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Project Proposal

- ***The problem to be solved:***

Item	Description
Problem domain	Education, Accessibility, and Interaction design
Problem description	Traditional 2D educational cutaway diagrams are static, limited, and non-interactive.
Importance of the problem	Multi-modal educational material is critical for increasing both accessibility and exposure to learning opportunities. Extending the modality of educational diagrams to include interactivity and personalizing experiences could greatly benefit learning outcomes, especially in heavily fact-retentive knowledge domains.

- ***The target users:***

Item	Description
Domain Expertise	Some to little basic conceptual knowledge of diagram domain(s).
Technology Expertise	Some prior technology experience, with little to no prior VR experience.
Physical and mental capabilities	At least some arm and hand motor function. At most slight visual impairment.

- ***Why is VR a good medium to solve this problem?***
    - VR is a good medium to solve this problem as it provides students an opportunity to combat the inherent difficulty of fact retention with immersive, memorable learning experiences driven by personal agency and self-efficacy due to VR's multi-sensory and interactive nature. Traditional video games employed to this task would be less effective, as that medium lacks the opportunity to engage one's spatial awareness in conjunction with their sense of proprioception to maximize engagement through creative input and novel multi-sensory feedback.

- ***A high-level description of the solution:***
    - This VR application will help users study different science diagrams, while incorporating small game elements. The user may be shown an unlabelled or disorganized 3D diagram, such as one of a brain, be prompted to physically manipulate and rotate parts into proper structure, label the corresponding part, or physically inspect the part(s) in response to some domain questions.