Assignment M3: CS6750

Ajit Kumar Yadav
ayadav85@gatech.edu

Abstract*——**Towards the HCI Assignment M, I have selected one of my academic partner websites. The main aim of this website is to get students registered and offer them all the services required to successfully complete IAS/PCS professional exams (entry exams to get in administrative services at Country and State level). As discussed in the previous phase, we are looking to redesign the "study materials" section of the website (as shown in Figure-A&B***). In this phase, we will present the report of the brainstorming session and connect it with inventory data. Finally based on input from a brainstorming session, we will proceed with prototype of interface.

1 BRAINSTORMING PLAN

I have decided to approach brainstorming in three ways; ***a) brain writing,*** it is a written approach that you can use to encourage all individuals to generate and develop ideas. ***b)Round robin brainstorming,*** it is a way to get people to contribute ideas (verbally one by one) without being influenced by others. ***c) Group talk*** , to converge on all the gathered data and try to come to a decision or if we come across any new dimension.

It will involve 2 faculties (well-versed and regular users of the website), two of colleagues from software development, two of the student representatives, session controller (myself) and owner of the website.

brain writing will run for about 10-15 minutes in two sessions on two different days (it will space out the thinking process) followed by round robin brainstorming (15-30 minutes, with each member slot about 2 min with two rounds) and finally group talk(10-15 minutes). The main objective of discussion would be to study feasibility of new requirements and its effectiveness.

2 BRAINSTORMING EXECUTION

In the first stage of brainstorming, in my case the brainwriting, I supplied a few broad categories (based on problem space and user requirement)to think about and asked for written suggestions from group members individually. Following were the areas for discussion and details of ideas obtained from all kind of members:

BROAD CATEGORIES	INVOLVED MEMBERS	IDEAS
EASE OF USE (user friendliness)	Faculties (F)	F&S:after hitting study material, redirect to different page with search criteria with better visuals S: change required in present navigation S:: Absence of feedback after button press
	software developer(S/W)	
	Researcher(R)	
	Student representatives(S)	

		Software dev : menu bar can be placed at top of page (header section)
AESTHETICS	Faculties	Software dev: use of magnifying glass icon at the right end of search box input Faculty and Owner: enlarge the search box and use bold color to make it visually appealing Software dev: prefilled search box with search or key words, also support autocompletion Software dev: Advanced search can be kept just after search box at the right end
	Owner(O) and Researcher	
	Software developers	
CONTENT	Faculties	Software dev : present content in dropdown list form in normal search (while typing and after enter keyword hit) Software dev: need content selection criteria for each content in dropdown list Software dev : offer multiple choice in case of advanced search (sort by date, month etc), provide option for clear search criteria and start over.
	Owner and Researcher	
	Software developers	

CONTEXT OF USE	Software developers	O&R: change in layout in mobile view by providing centered enlarged search box at top of page S/W: search option must be centred with prefilled options S/W: in mobile or tab, don't require logo instead provide enlarged search box
	Owner and Researcher	

In the second phase of brainstorming, Round Robin Technique, I add up a summary of the previous phase and continue our discussion over 'why of each responses'. Group members opened themselves more upon the written content and also took others feedback without criticizing or judging. A brief summarized point can be found in the ***Table-C.***

In the third phase of brainstorming; group talk, the objective was to integrate all the different ideas (by finding a common ground) and also look for any new criteria if found, which support the development part of the website and proceed with the selected design prototype. At this stage, our main focus was on the function of the working system. Look and Feel was not the prime motive and so in this sense most of the group members were ready to proceed after having individual feedback. No significant points were raised.

3 SELECTION CRITERIA

Based on inputs obtained from Brainstorming session and User Inventory (obtained from survey, interview and observation), we have been able to define a general persona ***(as shown in Figure-C),*** since most of the students are from similar backgrounds (in technical expertise) except academics, so in my

understanding it serves the purpose. Following common ground has been observed to move forward with the prototype:

a) All the stakeholders agreed to have advanced search options (flexibility to users and reduce cognitive load).

b) All the stakeholders need some changes in the appearance of the search box (which is user friendly on different systems mobile, laptop etc).

c) Voice assistance while performing the search operation.

