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5/2/24

CSE 4500

Iterative Report

1. **Wrapper or helper function**

Christopher Cao:

https://drive.google.com/file/d/1sx68hNSaMO0lhA11s-ua6WHQypwcNfDD/view?usp=drive_link

https://drive.google.com/file/d/1Nwg4hoip_qBVDsZwOQx4Bzf4FzH70re0/view?usp=drive_link

Steven Peralta:

https://drive.google.com/file/d/1Fob4Fq2HN0CyYrTnwFDucyopY9hBkVp_/view?usp=sharing

https://drive.google.com/file/d/1lVLq8yYv4NSskGdSr6HhYKqaEJ7X36lX/view?usp=drive_link

https://drive.google.com/file/d/1OB6BEMYGfsYfLLPDAJ-TB90WvcWzY1gn/view?usp=drive_link

https://drive.google.com/file/d/11RimlD0Z9BTqFedQwJws0QzhlK-lp0Lp/view?usp=sharing

Reed Stallman:

https://drive.google.com/file/d/1818aS2i3Pat0qlfNQCzFt_5NoruHkO5M/view?usp=drive_link

Daniel Mesones:

https://drive.google.com/file/d/11376ZMrHJ1a1bkdX6zMbN0HE5wHeE-f5/view?usp=drive_link

2. **A/B testing fundamentals:**

Metrics-

Primary Metric: Presence Time (in seconds)

- *Easy to understand* (Higher time means greater success)
- *Simple to compute* (10 seconds added for every keyword, image, link, etc detected by user)
- *Actionable by team* (It is of practical use to track the amount of seconds the user is on the website)
- *Reliable to produce* (Can rerun metric_tracker.py to continuously obtain presence time(s))

Secondary/Guardrail Metrics:

- *Keywords* (Specifically targets what a user may be searching)
- *Images* (Visually appealing and allows the user to further explore the website increasing the presence time)
- *Links* (Gives the user a further sense of exploration to see what is beyond the website)

Sample testing-

Selected sampling technique: User Randomization

What User Randomization means is that it is assigned variants based on the experiment's eligibility criteria. So in our case we select users randomly and assign half of them for the control and test variants of our website/About Me Page.

3. **Database:**

Iteration 1

iteration_1

	_id ObjectId	Iteration Number Int32	Control or Test Group Str…	User File Name String	Presence Time (Seconds) D…
1	ObjectId('663badc893f388d…	1	"Test"	"user55"	97.009507417678 83
2	ObjectId('663badfef7016da…	1	"Test"	"user31"	10.183910131454468
3	ObjectId('663bae323dd292a…	1	"Test"	"user33"	9.00828766822815
4	ObjectId('663bae5633381c0…	1	"Test"	"user44"	0.027001142501831055
5	ObjectId('663baec810de284…	1	"Test"	"user48"	60.13414120674133
6	ObjectId('663d2d40f0abaef…	1	"Control"	"user34"	10.018249273300171
7	ObjectId('663d2da3407ad6e…	1	"Control"	"user35"	60.152475118637085
8	ObjectId('663d2efe35eebee…	1	"Control"	"user40"	0.0906376838684082
9	ObjectId('663d2f1b0a993c3…	1	"Control"	"user41"	0.13908100128173828
10	ObjectId('663d2f3d144313c…	1	"Control"	"user42"	0.06009483337402344
11	ObjectId('663d2f94b73d753…	1	"Control"	"user57"	4.897127866744995
12	ObjectId('663d2fbf6d4a4c0…	1	"Control"	"user59"	10.083250522613525
13	ObjectId('663d2feb1650ae6…	1	"Control"	"user60"	10.01737666130066

