# Course Finder for Executive Education

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***Abstract*—**For the M Assignments I will be investigating & designing an interface which will help users:
* explore *Executive Education Courses* offered on timestsw.com.
* filter the courses basis various relevant parameters.
* shortlist course(s) most suited to their profiles and/or needs.
TimesTSW is a prominent operator in India offering Executive Education course from premier Indian institutions. There has been a significant surge in demand amongst working professionals to up skill. Hence the number of courses being offered is steadily increasing, thereby overwhelming users with excessive options. A *"Course Finder"* functionality will benefit users & enhance the appeal of the website.

## 1 BRAINSTORMING PLAN

**Outline -**
To design the *Course Finder Interface* for the Times TSW Website, I will will engage in *Individual Brainstorming* & will execute it with *certain constraints*.
**Rules Followed -**
Basis the results of Needfinding & subsequently the Data Inventory, the *Interface Requirements have been robustly defined* with respect to Functionality, Usability, Learnability as well as Accessibility. These definitions will form the guidelines & boundaries for Brainstorming.
I will double-check the ideas to make sure they address the requirements & ensure that context is taken into account.
**Time Allocated for Brainstorming -**
With an aim to get a breadth of ideas I will be performing the exercise *5 times through the week* for a total of about *5 hours*.
**Standards to be Met -**
*Mobile First* approach is the constraint that will be enforced. Likewise the ideas need to be *Scalable* to accommodate an increase in the count of courses as well as an addition of parameters related to the courses.
Each Brainstorming session will be restricted to *half an hour*. It will be followed by at least an hour long break.

Via brainstorming, I will generate at least *10 Approach Ideas*.

## 2 BRAINSTORMING EXECUTION

**Overview:**
The brainstorming was executed as planned. As stated above, I adopted the *Constraints based* approach for brainstorming,
I was able to generate at least 10 ideas for each the sub-tasks. Photos of the sheets I used for brainstorming & the associated raw ideas can be viewed in *Appendix 7.1: Brainstorming Ideas Sheets*.

**Raw Ideas for the Interface Design**
Below is the consolidated summary resulting from the brainstorming session. Each approach is given a *Representative Name* to differentiate it from the other:
1. *eCommerce Approach*:
Similar to the provision on the search results page of Amazon India. Likewise all courses will be listed in a pre-defined order with the available filters present on the left.
2. *Wardrobe Approach*:
This is akin to selecting wardrobe wherein all courses will be listed in a pre-defined order. Users have to browse through all the courses & pick the ones they want to 'shortlist'.
3. *Conversational Approach*:
The approach here follows the typical process of a conversation in a ChatBot. The flow will be verbose & similar to a question and answer format.
4. *Visual Filter Approach*:
Here we will display all the filter parameters as well as the options within each parameter. This will give the user an idea of the different types of courses. Once the user selects the options within the parameters, the courses will be displayed.
5. *Menu Approach*:
Similar to a restaurant menu, we will have different sections e.g. Institute, wherein all courses will be listed. While here the same course will be listed under different sections, it allows users to select a section of their choice and then look for a course within it.
6. *Supermarket Approach*:
Only 'Live' courses will be displayed. The courses will be displayed section-wise e.g Course Categories. User will need to browse courses within each section,

there will not be any filters.
7. *Android Approach*:
Like the menu in Android, where similar icons can be clubbed together into a 'Group'; the interface will have courses 'grouped' under suitable categories.
8. *TV Channel List Approach*:
Akin to a program selector guide, the user will have different lists e.g.
All Courses > Gives list of all courses
All MBA Courses > Gives list of all MBA Courses
All 3 Month Courses > Gives list of all courses with duration of 3 months
etc.
9. *Conventional Approach*:
Here filters will be displayed as a drop down. Once a user has finished selecting the filters, they can view the filtered results.
10. *Flight Information Display Approach*:
This will be a time-wise listing of the courses as the primary display. Users would be able to scroll through the list & move to exploring individual courses.
11. *Social Approach*:
In this approach the primary listing of the courses will be basis the recommendations the course has received or the number of enrolments the courses have had for a specific time period.

