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Nature of Event (Workshop, Guest Lecture, Add-on Course, Seminar, etc.)	Webinar Series
Name of Department	Computer Science
Faculty In-Charge	Ms. Prajoti Chimulkar, Mr. Edwin D'Souza
Stratum of Event (College,State, Regional, National)	College
TitleofEvent	Good Design, Bad Design And Usability
Date of Event	9th May, 2022
Venue	Computer Science Lab St.Xavier'sCollege,Mapusa
Resource Person details	Mr.Sylvan Lobo, Scientist – Service Design Research, Behavioural Businesses and Social Science Group, TCS Research Mumbai
Objective/Scope of Event	To improve the UI design skills of the students
Particulars of Event	In this session, Mr. Sylvan Lobo stated that he would be covering two topics – Human Centric Design and Usability of Design. Mr. Lobo started his session by explaining what is meant by the term Design. He said Design is not creating technical solutions for people but going beyond the technical aspects – understanding the daily social, cultural and various aspects and putting together the solutions in order to solve problems, not only from a technological perspective but from a very holistic perspective. Human centric design is about putting the human perspective first, in order to solve a problem; it involves people right from the beginning and places them at the centre of the problem-solving design process. Mr. Lobo explained the following principles with respect to Human Centric Design.

	1. Focus on the needs and goals of humans. Today's systems are technology-centered or business-focussed. They are designed around the capabilities of the technology with people being asked to fill in the parts that the technology cannot do. Human-centered means changing this, we should try to understand what are the needs and goals of all the concerned people. In other words, we need to take into consideration all the people who are involved, taking account of the history, culture, beliefs and environment of the community. Importance is given to the Requirements Gathering Phase and the various methods and processes, to understand the core issues that the humans are facing and help find a solution by letting those who live in the community provide the answers. 2. Understand the core problem of the user Mr. Lobo stressed on the need to understand and solve the fundamental core issue, and not just the symptoms. For this, one needs to speak to the people. Some methods that can be used, include observation studies, wherein observations of actual practice are taken into consideration. Interviews and Focus group discussions can also be used where one keeps asking "why?" at each issue, until you get to the core of the problem faced. Core issues often include the people's lack of understanding of the complexity of the entire system. Once you understand the problem, you need to frame the problem correctly, leading to a much better solution. 3. Have a systems approach This approach focuses on all the aspects of the user journey. One has to keep the big picture in mind: what you want your users to accomplish with your product and what is the result that matters to you. Design, therefore, must focus upon the entire activity under consideration, not just isolated components. All the components need to be looked at and included, inorder to have a holistic systems approach. 4. Prototype, test and iterate Prototyping is important to build something and validate it with real users. Mr. Lobo explained the need to keep prototyping the

	design, testing, iterating and improving it frequently. Seeing how people interact with the product helps us identify problems, and the feedback received from the users will help product creators refine the prototype. The new prototype should be created and tested again. By completing this cycle over and over again, we can reach the state where we end up with a good product. Prototyping could use simple methods like drawing or sketching out the solution on paper, or also one could develop a mock-up, or include role-plays, acts, etc. Mr. Sylvan Lobo further explained that a good design is invisible and difficult to notice whereas a bad design is noticeable and everyone knows that there is an error. Good designs are ideally intuitive i.e it tells how to operate by just looking at it, whereas a label accompanying a design indicates a poor design. This was explained with very apt examples. The next topic covered was Usability – How to assess a design or product. A usable product or service has different dimensions and an ISO standard ISO 9241-11 defines three metrics. 1. Effectiveness – indicates the accuracy and completeness with which users achieve specified goals 2. Efficiency - refers to the resources the user exhausts to achieve a particular goal. This would include how easily and quickly one can complete a task without / with errors. 3. Satisfaction – relates to the user's subjective thoughts on their experience using the product. This includes their opinions and attitude on level of comfort, relevance of the application, and applicability of use; how pleasant it is to use the product. Besides these three dimensions, there are others which include 4. Memorability – When users return to the design after a period of not using it, how easily can they re-establish proficiency? 5. Learnability - How easy is it for users to accomplish basic tasks the first time they encounter the design?

	6. Error Tolerance - How many errors do users make, how severe are these errors, and how easily can they recover from the errors? 7. Legibility - The quality of being clear enough to recognize or read content In the next topic, Mr. Lobo spoke about Jakob Nielson's Ten Usability Heuristics for User Interface Design. These principles were well explained with suitable examples and are as follows: 1. Visibility of system status The design should always keep users informed about what is going on, through appropriate feedback within a reasonable amount of time 2. Match between system and the real world The design should speak the users' language. The way you should design depends very much on your specific users. Use words, phrases, terms, icons and concepts familiar to the user. When a design's controls follow real-world conventions and correspond to desired outcomes, it is easier for users to learn and remember how the interface works. This helps to build an experience that feels intuitive. 3. User control and freedom Users often perform actions by mistake. Hence there has to be support for undoing and redoing an action. This fosters a sense of freedom and confidence allowing users to remain in control of the system. 4. Consistency and standards There is need to follow standard platform and industry conventions. If you do something very different from what people are used to, then people have a challenge. Therefore, we need to maintain both types of consistency: internal consistency (within your product design) and external consistency (across multiple systems/products). 5. Error prevention Have safeguards to prevent errors. Either eliminate error-prone conditions, or check for them and present users with a

	confirmation option before they commit to the action. Errors can be accidental or misunderstanding/mistakes. Accidental errors can be avoided by providing helpful constraints and good suggestions. 6. Recognition rather than recall Minimize the user's memory load by making elements, actions, and options visually recognizable. The user should not have to remember information from one part of the interface to another. Information should be visible or easily retrievable when needed. 7. Flexibility and efficiency of use Flexible processes can be carried out in different ways, so that people can pick whichever method works for them. Shortcuts may speed up the interaction for the expert user such that the design can cater to both inexperienced and experienced users. Users should be allowed to tailor frequent actions. 8. Aesthetic and minimalist design Interfaces should not contain information that is irrelevant or rarely needed. This heuristic means you have to keep the content and visual design focused on the essentials. 9. Help users recognize, diagnose, and recover from errors Error messages should be expressed in plain language indicating the problem, and constructively suggesting a solution. 10. Help and documentation Necessary to provide documentation to help users understand how to complete their tasks. Documentation content should be concise, easy to search and focused on the user's task. The last topic covered was on Usability Testing where Mr. Lobo discussed two approaches to evaluate a prototype. In the first approach, we need to evaluate the design / prototype using the 10 usability heuristics. This is done with the help of experts or people doing UI designs. First, we need to identify the tasks to be tested and have different perspectives from 3-5 evaluators. The observations are noted with respect to the ten heuristics and the severity of the issues is taken into

	consideration. Finally a combined reports is generated in order to improve the design. In the second approach, Think Aloud Protocol, the tasks to be tested are identified and the prototype is given to at least 5 actual users. These users are asked to speak out each and every decision they are making or what they are thinking at that point, whilst doing the task. The evaluator observes and reports the issues. The session ended with questions put forth by students to the resource person.
Outcome of Event	The designing skills of the students have improved.
Feedback	Good.

Total No. of Participants	20

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