
Content Randomization for Early Math Education

Presented By: Manasi Thakkar
Thomas Sherk

Advisor: Dr. Tam Nguyen
Dr. Mary Fuhs



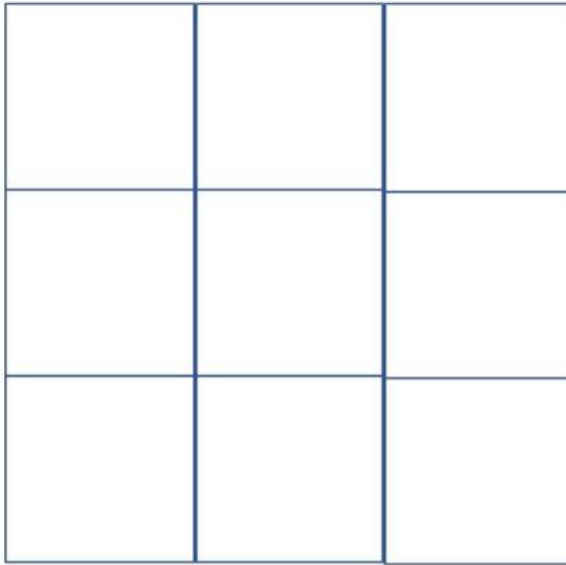
University of
Dayton

What is ZooBook Project

This is an interactive problem solving counting game built using Unity 3D. It has scattered arrangement of animals that are harder to count which helps kids to develop different mental images of quantities.