## 3 SELECTION CRITERIA

**Criteria & Reasoning for the Selection :**
The selection criteria will be dictated by the *Interface Requirements* defined in M2. The same are included in *Appendix 7.2: Interface Requirement Definition* for reference.
Selection of the 3 ideas will be based on the capability of the interface to achieve the user's goal which is to *explore the available courses, filter & shortlist the same*.
I think the following approaches qualify to go through to the prototype phase basis the selection criteria:
1. **Conventional Approach**
2. **Conversational Approach**
3. **Visual Filter Approach**

**Connecting the selection criteria to the requirements definition :**
The Requirement Definition of M2 not only helped setup constraints while brain-

storming, it also dictated which of the brainstormed ideas were selected. (Included for reference in *Appendix 7.2: Interface Requirement Definition*)
This ensured consideration of crucial aspects like the 'Context' (which encompasses the 'Mobile First' approach) & 'Scalability' while filtering from amongst the brainstormed ideas.

## 4 PROTOTYPE 1 - TEXTUAL PROTOTYPE

This is for Idea 1, which is the *Conventional Approach*.

**Prototype Description**
The Conventional Approach Idea leverages the *Principle of Consistency*. The aim is to use elements in the interface which are prevalent across the World Wide Web so that users are aware of how they work & hence they are comfortable using them.
The core element used here will be the 'Drop-down'. The interface effectively will consist of a series of drop-downs. The drop-downs will be laid out one below the other in the mobile version & along rows in the version for wider screens.
Each drop-down will represent one of the parameters using which courses can be filtered. For example Course Category, Institute, Course Fee, Course Duration, Course Type, Eligibility: Work Experience, Eligibility: Education & Course Status. Within each parameter drop-down, the associated values will be provided. The options within the parameter drop-down will be arranged alphabetically.

**Prototype Working**
At the start, the each drop-down will not have any pre-selected values. The user will have the option to start off with any drop-down they want. Users will have the option to make only one selection in a drop-down, or select more than one options in any of the drop-down (if available) or ignore a drop-down if they want. There will be a button provided which the user will click once they have made their selections with a drop-down.
Each drop-down will have a button for the user to reset it to the default state (no selection made). Plus there will be a button for the user to reset all filters at one go if needed.
Once the user is done selecting the options from within the parameters that they want, there will be another button provided which the user will click to see the

results. The results will be a list of the courses which meet the users selection criteria.

**Prototype Functionality**

Once the selection for a drop-down are completed, which is indicated by clicked the confirmation button for that drop-down, the system will update all other drop-downs which have not been used to reflect the change in the courses which adhere to the choices made by the user.

Any drop-down which is no longer having functional options will be greyed out to indicate the 'out of use' status of that parameter. Similar functionality will take affect if the user chooses to reset a particular drop-down. If the user chooses to reset all the drop-downs, the system will return to the initial state wherein the drop-downs have no selection.

Users will be able to sort the resulting list using the applicable parameters.

**Prototype Evaluation**

*Requirements Met:*

From the Requirement Details outlined in M2, the prototype meets the criteria of Functionality, Usability, Learnability & Accessibility. With respect to the tasks, this prototype does a fair job of letting the users filter the courses & shortlist them subsequently.

*Requirements not Met:*

The idea behind this prototype & hence this prototype is struggles on the 'Explore Courses' aspect. While it does allow for exploration, it is not very effective in giving users a clear idea of the available courses.

*Mesh with the Audience:*

This prototype employs 'Consistency' by using a lot of Interface elements users are aware of, making it easy to use. It helps them Explore, Filter & Shortlist the courses which are the expectations from the Interface. The intended audience (as described in the data inventory) will not have problems using this. (Refer to *Appendix 7.3 Audience Description as per Data Inventory*)

## 5 PROTOTYPE 2 - VERBAL PROTOTYPE

This is for Idea 2, which is the *Conversational Approach*.

**Prototype Description**

The Conversational Approach Idea leverages the *Principle of Ease & Comfort*. The

aim is to use a question & answers mechanism which we are used to & hence ll users would have no issues using such an interface.
As mentioned above, the essence here will be 'Questions' which the interface will ask & 'Answers' the users will provide that will effectively control the flow of the process to traverse the user from Explore –> Filter –> Shortlist.
The questions will represent the parameters using which courses can be Explored. The order of the questions will be pre-defined. Then users will be provided the option to filter the courses basis the options within the parameter. The options within the parameter filter will be arranged alphabetically.