Based on these points (gathered from inventory and brainstorming), I have decided to go with following prototypes:

3.1 Textual Prototype

This option will offer me great flexibility to bring any changes instantly and get appropriate feedback .

3.2 Card Prototype

It is a combination of (multiple screens which represent different parts of the working system). This way I can simulate their working procedure and map the workflow. It will help me in filing Gulf of execution and Gulf of evaluation if there is any.

3.3 Paper Prototype

Having the card prototype at the previous stage, I am in position to integrate all the smaller working screenshots together and simulate the working procedure at system level. In case if the user is not satisfied with a certain part of the system, we can go back to make changes in the card prototype in specific places and incorporate the required changes into the wireframe. So, it would justify the concept of rapid prototyping while developing the final product.

4 TEXTUAL PROTOTYPE

Based on input from a brainstorming session and after analyzing it with respect to user inventory, we agreed to bring the following changes in current interface.

In the new interface, the Menu Bar should be placed at the top of the page aligned centrally. It must appear in dropdown format (buttons aligned horizontally) whenever we move the cursor in that area. Study material and home page content should be placed below the menu bar in a static manner.

Once the "Study Material" button gets hit, either change the page layout by bringing search criteria at the top of the page (along with magnifying glass in the right side of input text box that represents search) or redirect to a different page with search option at the top in the header section of the page. It must be of sufficient length around 27-character text input. we will consider a growing search box, which expands the text input field on click.

We will also provide an option for Advanced search (using multiple criteria) on the right side of the search box adjacent to magnifying glass in case the user doesn't know the search criteria.

Search options should be prefilled with different search words (like subject, author etc) , an auto-suggestion mechanism that makes the search easier for the user. As we type the query, autocomplete results are shown which helps you to quickly find helpful information and list the option as a dropdown list according to the user's input.

Search box results should appear in a list form and we should be able to right click on list items, by right click we should be able to save it in personalized workspace or send it to external storage (Google drive), or open it in a separate browser.

since most of the users use mobile phones to access the material. We have agreed to incorporate voice search as an option too (similar to youtube).

5 CARD PROTOTYPE

Based on our survey we have mobile users in majority, so card prototype would be a better choice after textual prototype. With the help of this prototype we will be in position to present multiple screens (work flow of the working system) before the user and validate the work-flow obtained from the previous phase. We can apply an iterative design process by going back and forth between the current stage and previous stage. If any change is required, it will be much easier to bring modification in a particular screen prototype as per textual information.

In our present design, we have four different pages (which represent only the study material section of the website).

First, Figure -D (shown in appendix) represents the home page of the website with the study material section at the right top of the page. This is the first operation any user performs.

Second, Once the submit button gets hit, the sequence goes to the next screen ***Figure-E (shown in appendix)*** (same as the textual prototype), which displays a search box with clue words (for example, in this case, it is "Subject name").

Third Figure-F, Once a user starts entering the query, autocompletion of input query comes into play and brings relevant results. User selects the desired result by right clicking.

Fourth Figure-G (shown in appendix), If the user is not sure about search criteria, he/she may hit the advanced search button, which redirects to advanced search option.

