Human Computer Interaction (Hindi mein)

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WAYV: Braille Assistive Gloves

Lec45

[Sangeet] Toh yeh hai glove. Humne ek Braille script ki tarah chheh dots, teen is ungliyon mein aur teen is haath mein laga diye. Saath hi saath har ungli ke upar ek vibration motor hai taaki mere ko pata chale maine kya input diya hai. Saath hi saath humne ek buzzer lagaya hai taaki humein sunai bhi de ki kya hum kar rahe hain screen pe aur kya hamara output sahi hai ki nahi. Ab main aapko dikhati hoon yeh laptop pe kaise chalta hai. The finger mappings are one is your left ring finger. Two is your left middle finger. Three is your left index finger. Four is your right index finger, five is your right middle finger, six is your right ring finger. Voice commands are now active. Ab isne mere ko bataya mera kaun si ungli pe kaun sa flex sensor hai aur ab isne mere ko bola ki voice commands active hain. Matlab main ab isko bol sakti hoon ya toh learning mode ya toh practice mode shuru karne ke liye. Toh learning mode se shuru karte hain. Learning mode. Let's start with letter A. Fold one for A. Ab usne bola ki woh learning mode pe switch ho gaya. Ab usne bola A ke liye first finger fold karo. Toh it is correct. Now try B. Fold one and two. Jaise hi mera koi sahi hota hai, pehle toh buzz aata hai ki maine koi input diya hai. Doosra mera vibrate hota hai aur mere ko meri screen batayegi ki maine sahi kara ki nahi kara. Ab jaise maine A sahi kara tha toh usne mere ko bataya very good. Ab agle pe move karte hain aur uska mere ko number batayega. Jaise ab isne bola B, one and two. It is correct. Now try C. Fold one and four. It is correct. Now try D. Fold one, four and five. It is incorrect. Please fold one, four and five for D. Ab jaise hi maine D galat kara usne mere ko bataya ki aapne galat kara hai aur phir se mere ko batayega ki kaun se number par kaun si finger fold karni hai taaki D sahi ho. Saath hi saath jab main kar rahi hoon meri ek progress report ban rahi hai ki kaun sa sahi hai, kaun sa galat hai aur mere kaun se letter pe kaun sa galat hua hai. Ab learning mode ke saath-saath hamare paas ek practice mode bhi hai. Learning mode pe jaise hamare ko pehle letters bata rahe the. Practice mode par ek word aayega. Switching to practice mode. Practice word bat. B A T start with one and two for B. Ab usne mere ko ek word diya bat. Usne mere ko bataya B A T aur kaise shuru karna hai. Toh B... A... Correct. Try again. Practice word bad. B A... T. Start with one and two for B. B... A... T. Excellent. Completed bad. Practice word cat. C A... T. Start with one and four for C. Ab jaise hi mera koi word sahi ho jaata hai woh mere ko batayega excellent, aapka word poora sahi ho gaya aur doosre word pe move on kar jaayega. Ab hamare is software pe ek option aur hai. Shikshakon ke liye jo educators hain. Ek button hai download test data. Woh button use karke woh student ne kahan-kahan galti kari hai, kahan sahi

