Human Computer Interaction (Hindi mein)

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Interaction Design Process

Lec13

[Music] Namaskar main Ritwik Bamba is course Human Computer Interaction ka shikshan sahayak hoon. Aaiye yeh tutorial shuru karte hain. Aaj ke tutorial ka hamara jo vishay hai woh hai Interaction Design Process. Sabse pehle hum yeh dekh lete hain ki humne isse pehle kya-kya samajh liya hai. Pehle ke tutorials mein humne good design versus bad design yaani achha design versus kharab design. Kya banata hai ek design ko achha? What makes a design good? Phir humne agle tutorial mein dekha inclusivity aur accessibility kya hoti hai? Woh kaise alag hote hain? Aur unke bhinn-bhinn prakar ke udaharan. Uske baad humne paanch mukhya design principles dekhe jo ki hain Visibility, Feedback, Consistency, Constraints aur aakhir mein Affordance. Chaliye shuru karte hain. Pehle yeh samajhte hain ki hum kya-kya padhne waale hain. Sabse pehle hum karenge What is Interaction Design? Kya hota hai interaction design? Ismein kya-kya shaamil hota hai? Iske kya-kya mukhya stambh hote hain interaction design ke. Phir uske baad hum dekhenge ek user centered approach kya hoti hai? Phir hum dekhenge interaction design mein kya-kya mukhya gatividhiyan chalti hain. Aur aakhir mein hum dekhenge kuch practical issues jo iske saath aate hain. Sabse pehle hum dekhenge interaction design hota kya hai? Toh yeh ek kaafi saare vishayon ko mila ke ek vishay khud banta hai jismein UI aata hai User Interface aur User Experience aata hai UX. Jahan pe interface aur experience mil jaaye woh ban jaati hai interaction. Theek hai? Chaliye phir uske baad hum dekhte hain yeh jo field hai yeh focus karti hai users aur digital products, digital upkaranon aur logon ke beech mein jo bhi vartalap hoti hai, interaction hota hai, interaction design us pe focus karta hai. Ismein hum yeh padhte hain ki hum kaise naye designs bana sakte hain jisse users vartalap karein. Ek product ko experience karein, anubhav karein uska aur hamara aakhir mein goal yeh hota hai ki jo interaction hai, jo vartalap hai woh behad hi intuitive ho. Hum khud se samajh sakein aur efficient ho. Aur yeh jo hamara interaction design hai, isko hum short mein likh dete hain IxD Interaction Design. Ab ismein hota kya-kya hai? Aap yahan dekhenge User Interaction Design. Ismein kya-kya aa raha hai? Sound design aa raha hai. Hamara kya sangeet chal raha hai? Human factors aa rahe hain hamare jo manushya se jo badalne waale factors hain, kuch industrial design, architecture, information architecture, user experience design, content jismein sangeet, text, audio, video yeh sab aata hai. Visual design aur aakhirkaar Human Computer Interaction. Yeh saare ke saare vishay milke banate hain Interaction Design. Hum ismein dekhte hain ki jo interactive systems hain unka structure aur behavior kaise kaam karta

hai. Woh kaise behave karte hain aur hum unhein phir implement karte hain ek madadgaar digital product banane mein. Phir hum yeh dekhte hain ki user aur jo product service hai unke beech mein kaisa ek relationship hai. Phir hum dekhte hain ki jo UI discipline hai woh asal mein samajh toh poori chahte hi hain but saath mein hum ek practical hands-on experience bhi karte hain interaction design principles ka. Aur jo hamara underline system hota hai usmein kya-kya aate hain? Device, interface, context, environment aur aakhir mein people jo ki hain hamare users. Yaani ki jo log jo asal mein is design ko istemal kar rahe hain. Kuch aur principles bhi hain hamare interaction design ke. Persuadability. Hum ismein ek intuition se, apni khud ki dimagi soch se hum kar sakte hain interaction ko aur interactive media se. Phir hum dekhte hain learnability pe. Jo log hain unke saath jo interaction ho rahi hai woh aasan ho yaad karne mein, logon ke liye samajhna unhein aasan ho. Phir hum dekhte hain error handling ki agar kuch galti ho rahi hai toh usko hum kaise sambhal sakte hain. Hum unhein pehle toh identify karein, detect karein, unka pata lagayein aur phir unhein theek karein. Aakhir