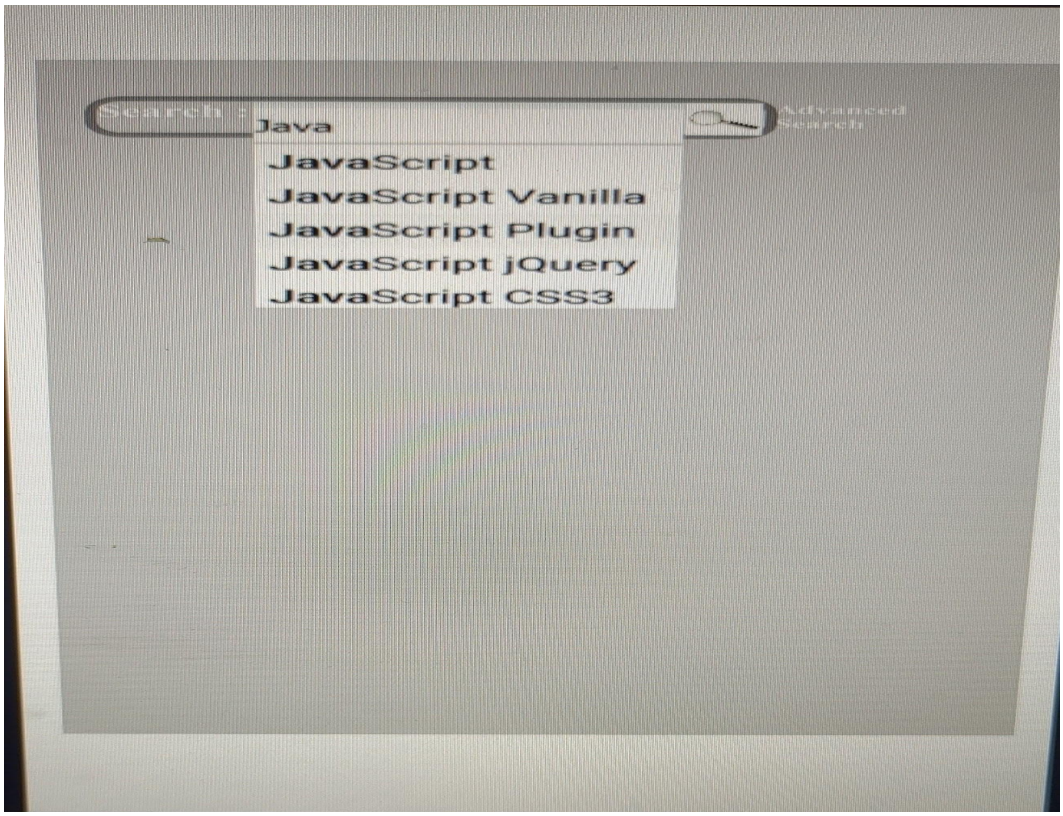
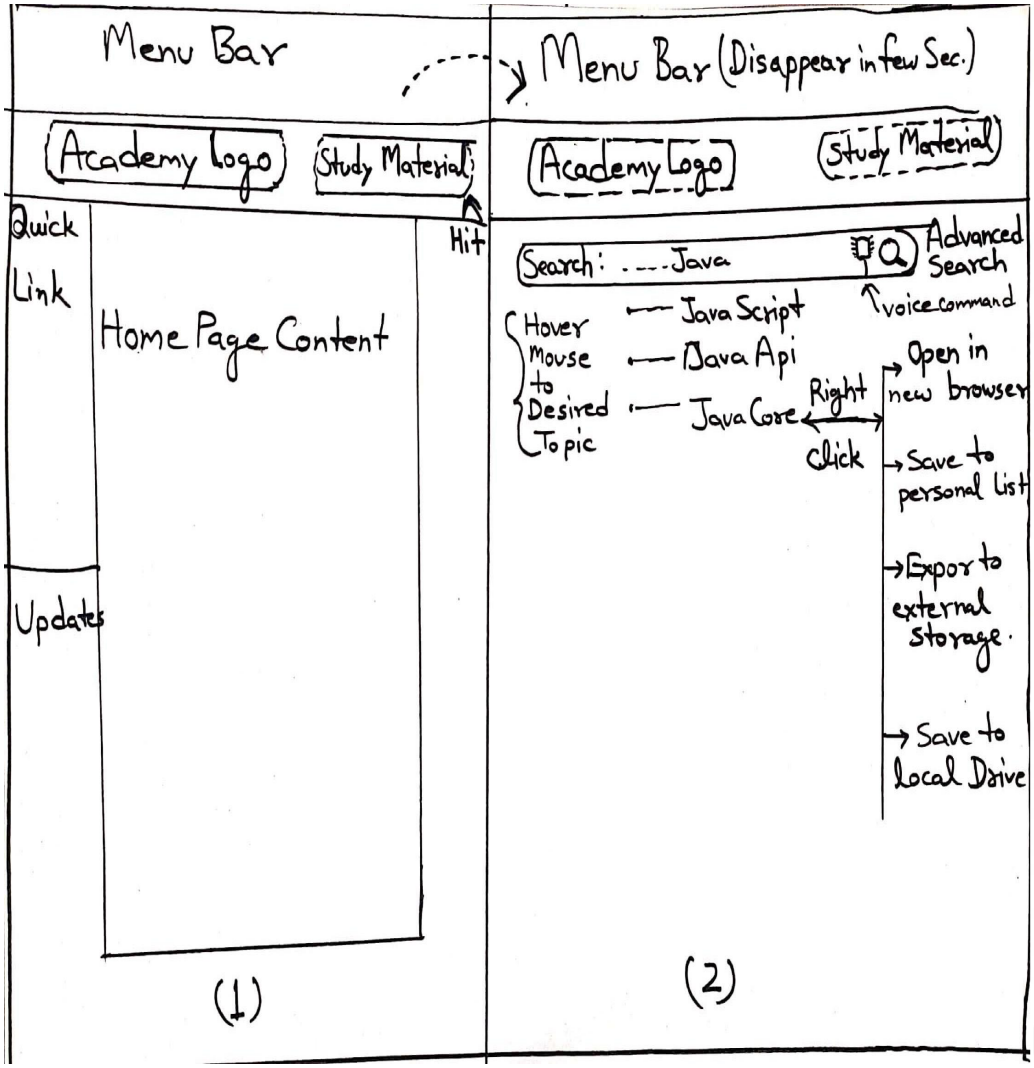