Last Iteration

iteration_3

	_id ObjectId	Iteration Number Int32	Control or Test Group Str…	User File Name String	Presence Time (Seconds) D…
1	ObjectId('663d3a5746352ef…	3	"Control"	"user34"	10.016003131866455
2	ObjectId('663d3ac8027be21…	3	"Control"	"user35"	80.10252475738525
3	ObjectId('663d3ae52779e59…	3	"Control"	"user40"	0.045008182525634766
4	ObjectId('663d3b15ddd61e5…	3	"Control"	"user41"	0.07707357406616211
5	ObjectId('663d3b3dd718d02…	3	"Control"	"user42"	0.02201533317565918
6	ObjectId('663d3ba4189e7fc…	3	"Control"	"user57"	5.209619522094727
7	ObjectId('663d3bdcbf5ea8d…	3	"Control"	"user59"	10.117381811141968
8	ObjectId('663d3c09b48524d…	3	"Control"	"user60"	10.015795230865479
9	ObjectId('663d3c3f1651b12…	3	"Test"	"user31"	10.137332916259766
10	ObjectId('663d3d2fcbac0bd…	3	"Test"	"user33"	11.011067152023315
11	ObjectId('663d3d4c2b3fd67…	3	"Test"	"user44"	0.03598165512084961
12	ObjectId('663d3da9d3888a5…	3	"Test"	"user48"	60.13343167304993
13	ObjectId('663d3e3504eacc7…	3	"Test"	"user55"	108.00943922996521

Control Group:

user34, user35, user36, user40, user41, user42, user49, user50, user51, user52, user56, user57 user58, user59, user60

Test Group:

user31, user32, user33, user37, user38, user39, user43, user44, user45, user46, user47, user48 user53, user54, user55

Nonworking (did not run on metric tracker): user49, user50, user51, user52, user56, user58, user32, user37, user38, user39, user43, user45, user46, user47, user53 user54

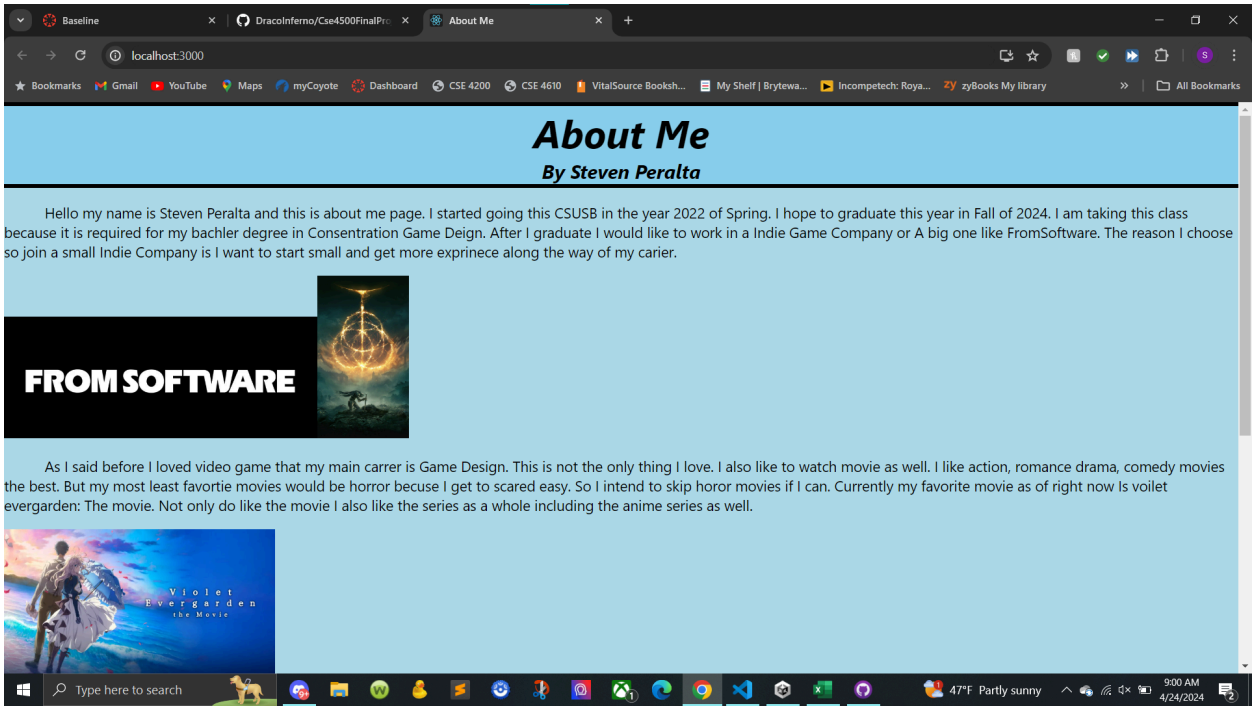
4. **Cycle and iterate (Score = average presence time in seconds):**

Baseline:

Average presence time for control group: 12 seconds

Average presence time for test group: 33 seconds

Both presence times do not match with our hypothesis from the baseline reading because not all users were looking for images but looking for keywords and punctuation marks.