kara hai, kitni jaldi dabaya hai ya kaun-kaun se letter pe unki zyada frequently galtiyan aa rahi thi, woh dekh sakte hain. Jaise aapne Mania ko glove use karte hue dekha. We ensure the entire system while using and while learning is very accessible. Yaani agar main beginner Braille learner hoon ya phir even though main agar pehli baar apna poora system use kar raha hoon toh mujhe aisi dikkat mehsoos na ho ki oh mujhe abhi yeh task karne ke liye kya karna padega ya phir mujhe darr na lage ki agar mujhe yeh karna hai toh main abhi karoon kya kyunki I am already lacking vision. Mere dekhne ki kshamta already bahut kam hai. Toh I need to ensure ki I can do all of these tasks. Main yeh saare kaam kar sakta hoon bina external madad liye. Haan, humne instructor website banaya toh hai lekin woh instructor ko jaanne ke, instructor ke liye hai taaki woh jaan sake mujhe mere user ya mere student ko dikkat kahan par mehsoos ho rahi hai. It is not for instructor to come and help. Hamara poora system self-sufficient hai. Yaani as mentioned I, mujhe koi external help ki zaroorat nahi hai. Meri saari zarooratein yahin pe poori ho rahi hai. Agar mujhe mode switch karna hai. Main voice command de dunga ki switch to practice mode, learning mode or repeat. Agar mujhe koi word repeat karana hai ya koi command, instruction repeat karana hai. Ya phir I can just use a mouse and I can switch modes. If I am partially visioned. It is an exception if I am completely not visioned. Not just that, humne ensure kiya hai ki cognitive load ekdam minimal ho. Aapne dekha hi hoga ki hamara interface bahut hi simple aur bahut hi skeletal structure pe hai. Kul mila ke hamare do hi buttons hain. Ek hai glove se connect karne ke liye aur ek hai mode switch karne ke liye. Aur woh mode bhi main voice command se switch kar sakta hoon. Main apne interface ko bol sakta hoon ki learning mode ya practice mode ya repeat to do so and so commands. Practice mode mein woh practice mode pe switch hota hai. Learning mode pe learning mode pe switch hoga. And repeat pe woh previous instruction ko repeat karega in case mujhe sunai na diya ho ya phir I am still confused ki mera system bola kya? Toh main repeat bol sakta hoon and the system will repeat the instruction. Yahi nahi aapne dekha hoga graphically and visually hamara interface bahut hi simple hai. Aisa kyun? Kyunki jo instructors hain, we are taking into consideration ki agar mere instructor ko koi prior technical background na ho. Haan, hum bahut saare buttons add kar sakte the ki yeh instructor ka login hua. Yeh instructor ke liye separate section hi ho gaya. We could have done that. Lekin humne yeh kiya nahi taaki we can ensure ki hamara poora system simple rahe and to the point rahe. Insert ke paas do graphs honge dekhne ke liye. Ek hai progress rate jo bolega ki meri accuracy har attempt ke saath badh rahi hai ya ghat rahi hai. Agar ghat rahi hai toh woh kahan pe ghat rahi hai. Aur yeh jaanne ke liye ki kis had tak meri accuracy gir rahi hai. Humne add kiya hai error heat map. Error heat map mujhe batata hai ki koi input ya koi entry ke liye meri galti kahan ho rahi hai aur kitne baar mujhe woh karna pad raha hai. Tab jaake mera woh entry theek ho raha hai. Aapne dekha hoga ki jab Mania ne galat entry daali tab mera ek error heat map generate ho gaya tha with red bar charts. Woh mujhe bata raha hai ki mujhe woh alphabet ke liye kitni baar entry deni padi tab jaake mera sahi hua. Jab mera session khatam hota hai, ek report generate hota hai jo mujhe bolta hai ki meri accuracy kitni thi? Meri final error rate kitni thi? Meri user competency kitni thi? Yeh mera instructor use kar sakta hai to understand the student better. Mera instructor dekhega ki haan mere student ko yahan-yahan difficulty face ho rahi hai.

Instructor dekh payega ki mere student ko kahan-kahan difficulty face ho rahi hai aur he and he can act upon it. The next session he or she can help them out ya phir hamara khud ka interface hi the machine model running behind suggest and assess them ki haan agar mere is alphabet pe zyada dikkat thi toh I will suggest more of those alphabets taaki mera student us pe adapt ho jaaye, adapt ho jaaye. HCI ke key principles bahut important hote hain throughout your product development phase. Throughout the session aapne bahut saare terms sune honge HCI ke. Inclusivity, accessibility and cognitive load, what not. But it's important ki hum yeh sirf use na karein but we also act upon it throughout the product development phase. Agar main koi product develop kar raha hoon mere user ke liye be it my disabled users or users of any spectrum. Mujhe yeh bahut khaas karke dhyan rakhna hota hai ki yeh mere user ke liye easy to use ho. Hum phone switch karte hain. Humne keypad phone se touch screen phone pe switch kiya. Kyun? Kyunki woh hamare liye almost easy tha use karna. Keypad haan mujhe sensory feedback toh de raha hai lekin mera touch screen phone ka screen bada hai aur mujhe woh touch ki feeling zyada easy lagti hai use karne mein. Similarly here as well. Mujhe jab glove pehnaya jaata hai, I feel everything is under my control. Mujhe woh better hota hai than learning on a normal traditional truth. We acted upon multiple HR principles and made sure they are our priority. Yaani hum un principles ka khaas se dhyan rakhein jo users ko directly hit hoti hai. I hope hamara session aapke liye helpful tha. Thank you. [Sangeet]