Figure-F

6 PAPER PROTOTYPE

Once we pass through the textual and card prototype, it is time to consider the interface as a complete system. At this stage, along with searched content users will also want to perform other operations (like save the content to a personalized list, start reading by opening the content in a parallel browser). Users already aware of the advanced search features so one more explanation is not required. But it is discoverable while doing the search.



7 REFERENCES

- Houde, S., & Hill, C. (1997). What do prototypes prototype? In M. Helandar, T.K. Landaeur, & P. Prabhu (Eds). *Handbook of Human-Computer Interaction*, *2.* (pp. 367-381). Elsevier Science.
- Beaudouin-Lafon, M., & Mackay, W. (2003). Prototyping tools and techniques. *Human Computer Interaction-Development Process.* (pp. 101-142).

8 APPENDICES

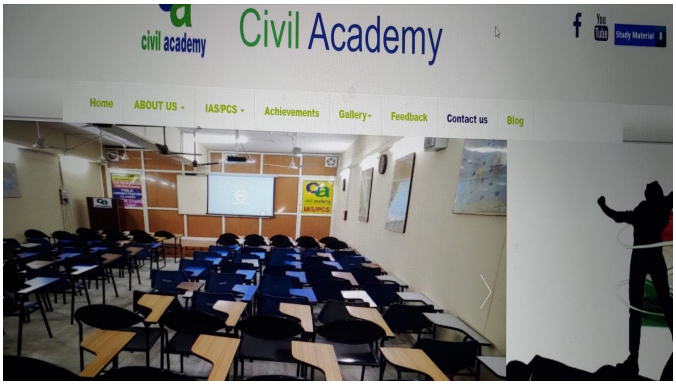


Figure-A

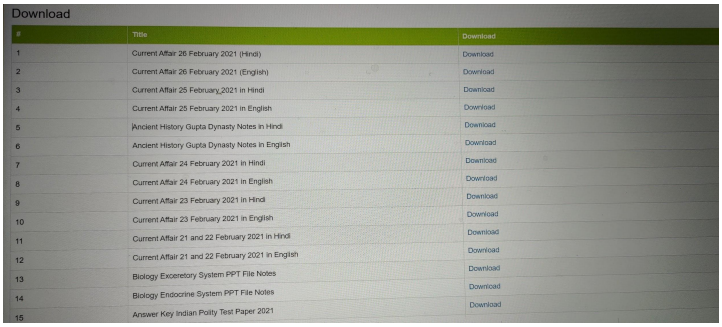


Figure-B

8.1 Group Talk

CATEGORIES	*IDEAS*

Ease of Use	1.During discussion we came to the agreement that placement of the Study Material button is at the right place, users find it easier to navigate the things when it is near the right corner. 2. However, we do not need the Menu Bar section all the time and it can be made to disappear after a few seconds. It's appearance should correspond to cursor movement, if you hover in that area it should appear as drop down. 3. Navigation part is confusing as the option for download or list of items does not appear anywhere in the visual part of the page. *4. After hitting the button, some feedback is required so the user understands that button is pressed successfully.* 5. Voice assistance during search was seen as a user friendly option to minimize cognitive load while travelling.
Aesthetics	1. We need a good representation for the search box. To reduce the time required for search, it must be prefilled to offer the user some clue.

Content	1. Since users are mostly novices and not from technical backgrounds, so we need some approach where they can start using the material with minimum effort. In our discussion, it was thought to offer right click with multiple options (download, open in separate browser). 2. Text to voice reading software was agreed to be helpful but it was not feasible from management at this stage.
Context of Use	In the past few years mobile users have increased and at present the website is not suitable for mobile view. It requires major changes in layout for viewing in mobile applications.

Table-C

8.2 Persona

Qualification:

B.A. in Liberal Arts

Technical Expertise:

Beginner Level

Awareness of Website Uses:

Used multiple academic website in the past

Familiar with search and login options

Age

20-30 yrs

In the coaching centre, users mostly use desktop or laptop to download course notes. At home, users are using mobile phones to connect. Topmost objective is to download notes when they use the website. They need user friendly visuals and workflow standards similar to other existing Indian academic websites.