mein hamare paas affordability hai. Affordability ka aap yaad karein, hamare pichle tutorial mein humne padha tha affordance. Yeh usi se hi liya gaya shabd hai jismein hum jo hamare rozmarra ke kaam hai unse hum ek inspiration lete hain ki hum apne digital kaam bhi kaise kar sakte hain. Ab hum aate hain jo main hamara topic hai usmein sabse pehle hum samajhte hain ki hamari jo problem space kya hai? Hum kya karna chah rahe hain? Kis problem ko kya dikkat hai jisko hum solve karna chah rahe hain? Exploration mein aata hai yeh ki abhi jo log hain unka abhi experience kaisa hai? Abhi waale jo systems hain unki kya hamari strength, weakness hai? Woh kis kaam ko achhe se karte hain? Kis kaam ko achhe se nahi karte hain? Ab uske baad hum dekhenge ki agar kuch achha hi chal raha hai toh badalna hi kyun hai? Why is a change needed? Aur aakhirkaar hum dekhenge ki jo agar humne yeh badlaav kar bhi diya, change kar bhi diya toh usse logon ki zindagi pe kya asar padega? Kaise user experience behtar ho sakta hai? Phir uske baad hum ek collaborative approach lenge jismein hum alag-alag logon se baat karenge, team se baat karenge taaki bahut hi alag-alag perspectives hamari team mein aayein ki hum kaise us problem ko solve kar sakte hain. Multiple viewpoints hum consider kar sakte hain taaki hum ek bias jo hai woh avoid kar sakein. Hamare mann mein kuch kisi cheez ko lekar already ek opinion bana hua hai toh hum usko avoid kar sakein. Aise hi hum unverified assumptions ko avoid karein. Hum apne mann mein kuch soch ke baith jaayein aur phir hum apna product ya design usi hisaab se banate rahein. Yeh theek nahi hai. Humein collaborative approach leni hai. Team ko saath lena hai. Alag-alag viewpoint se us ko samajhna hai aur koi bhi unverified assumption ko dhyan mein nahi lena hai. Ab ek user centered approach hoti kya hai? User centered approach mein hamara user jo hai, jo upbhokta hai woh hai hamare center mein. Uske aaspaas sabhi kuch kaam hoga. Phir chahe woh feedback lena ho usse, prototyping karni ho, collaboration karna ho, kaam karna ho kuch bhi. Woh user ko beech mein rakh ke kiya jayega. Hum users par shuruwat se hi dhyan rakhte hain. Hum users ko ek gehri study ke through jaante hain ki woh kis tarah se abhi dikkat ko face kar rahe hain. Kis tarah ki dikkato mein hain woh abhi. Hum dhyan se yeh dekhenge, maapenge, record karenge ki kya dikkat aa rahi hai, kaise dikkatein aa rahi hain. Aur phir hum baar-baar iterative design repeat karte hue design ko repetitively behtar karenge aur baar-baar hum ek cheez ko karenge.

Us pe feedback lenge. Phir usko aur behtar banayenge. Phir us behtar design mein phir se feedback lenge. Phir se usko change karenge aur phir usko users ko denge. Toh jaise-jaise hum logon ko saath le chalte hain, users ko saath le chalte hain, toh hamara design aur behtar hota jaata hai. Ab ismein kya interaction design mein hamari kya chaar mukhya gatividhiyan hoti hain. Woh hai sabse pehle hum ek jo dikkat hai usko hum samajhte hain. Usko pata lagate hain ki kya dikkat hai. Abhi kya chal raha hai aur agar hum kuch laayenge toh kya hoga? Phir hum dikkato ko theek karne ke liye kuch ek problem ka solution dhoondhenge, banayenge woh solution. Woh solution banane ke baad hum uski testing karenge ki kya yeh asal mein us problem ko solve kar pa raha hai. Prototyping karne ke baad hum evaluating pe aayenge jahan pe hum user se feedback lenge ki kya yeh unki jo dikkatein hain unko asal mein solve kar pa raha hai. Aur phir hum wahan se phir se aa sakte hain dikkat ko samajhne mein ya phir hum aa sakte hain wapas ek naye design pe. Hum sabse pehle identify karte hain. Needs ko pata lagate hain jismein hum logon ko aur unki dikkato ko samajhte hain ki woh kis tarah ki dikkato se guzar rahe hain. Hum logon se baat karte hain. Unki dikkatein samajhte hain. Unse gehri discussion karte hain. Interview lete hain unka taaki hum samajh sakein ki woh kin dikkato se guzar rahe hain. Aur phir un dikkato ko abhi waale solution kis tarah solve kar rahe hain. Phir hum apne solution ko sochenge ki humne kya banaya