult the task is (from easy to hard).

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# Task Description.

When users try to find old videos in their Youtube history,they often end up scrolling though pages of unrelated results. To make this process smoother, our smart filter would help narrow down the search and highlight the most relevant videos.

This feature uses AI to sort and filter the results by various details like video length, topic, upload date, channel name, creators facial or unique features and etc. It will also recommend filters automatically based on what the user types making the search feel easier and faster.

The main aim is to save the users time and reduce frustration by making it the process of finding old videos easier.

**Difficulty Level : Moderate**, combines AI driven organization with ebay to use filtering interface to improve speed and accuracy in search results.

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# Item 2.1: High-level Design Idea (Conceptual).

For each initial design from group members, the report should include:

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# Answer here.

High-Level Design Idea (Conceptual): This design adds a simple, AI powered filter for youtube search history page, accessible through a filter button the right side of the screen. When Clicked, a pop up window prompts the user to describe what they are looking for using natural language, such as “short gaming videos from last week”. The user’s request is then interpreted by an AI, which analyzes the query, cross reference it with video with data like length,channel, upload date and etc then instantly refreshes the page to present the most relevant results, making this process a fast and simple experience.

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# Item 2.2: Design Sketches (Concrete).

For each initial design from group members, the report should include:

legible images of sketches on paper of the key aspects of the design *(not digital mock-ups)*. The sketches can be storyboards of scenarios.

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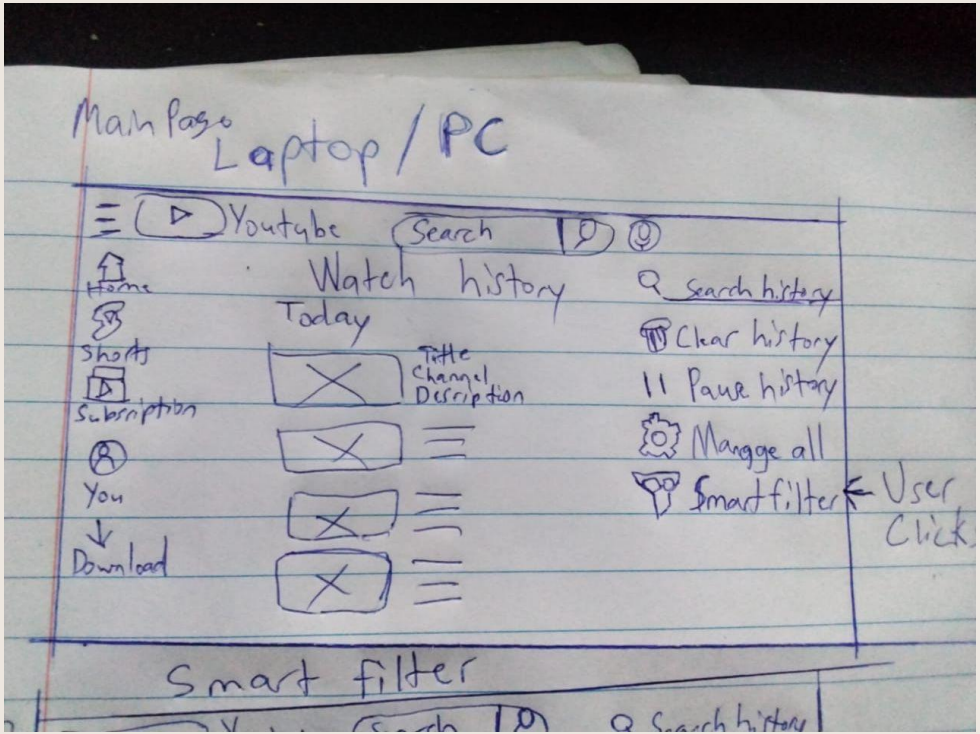