Figure-C

8.3 Screen Shots

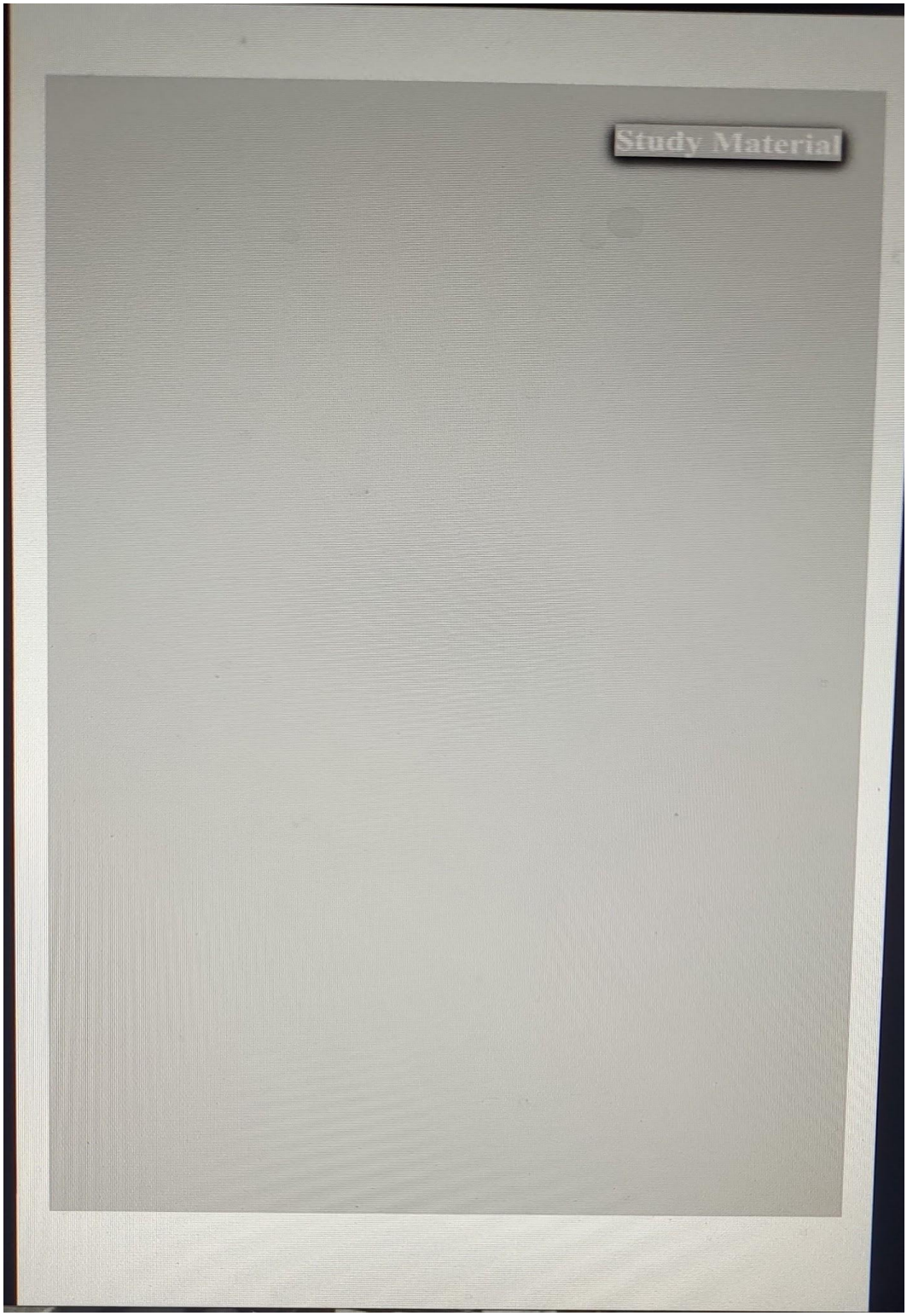


Figure -D