hai us dikkat ko theek karne ke liye. Phir hum uske hisaab se hi jo logon ke hisaab se ek narrative banayenge ki woh kis tarah se isko use karke apni zindagi behtar kar sakte hain aur phir ek task analysis kar sakte hain hum jisse hum alag-alag steps ko todkar ek-ek karke samajh sakein. Phir uske baad hum unhi jo humne problem ke solution soche the unhi se hum unke interactive versions banayenge jo design guidelines aur principles ke hisaab se bane honge aur phir unhein behtar karne ke alag-alag tarike dhoondh sakte hain. Phir hum un designs ko evaluate karenge, pata lagayenge ki users iske baare mein kya sochte hain. Users se feedback lenge aur phir feedback lene ke baad jis tarah se user use chahta hai, hum product ko modify karenge aur users ko phir denge. Ek yeh bahut hi zaroori cheez aati hai hamare design mein jisko hum kehte hain Four Ds of Interaction Design jismein hum sabse pehle discover karte hain, phir define karte hain, phir develop karte hain aur deliver karte hain. Jo humne abhi itni der pehle padha yeh usi ka ek chhota form hai. Hum sabse pehle samajhte hain ki kya dikkat ho rahi hai. Uske baare mein sab kuch samajhte hain. Phir uske baad hum ek dikkat par narrow down karte hain. Jahan pe hum define karte hain ki problem kya hai hamari? Aur is jagah pe hamare paas hamari banti hai problem statement. Yahan se phir hum uske liye solution dhoondne nikalte hain. Hum alag-alag solution sochte hain aur phir hum jo perfect solution hai woh us pe aa jaate hain. Aur yahan pe aake banta hai hamara final product. Discover jahan pe hum pata lagate hain problem ke baare mein. Phir define jahan par hum problem ko define karte hain. Phir hum develop karte hain. Uske liye solution aur phir deliver karte hain. Isi ko hum ek aur tarike se bhi samajh sakte hain jo kuch hamare vidwaan log hain woh isko is tarah se batana chahte hain ki chaar nahi hai. Paanch hai. Hum sabse pehle logon ko samajhte hain. Phir uske baad jo bhi humne samjha, jo humne pata kiya hum usko padhte hain. Usko analyze karte hain aur usse hum apna jo user base hai hum usko aur behtar tarike se samajh paate hain. Uske baad hum phir aate hain solution banane pe jahan pe jo designers hain woh alag-alag tarike ke

solutions banate hain aur uske baare mein sochte hain. Ismein prototyping, wireframing is tarah ke bahut alag-alag techniques use ki jaati hain. Uske baad hum prototype karte hain. Hum us product ka ek asal version banate hain. Interactive model banate hain jisse hum usko test kar sakein. Aur aakhirkaar hum us prototype ko users ko dete hain taaki woh use test kar paayein. Test kar payenge aur phir uske baare mein humein feedback de payenge ki is design mein is solution mein kya kamiyaan hain aur kya achha hai iske baare mein taaki jo bhi khamiyaan hain hum unko poora kar paayein. Aur bhi kuch vidwaan alag-alag tarike ke model banate hain iske liye jismein ek yeh Rogers and Marshall ka aata hai jismein theory se hum study karte hain. Phir design karte hain. Phir technology ko bhi hum dhyan mein rakhte hain. Google ne bhi ek banaya tha aisa jismein chheh phase hain paanch ki jagah. Pehle hum samajhte hain, understand. Samajhne ke baad hum problem ko define karte hain. Kya hai dikkat? Phir hum sketch karte hain. Solution banate hain bahut saare. Phir decide karte hain ki kaun sa solution chalna chahiye. Aur phir hum prototype karte hain aur aakhirkaar validate karte hain usko hamare user testing ke through. Phir hum unse lete hain feedback aur phir se hum aate hain yahan pe. Interaction design mein hum mukhyat paanch dimensions dekhte hain. Sabse pehli dimension hai words, jo akshar, shabd logon ko diye jaate hain. Doosra hai visual representation jismein hamare icons aate hain, photos aati hain, interface ke elements aate hain. Phir hamare paas ek yeh physical objects aate hain jo 3D kaha jaata hai jo actual products hain hamare, physical products, physical tools jisse use karke hum apne solution ko, product ko istemal kar sakte hain, unse interact kar sakte hain. Chauthi dimension hai hamari time jismein animations, videos aate