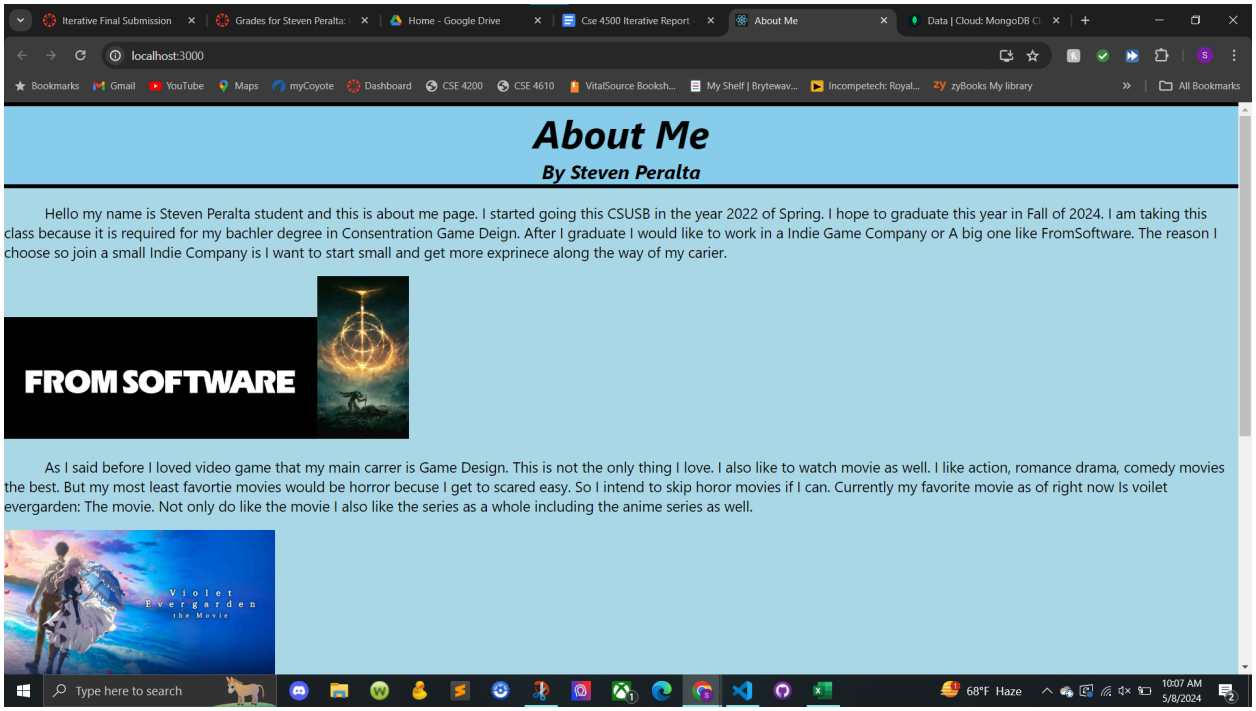


Devise hypothesis for Iteration #1: Picture of website

We believe adding the keyword “student”

Will make users stay at least an additional 10 seconds

Because the target audience of users is students.



