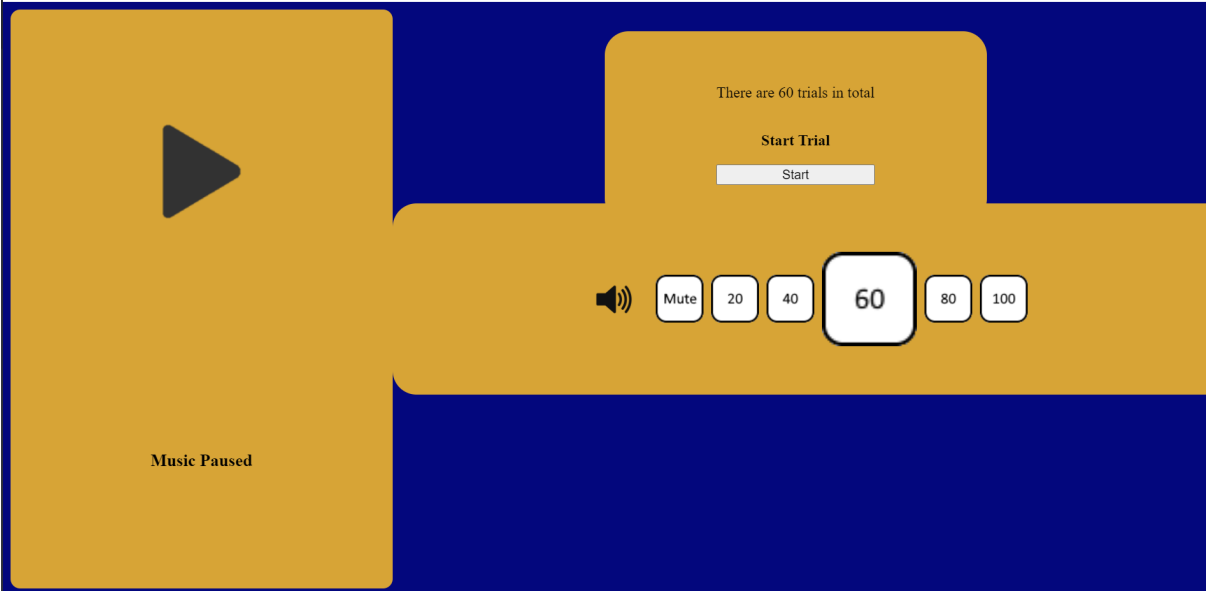


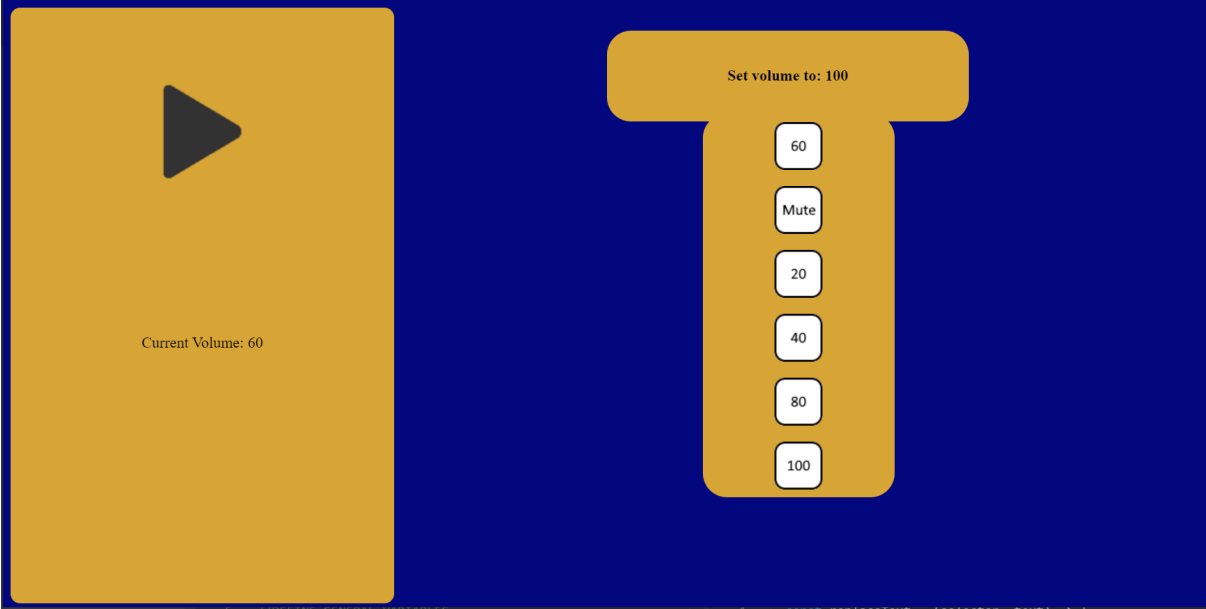
COMPUTER SCIENCE 341 PROJECT ASSIGNMENT 6 FINAL REPORT

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TECHNIQUE 1 - EXPANDING TARGETS



TECHNIQUE 2 - ORDER BY FREQUENCY



For this project, there are two pieces of information that we need to obtain. Accuracy of selections, and time taken to select. For our accuracy, it is easy to simply take the average. For Technique 1, the average is 99.6%, as only a single mistake overall was made. For Technique 2, the actual accuracy was very similar, but the code did not actually adjust the selected icon with its changed position, meaning the recorded average accuracy was 12.4%, while the real average accuracy was approximately 90%. We can see from this that accuracy-wise, Technique 1 is more reliable.

For the time taken, we have to utilise a two-tailed t-test to determine a hypothesis. For this, we have the following information:

Variable	Formula	Value
Population 1	Trials of Technique 1	
Population 2	Trials of Technique 2	
Research Hypothesis (H_R)	The mean time of Technique 1 is significantly different than the mean time of Technique 2.	
Null Hypothesis (H_0)	The mean times of Technique 1 and Technique 2 are the same.	
N (number of participants)	5	
M (mean difference score)	Sum difference / N	291.404
μ	0 (by definition, no difference)	
S^2	$\Sigma(X - M)^2 / (N-1)$	31845.473
μ_M	μ	0
S_M^2	S^2 / N	6369.0946
S_M	$\text{sqrt}(S_M^2)$	79.807
df (degrees of freedom)	(N-1)	4
Significance	5% (0.05)	
Cutoff	Found using the t-table	± 2.776
t-score	$(M - \mu) / S_M$	3.651

Compared with our cutoff value of ± 2.776 , our t-score of 3.651 is more extreme than the cutoff and ergo we can come to the conclusion that we can interpret the finding that the mean times of Technique 1 are different than the mean times of Technique 2. With this, we can reject the null hypothesis.