hain aur aakhirkaar paanchvi dimension hai behavior. User behavior jo hai hamara, log kaise bartaav karte hain woh humein hamare liye bahut zaroori hai yeh samajhne mein ki kis tarah se woh vartalap kaam karegi aur uske response mein hamara jo upkaran hai, system hai, woh kaise jawab dega. Yeh teen hamare mukhya characteristics hain jismein hum users pe focus karte hain. Specific usability goals pe focus karte hain aur phir iteration pe focus karte hain ki kaise hum usi pe repeat karke solution ko aur behtar kar paayein. Aakhirkaar hum aate hain kuch practical issues pe. Kya dikkatein face karte hain hamare designers? Users kaun hai? Sunne mein bahut hi aasan sa sawaal hai. Par iska jawab kaafi kathin ho sakta hai. Asal mein kaun hamare upkaran ko, hamare design ko use karega? Yeh jaanna bahut mushkil hai. Iske liye humein gehan anushandhan karna chahiye, research karni chahiye aur samajhna chahiye ki logon ko kya chahiye. Kya dikkatein hain unki? Use kis tarah se theek kiya ja sakta hai? Need se hamara kya matlab hai? Logon ki kya zarooratein hain? Yeh zarooratein samajhna ek behad hi zaroori kaam ho jaata hai. Yeh samajhna behad zaroori hai ki logon ki kya zarooratein hain. Asal mein. Yeh samajhne ke baad hum unke liye alag-alag design bana sakte hain. Yeh karne ke baad hum alag-alag design bana sakte hain. Aur alag-alag design se hum logon ki dikkato ka hal kar sakte hain. Aur aakhirkaar yeh jo humne alag-alag design banaye, inka hum kya kar sakte hain? Inmein se kisko hum asal mein istemal kar sakte hain apne aakhir ke design mein. Yeh hamari ek udaharan ke taur pe ek problem statement di gayi hai jismein humein ek plan karni hai trip. Toh uske liye humein ek product banana hai jo humein ek trip ko organize karne mein hamari madad kare. Ismein hamare paas kuch hints bhi diye gaye hain ki kis tarah ki humein chhutti chahiye. Kya-kya karna hai humein

usmein aur hum usmein sochenge ki kya-kya alag-alag gatividhiyan kis kshetra mein padengi. Sabse pehle hum ideation karenge. Hum sochenge ki hum kya-kya kar sakte hain ismein. Abhi yeh kaam kaun-kaun kar raha hai? Kaun competitors hain hamare. Humein kis tarah ki services deni hai. Phir humein kis tarah ka tour chahiye? Humein thoda mehnga tour chahiye. Thoda humein ek kifayati roop se tour dekhna hai. Humein users ko priority deni hai. Unhein sabse aage rakhna hai kisi bhi baat mein. Phir humein yeh samajhna hai ki kis tarah se woh jayenge trip par. Woh gaadi ke raaste jayenge, hawai jahaz ke raaste jayenge. Kitne din ka trip hoga? Kitne din woh jayenge chhutiyon pe? Kya kis tarah ka khana khayenge woh wahan jaakar? Aur alag-alag hum machine learning aur artificial intelligence ka kis tarah se istemal karke model ko behtar kar sakte hain. Phir hum uske design par jayenge. Usmein kya-kya hoga? Uske home screen par, shuruwati screen par yeh sab hoga. Logo aayega. Hamari company ka naam aayega. Login karne ke liye humein ek portal diya jayega aur humein bataya jayega ki isko kaise istemal karna hai. Home screen par jaane ke baad hamare paas alag-alag options aa sakte hain jismein ek search karne ka option de sakte hain hum jismein hum yeh pooch sakte hain logon se ki woh kahan jaana chahenge apni chhutiyon ke liye? Users ke reviews le sakte hain hum. Us jagah ki photo rakh sakte hain aur wahan kaise jaaya ja sakta hai. Aakhirkaar hamare design interaction design process mein jo yeh chaar basic activities hain, chaar mukhya gatividhiyan hain. Inka dhyan rakhna hai humein. Discovering requirements. Humein user ki zarooraton ko samajhna hai. Usi ke hisaab se humein solution banane hain. Prototype karna hai unhein aur aakhirkaar users se usi ka feedback lekar use aur behtar karna hai. Hum yeh sab teen cheezon par dhyan dekar kar sakte hain. Hum users ko shuruwat se hi apne saath rakh sakte hain taaki shuruwati taur se daur se hi hamara jo users ke saath naata hai woh theek rahe aur woh humein der badar dete rahein users feedback ki hum kis tarah se apna design aur behtar kar sakte hain. Hum criteria rakh sakte hain quantifiable jisse hum aur behtar tarike