Iteration #1: Picture of website and revised hypothesis

Hypothesis 2:

<u>We believe</u> adding 2 images

<u>Will</u> make users stay at least an additional 20 seconds

<u>Because</u> images makes the website more appealing to all users who are viewing it

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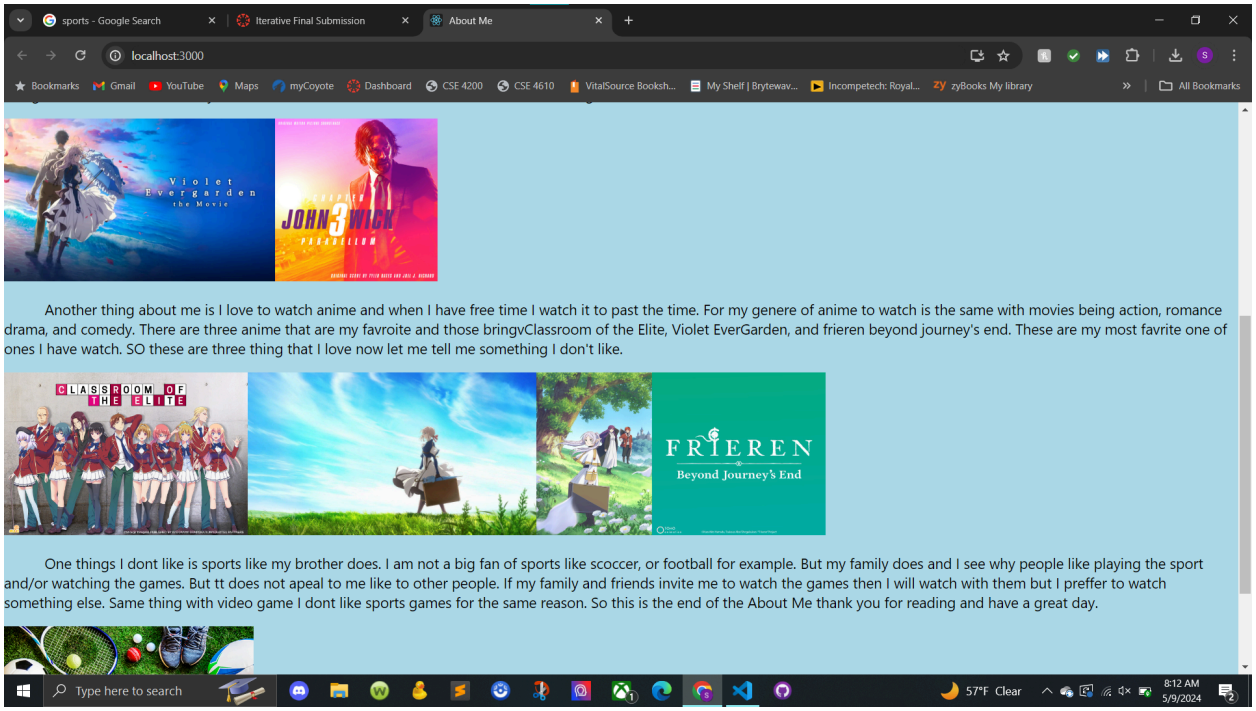

Iteration #2: Picture of website and revised hypothesis

Hypothesis 3:

<u>We believe</u> adding the keywords “about” and “name”

<u>Will</u> make users stay an additional 20 seconds

<u>Because</u> the target audience is wanting to find out the “about me” information of other students