**Prototype Working**
**For reference a complete alternate branch covering all 8 questions is available in *Appendix 7.4 Prototype 2- Idea Conversational Flow - Alternative Branch*.**
The questions flow will be such that the subsequent one will be dependent on or build up on the response to the previous question. The start of the flow will be: *We currently offer x courses*. This will give the user an idea of the range of courses offered. Followed by: *How would you like to view the courses? View by:* Course Category, Institute, Course Fee, Course Duration, Course Type, Eligibility: Work Experience, Eligibility: Education & Course Status. These will be the options provided. Assuming the user selected Course Category. The 9 Categories within this parameter will be displayed. *Please choose which categories of Course would you like to explore (Multiple Choice Allowed)?* The options provided will be 1.General Management, 2.Leadership & Strategy, 3.Operations & Supply Chain, 4.Marketing & Sales, 5.Human Resource, 6.Technology & Analytics, 7.Finance & Banking, 8.Healthcare , 9.Business Law.
Once the user has made their choice, the list of courses will be displayed with the subsequent question being. *Would you like to Filter the Courses by)?*The options provided will be. Institute, Course Fee, Course Duration, Course Type, Eligibility: Work Experience, Eligibility: Education & Course Status, No Filter Needed. Assuming the user selected Course Status. The 3 Categories within this parameter will be displayed. *Please choose which Course Status would you like to explore (Multiple Choice Allowed)?* The options provided will be 1.Admissions Open, 2.Admissions Closed, 3.Coming Soon.
In this manner, the questions will flow letting the users Explore, Filter & Shortlist the Courses. From a pure *Combinatorics* point of view, arrangement of 8 parameters can be done in 40320 ways. But practically not all combinations will be applicable. The features of the Courses will dictate the possible flows

or branches.

**Evaluation**

*Requirements Met:*

From the Requirement Details outlined in M2, the prototype meets the criteria of Learnability & Accessibility quite well; Functionality & Usability aspects are met except for the filtering mechanism where some users might have some issues. Hence with respect to the tasks, this prototype does a fair job of letting the users Explore the courses & shortlist them eventually.

*Requirements not Met:*

While it will be very convenient for the users to explore & shortlist courses easily. The step of filtering may not be extremely convenient.

*Mesh with the Audience:*

This prototype employs 'Ease & Comfort' by adopting a conversational approach, making it easy to use. User can Explore, Filter & Shortlist the courses which much of a problem. The intended audience (as described in the data inventory) will be able to use the interface easily. (Refer to *Appendix 7.3 Audience Description as per Data Inventory*).

## 6 PROTOTYPE 3 - PAPER PROTOTYPE

This is for Idea 3, which is the *Visual Filter Approach*.

**Prototype Working**

Link to a higher resolution photo is found in *Appendix 7.5 Paper Prototype*.

The dotted lines represent the view port of a mobile device to ensure the design meets the 'Mobile First' criteria. The prototype has 4 main parts.

First, at the top is the introduction to the Course Finder. By giving the user a count of the total courses available we give the user an idea of the span of courses. Linking the first & second section is the introduction & call to action to use the filters.

The second section contains the filters which can be scrolled horizontally like a carousel & all parameters can be easily discovered. The filters functionality is fairly simple & intuitive. Numerical filters are given vertical sliders to compensate for the horizontal scroll of the filters.

A collapsible box forms the Third part. It highlights the effect of the filters by showcasing the count of filtered courses & when expanded shows the applied filter parameters & options.

Finally, the fourth part displays the list of filtered courses.