se maap sakein ki kaise hamara product kaam kar raha hai. Aur aakhirkaar ek iterative design hum baar-baar users se feedback lein. Usse aur behtar kar paayein apne solution ko, design ko, upkaran ko. Yeh bahut zaroori hai. Ek aur isi tarah hamare paas udaharan hai jismein humein ek product banana hai. Ek app banani hai jo personal development yaani dhyan lagane mein hamari madad kare. Jismein hum yeh sab cheezein daal sakte hain. Kya-kya usse hum kar sakte hain? Usmein kya-kya aa sakta hai? Achieve kar sakte hain. Hum hum goal set kar sakte hain. Apna progress track kar sakte hain. Aur kya-kya hum kar sakte hain. Usmein bhi hum ek aisa hi ek tarika apnayenge. Hum yeh dekhenge ki abhi log kya kar rahe hain. Aur abhi ki dikkatein solve kaise ho rahi hain. Kya-kya services de rahe hain log. Kis tarah se user ko priority mein rakha ja raha hai. Kya-kya dikkatein hain aajkal ke solutions mein? Aaj kya hamara nahi ho pa raha hai users ke through? Aur aakhirkaar hum kya user ko nasihat de sakte hain? Usi ke according. Phir hum user se feedback le sakte hain. Use aur behtar kaise kiya ja sakta hai? Design mein hum yeh mukhyat cheezein daal sakte hain. Logo ko aise rakh sakte hain. Hum saaf aur bahut hi chhota sa yaad karne mein aasan. Log use dekhte hi samajh jaayein. Sign up aur login ka page de sakte hain aur ek motto daal sakte hain jismein hum users ko bata paayein ki woh kya karna chah rahe hain. Yeh sab task hum home screen par daal sakte hain. Task management, focus timer, goal tracker, mindfulness

aur reviews. Ek aapke liye aur activity hai hamari ki humein ek mobile app ke through coffee order karni hai. Usmein hum yeh sab steps kar sakte hain. Sabse pehle hum user research karenge. Hum jaanenge hamare upbhokta kaun hone waale hain. Phir uske baad hum usi ke hisaab se requirement ko define kar sakte hain ki logon ko kya chahiye. Phir hum unhein prototype karke bana sakte hain aur aakhirkaar hum usi ko test kar sakte hain. Yeh iske solution banenge saath mein. Users honge iske students, busy professionals. Jin logon ko coffee peena pasand hai, woh kya karna chahte hain? Unhein ek coffee chahiye jaldi aur aasani se. Kya dikkatein aa sakti hain unhein? Unhein customize karne mein dikkat aa sakti hai. Unhein review karne mein time lag sakta hai thoda sa aur unhein yeh pata lagana chahiye ki unka kitni der mein order ready hoga. Unki hum zarooratein bhi likh sakte hain ki humein ek menu aisa chahiye jismein woh theek tarike se yeh bata sakein ki unhein kis tarah ki coffee chahiye. Usmein doodh kam daalna hai, cheeni zyada daalni hai. Aur is tarah ke alag-alag hum vikalp de sakte hain. Aur aakhirkaar hum unhein yeh bata sakte hain ki user kitni der mein coffee apni le payega. Kitni der mein aayegi coffee uski? Hum prototype karenge. Phir hum yeh top section mein likhenge ki location abhi kya dali hui hai coffee ke liye. Menu mein hum kaafi saare vikalp de sakte hain. Jab hum order karne jaayein toh ek popup aa sakta hai jismein hum bata sakte hain kaise customize karna chahenge hum apni coffee ko. Aur aakhirkaar end mein hum aakhirkaar likh sakte hain ki hamara order ki summary kya thi? Kya-kya order tha? Kitne ka order bana? Kitni der mein aa raha hai? Isko test karne ke liye hum bhinn-bhinn le sakte hain tarike. Jaise navigation and customization ko hum dekh sakte hain ki kya hamare jo upbhokta hain kya woh aasani se menu ko dekh pa rahe hain? Woh apni drink ko customize kar pa rahe hain? Kya jab order complete ho raha hai usmein kitni der lag rahi hai user ko complete karne mein? Kahin aisa toh nahi ki use complete karne mein bahut der lag rahi ho kyunki woh ek jagah hi atak raha ho baar-baar. Aur aakhirkaar order hone ke baad jo hamare user hain unhein ek tracking information di jaaye ki woh kis tarah se apne order ko track kar paayein. Kitni der mein aayega order unke paas. Yeh hamare kuch link aur kitabein di gayi hain jinko aap use karke inhi padhaye gaye vishayon par aur jaan sakte hain. Khaaskar yeh hamari jo interaction-design.org ki website hai. Aaj ke tutorial ke liye itna hi. Dhanyavaad. [Music]