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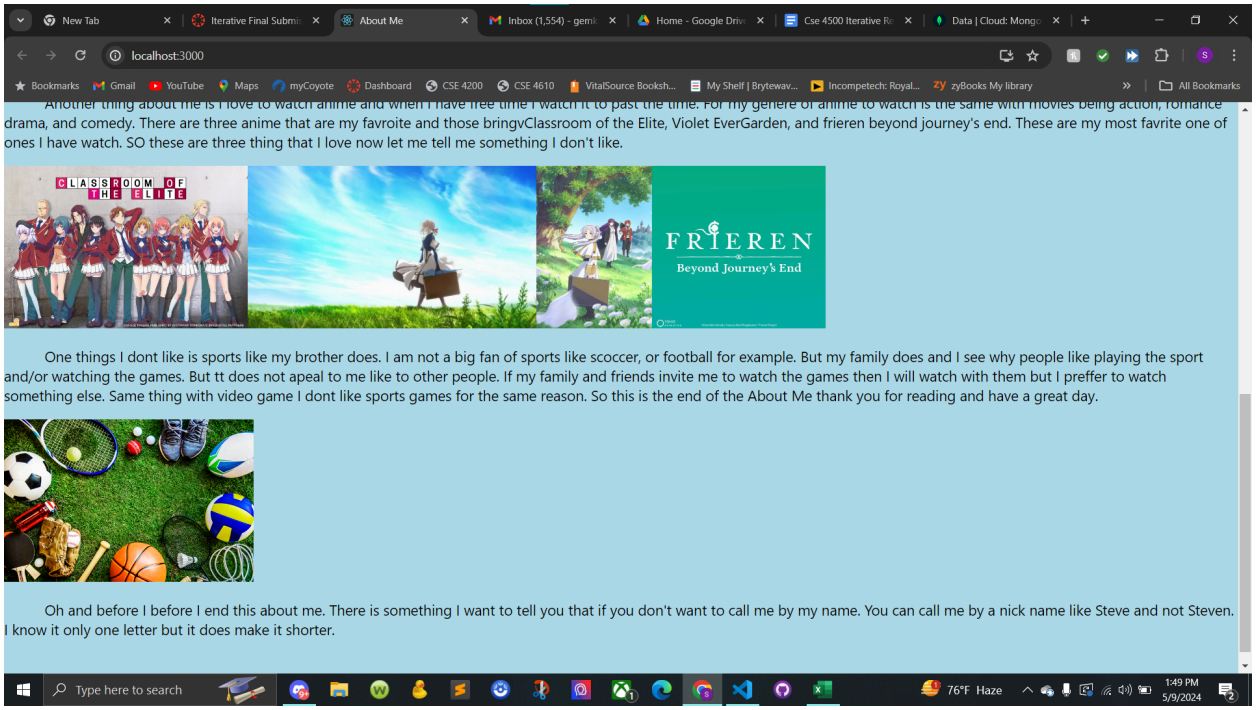
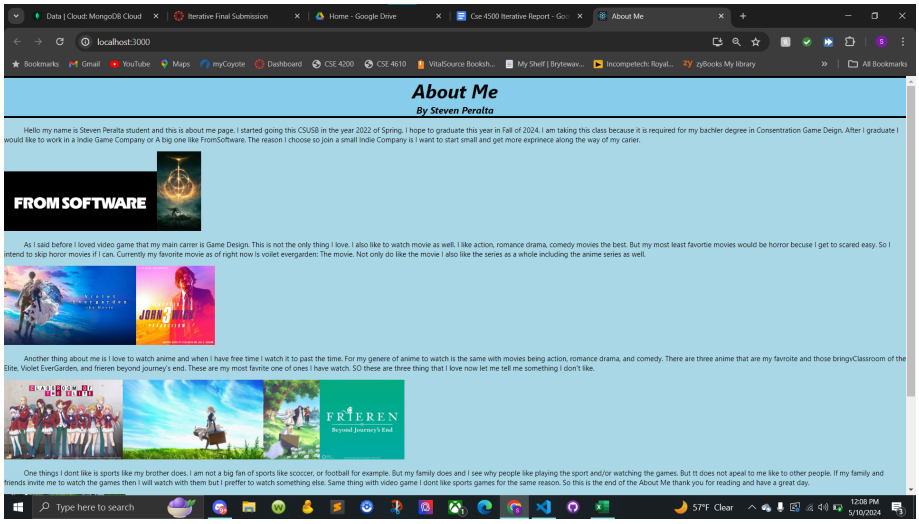


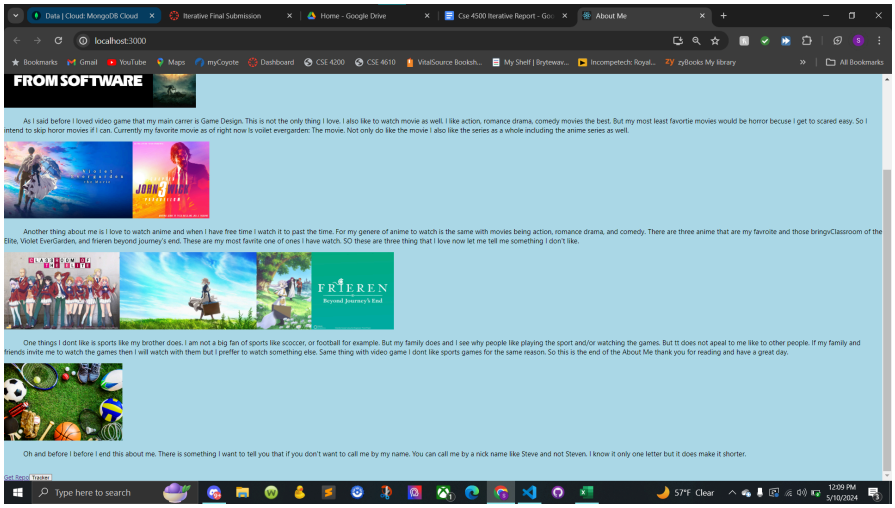
Iteration #3:

Final Iteration: Run your Iteration #3 website on the full population.

How does this average presence time compare with the previous time? Explain why or why there is not a difference:

Our presence time is larger than the previous time because we used the full population and not half of the population.

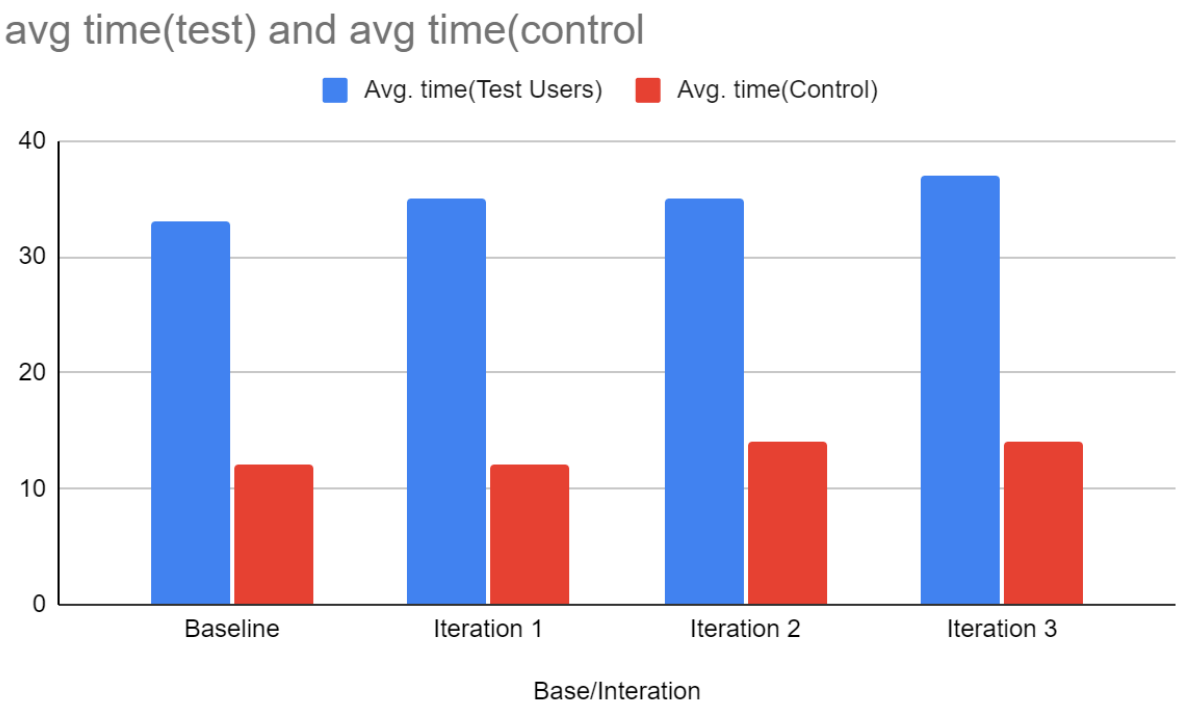




Average presence time on full population: Average Time: 89 seconds

Include picture of website with this presence time

5. <u>Visualize Results:</u>



Through each iteration of our website, the average presence time was successfully increased. The bars on the graph rose after each iteration indicating as such. This was made possible by changing our hypothesis statements based on our findings from

previous iterations. Our hypothesis statement evolved by factoring in the intended audience for our website which was students.