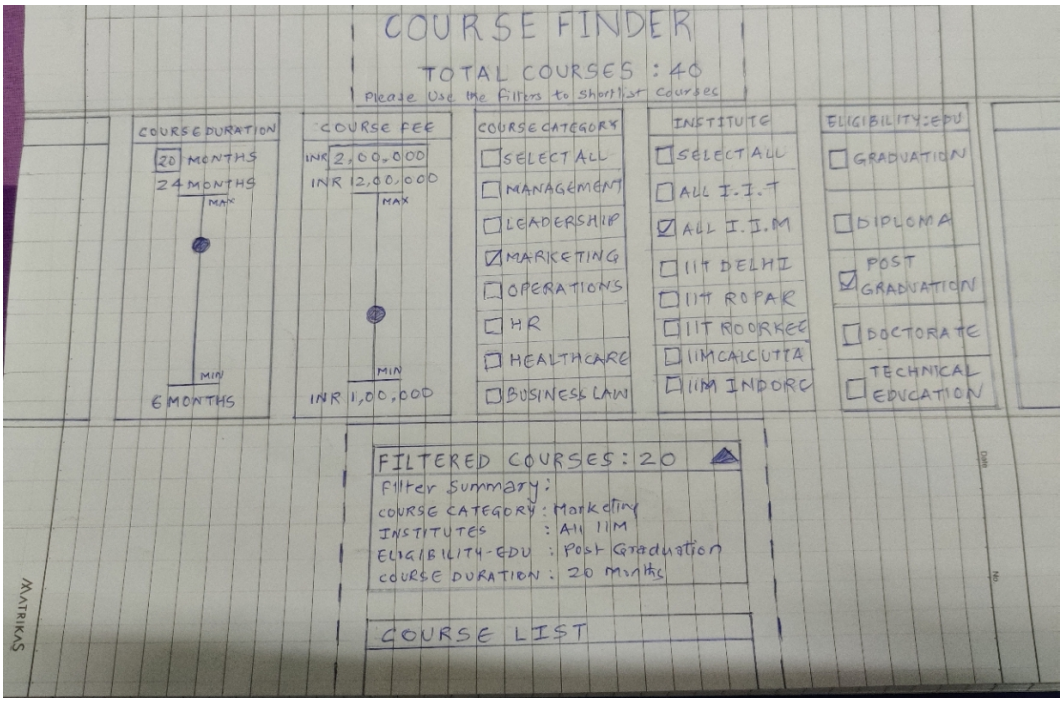


***Figure 1***—Paper Prototype for Visual Filter Approach

**Evaluation**

*Requirements Met:*

From the Requirement Details outlined in M2, the prototype meets the all the criteria of Functionality & Usability, Learnability & Accessibility quite well. From the task perspective, it does a good job of letting users Explore, Filter & Shortlist Courses.

*Requirements not Met:*

At the moment, there is no aspect which this prototype does not address. Further evaluations might bring out gaps that will needto tackled.

*Mesh with the Audience:*

Leveraging 'Discoverability' by adopting a Visual approach this prototype makes it easy for users to accomplish their goals. The intended audience (as described in the data inventory) will be able to use the interface easily. (Refer to *Appendix 7.3 Audience Description as per Data Inventory*)

# 7 APPENDICES

## 7.1 Brainstorming Ideas Sheets

Raw results from brainstorming are saved in Brainstorming ideas.

## 7.2 Interface Requirement Definition

Basis the observations, the final interface will have the following requirements.
**Functionality & Usability:**
The interface should help users in their quest to choose the best Executive Education Course for themselves. It should allow users to filter the list of courses using a combination of useful parameters. The filters should auto-update & not lead users to a dead end. Once filtered, users should be able to sort the list (if there are more than 1 resulting courses) using the filter parameters chosen. Users should have an option of viewing the filtered results as a list or a grid. In the grid view, the information depicted should help the user decide if they would like to shortlist the course or not. Hence providing Salient features, reviews etc in a concise manner is needed.
**Learnability Goals:**
It defines how easy the interface is to learn, or how quickly new users will be able to accomplish their tasks on an interface. Also needed is the requirement for users to have an idea of the possible functionalities that the interface provides. The requirement from the system is to have the interface simple, using as many common conventions to ease learning.
**Accessibility Standards:**
Since we learned in Needfinding that users are likely to access the interface from anywhere, from an accessibility point of view, the interface should be designed from a 'Mobile First' perspective but should render across devices, operating systems & browser configurations flawlessly.

## 7.3 Audience Description as per Data Inventory

**Who are the users?**
While the target audience of the interface will be dictated by the requirements of the courses being offered, in general the user groups can be defined as.
**Gender**: There is no restriction or limitation.
**Age Group**: 24 years to about 55 years old.
**Education**: At least Graduates. Can be Post-Graduates or PhDs as well.

**Work Profile**: Individuals with white-collared jobs.
**Work Experience**: Minimum 3 years to about 25 years.
**Expertise**: Junior to Mid to Senior Management. Fluent with English.
**Income**: Minimum $ 30,000 (Annual)
The same was echoed in the survey results.