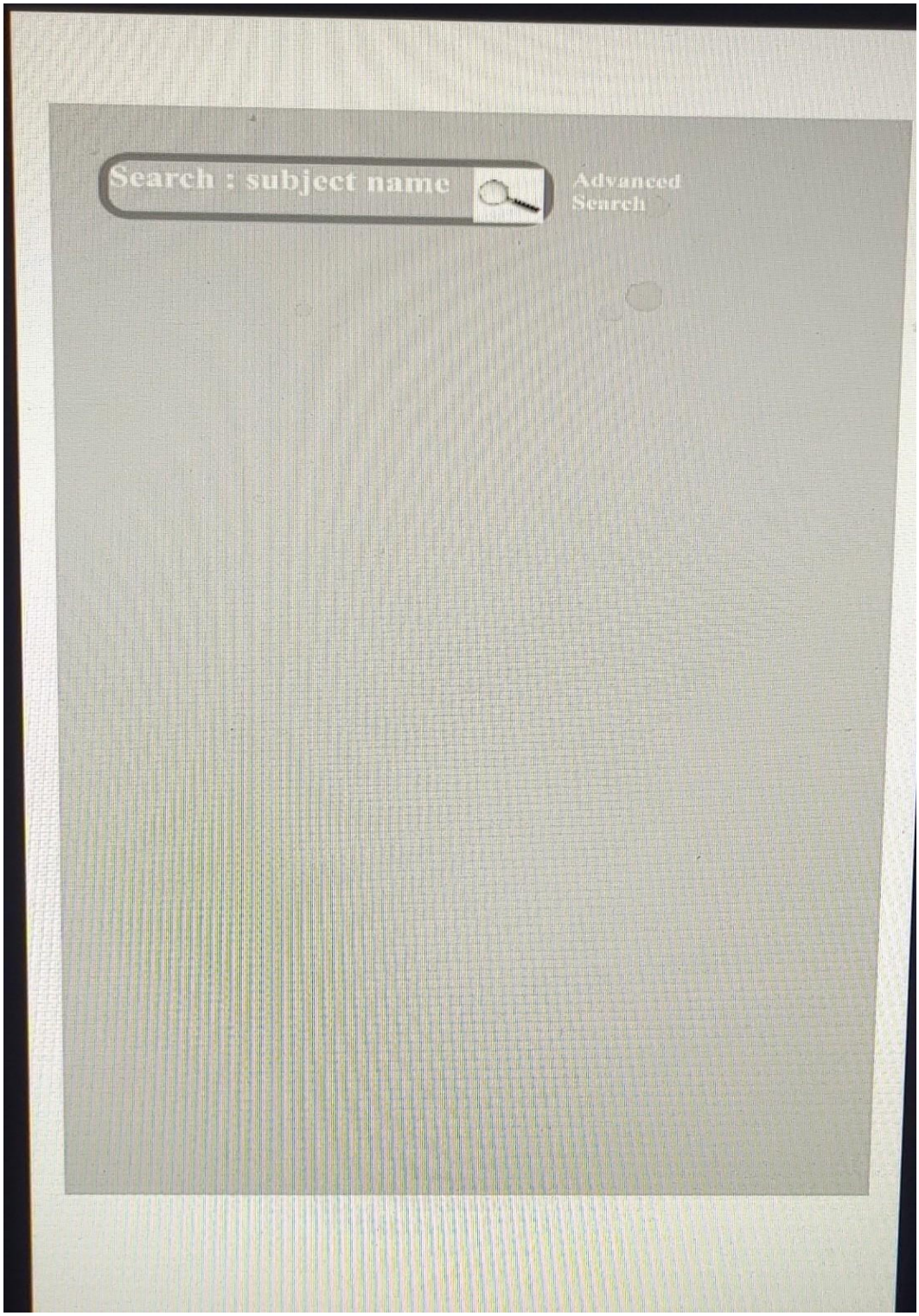


Figure -E

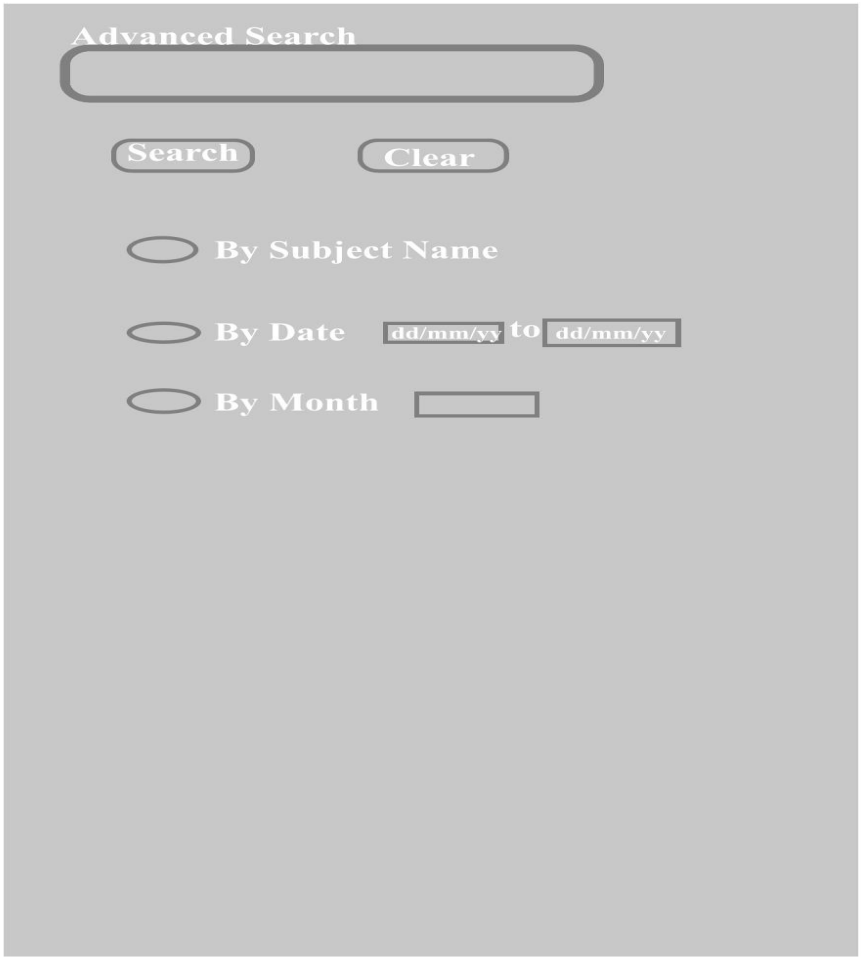

Advanced Search
Search
Clear
By Subject Name
By Date
dd/mm/yy
to
dd/mm/yy
By Month

Figure -G