Main Page of the Youtube History

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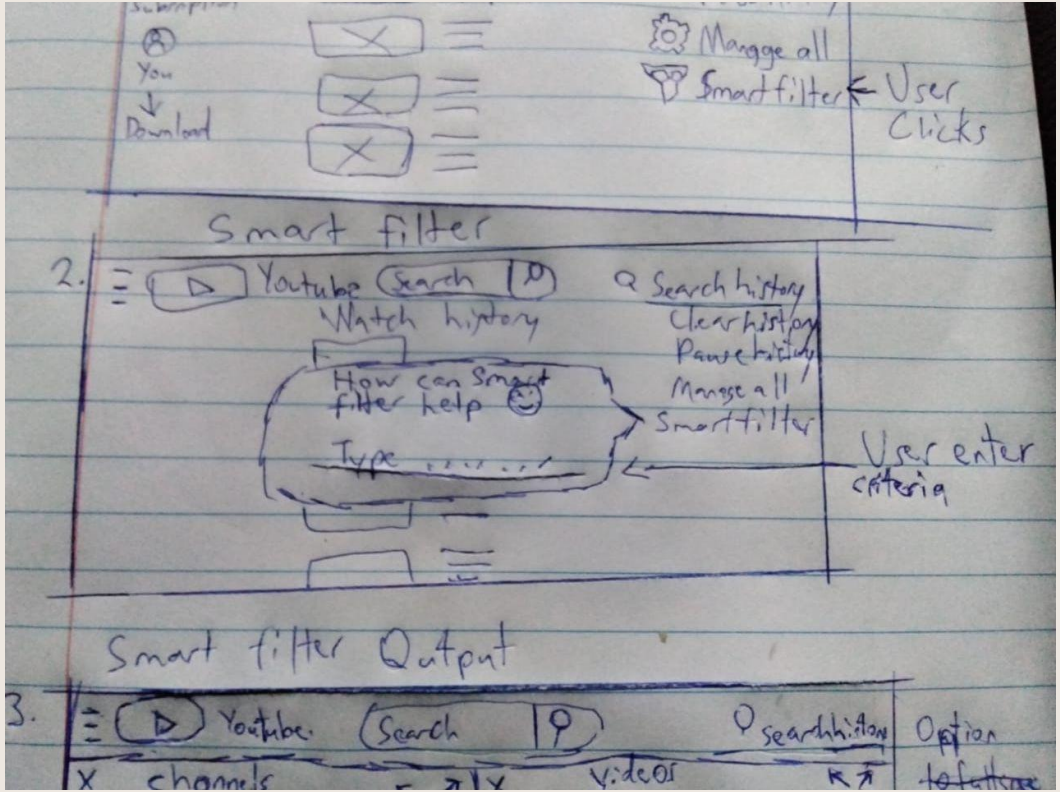


The prompt that comes after user selects smart filter asking for input.

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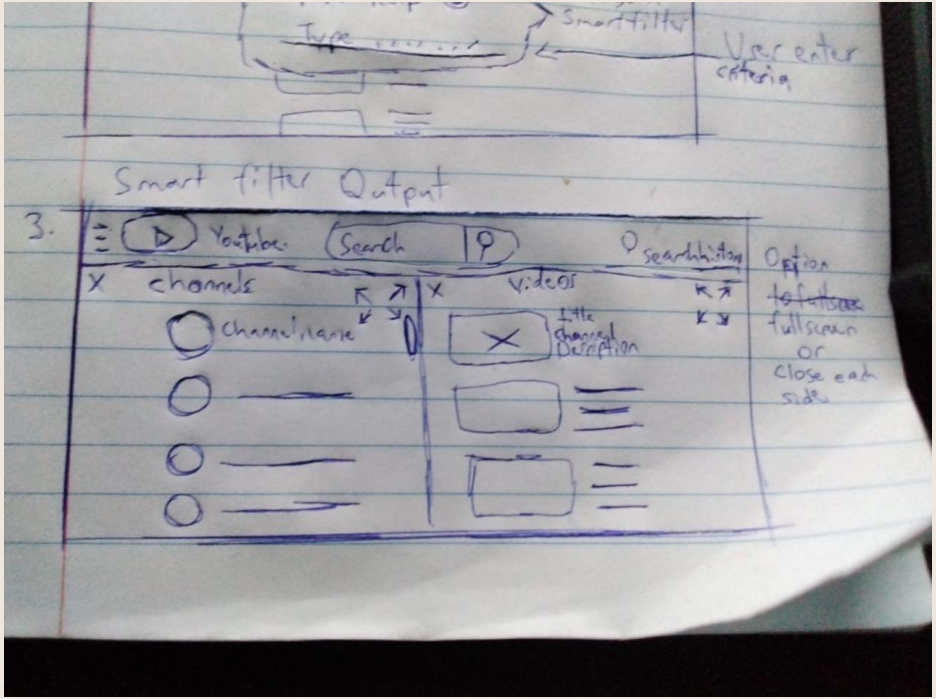


Output that comes after the AI does its analyzing. Left are the channels relating To the input and the right are the videos relating and this ai gives them based on the strict criterias entered. And both sides provide a close, fullscreen and scroll options for the user.

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# Item 2.3: How to complete each task.

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# Answer here.

**1.Benjamin's Task :** Contextual Search with Follow Up Question - User describe what they need and the AI ask

follow -up questions to pinpoint the exact video.

**2.Iyana's Task :** Visual Preview and Recognition - Users browse results and use interactive icons to preview videos or see more details instantly.

**3.Errol's Task:** User filters their history using predefined categories like channel, topic and content type and etc.

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# THANKS!

Do you have any questions for us?




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