**Where are the users?**
Due to the business requirement, we are consciously looking at individuals residing in India. They can either be citizens or expats. As learned from the survey, the users can be physically anywhere: at home. at work, on a vacation, on the move etc.

### 7.4 Prototype 2 - Idea Conversational Flow - Alternative Branch

**Prototype Working**
*How would you like to view the courses? View by:*
Course Category, Institute, Course Fee, Course Duration, Course Type, Eligibility: Work Experience, Eligibility: Education & Course Status. These will be the options provided.
Assuming the user selected Course Status.
The options provided will be 1.Admissions Open, 2.Admissions Closed, 3.Coming Soon.
The subsequent question will be:
*Please choose which Course Status would you like to explore (Multiple Choice Allowed)?*
Once the user has made their choice, the list of courses will be displayed with the subsequent question being.

*Would you like to Filter the Courses by?*
The options provided will be.
Course Category, Institute, Course Fee, Course Duration, Course Type, Eligibility: Work Experience, Eligibility: Education & No Filter Needed.
Assuming the user selected Course Type.
The options provided will be 1.Certificate Course, 2.Diploma, 3.Degree.
The subsequent question will be:
*Please choose which Course Type would you like to explore (Multiple Choice Allowed)?*
Once the user has made their choice, the list of courses will be displayed with the subsequent question being.

*Would you like to Filter the Courses by?*

The options provided will be.
Course Category, Institute, Course Fee, Course Duration, Eligibility: Work Experience, Eligibility: Education & No Filter Needed.
Assuming the user selected Course Category.
The options provided will be 1.General Management, 2.Leadership & Strategy, 3.Operations & Supply Chain, 4.Marketing & Sales, 5.Human Resource, 6.Technology & Analytics, 7.Finance & Banking, 8.Healthcare, 9.Business Law.
The subsequent question will be:
*Please choose which Course Category would you like to explore (Multiple Choice Allowed)?*
Once the user has made their choice, the list of courses will be displayed with the subsequent question being.

*Would you like to Filter the Courses by?*
The options provided will be.
Institute, Course Fee, Course Duration, Eligibility: Work Experience, Eligibility: Education & No Filter Needed.
Assuming the user selected Institute.
The List of Institutes will be provided.
The subsequent question will be:
*Please choose which Institutes would you like to explore (Multiple Choice Allowed)?*
Once the user has made their choice, the list of courses will be displayed with the subsequent question being.

*Would you like to Filter the Courses by?*
The options provided will be.
Course Fee, Course Duration, Eligibility: Work Experience, Eligibility: Education & No Filter Needed.
Assuming the user selected Course Fee.
Users will be allowed to select a range between the minimum & maximum fees.
The subsequent question will be:
*Please choose the Range of Course Fee would you like to explore?*
Once the user has made their choice, the list of courses will be displayed with the subsequent question being.

*Would you like to Filter the Courses by?*
The options provided will be.
Course Duration, Eligibility: Work Experience, Eligibility: Education & No Filter

Needed.
Assuming the user selected Course Duration.
Users will be allowed to select a range between the minimum & maximum duration.
The subsequent question will be:
*Please choose the Range of Course Duration would you like to explore?*
Once the user has made their choice, the list of courses will be displayed with the subsequent question being.

*Would you like to Filter the Courses by?*
The options provided will be.
Eligibility: Work Experience, Eligibility: Education & No Filter Needed.
Assuming the user selected Eligibility: Work Experience.
Users will be allowed to select a range between the minimum & maximum eligibility.
The subsequent question will be:
*Please choose the Range of Eligible Work Experience would you like to explore?*
Once the user has made their choice, the list of courses will be displayed with the subsequent question being.

*Would you like to Filter the Courses by?*
The options provided will be.
Eligibility: Education & No Filter Needed.
Assuming the user selected Eligibility: Education.
The options provided will be 1.Graduate, 2.Diploma, 3. Post Graduate, 4. Doctorate, 5. Technical Qualification
The subsequent question will be:
*Please choose the Eligible Education Levels you would like to explore (Multiple Choice Allowed)?*
Once the user has made their choice, the list of courses will be displayed.

### 7.5 Paper Prototype

Higher Resolution Image of the paper prototype can be found here: Paper Prototype for Visual Filter Approach.