Object Randomization



Grid-based placement



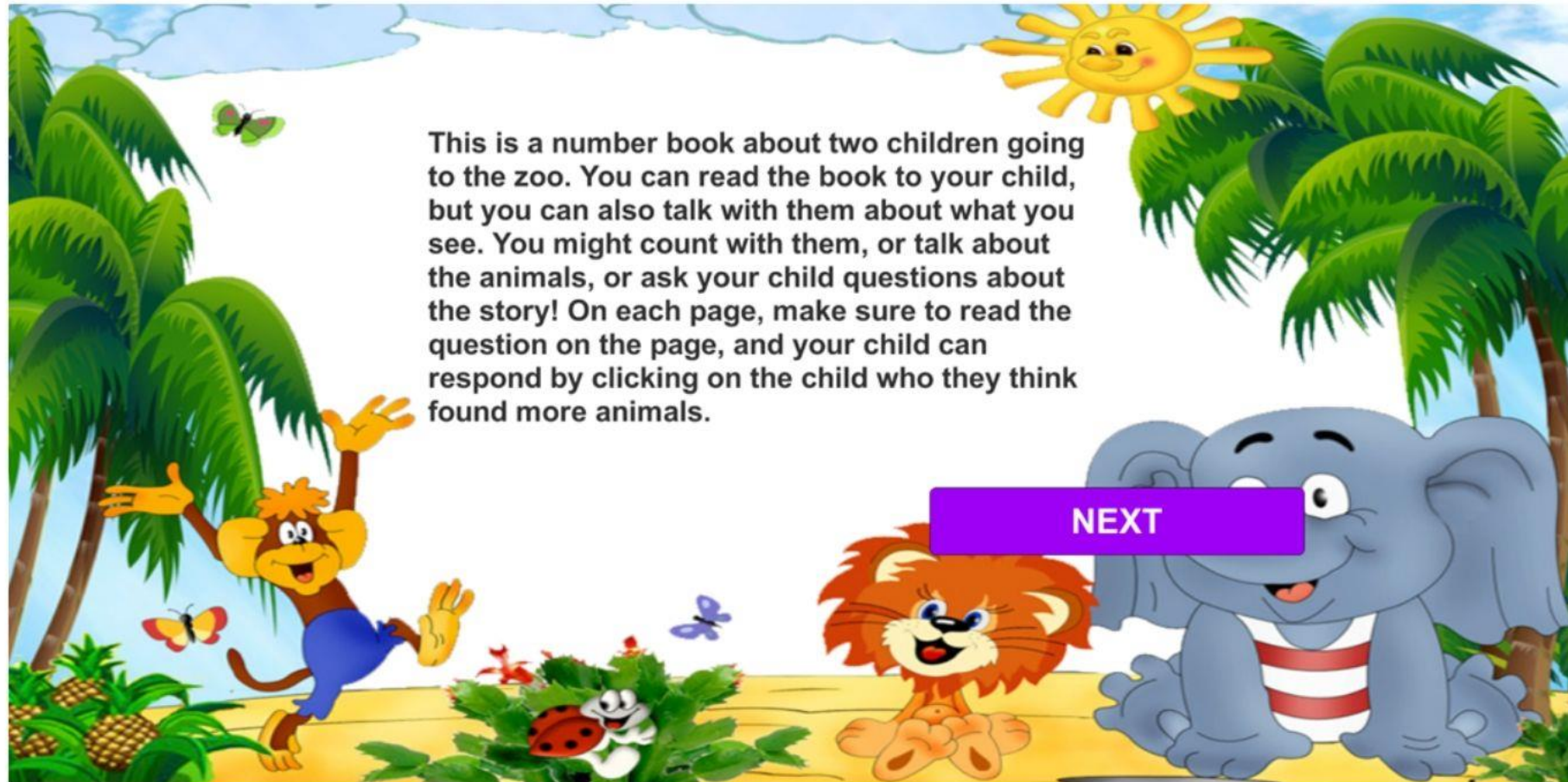
Object cutouts

- Number of objects
- Size of each object
- Placement of each object

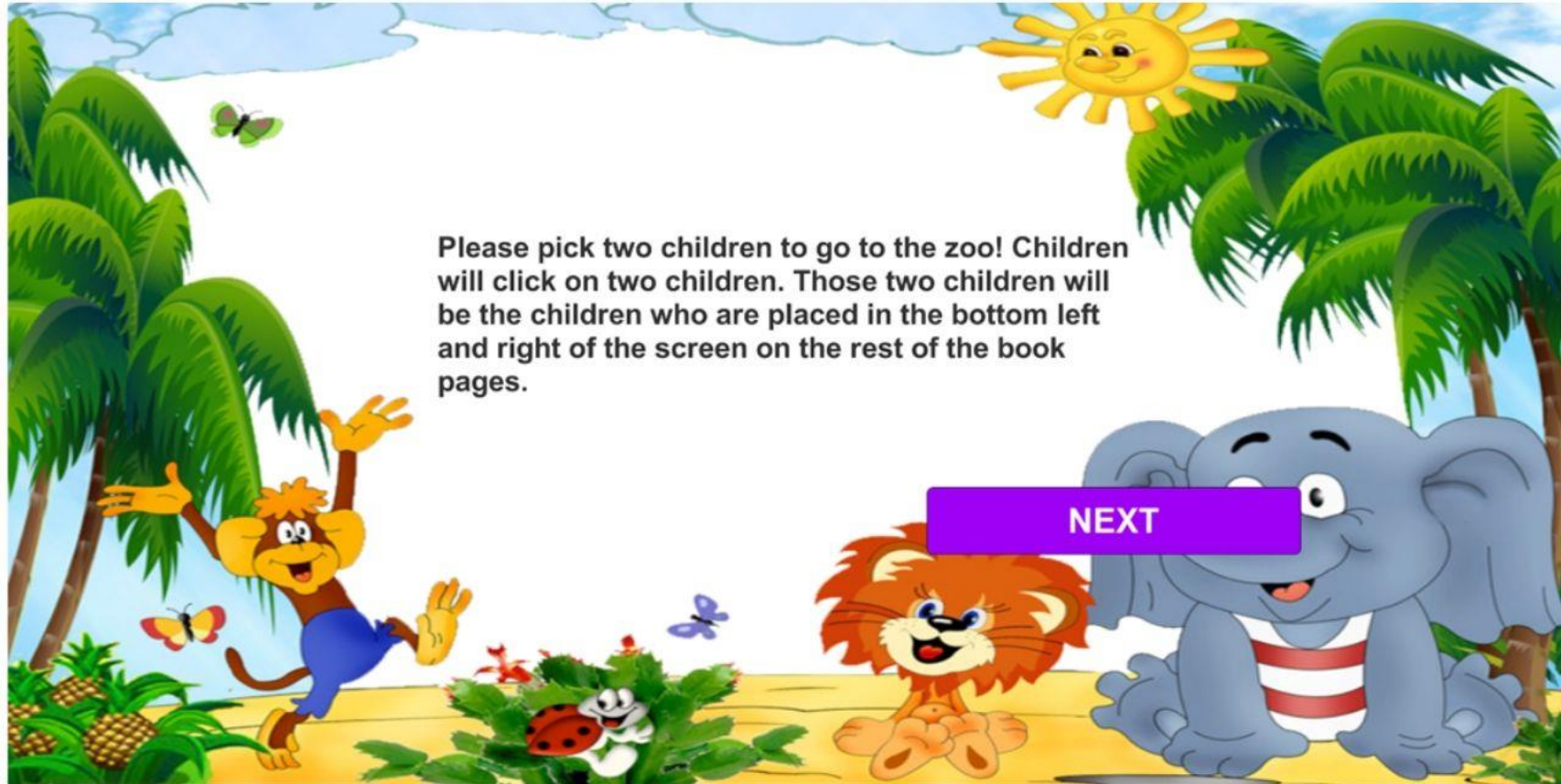
Randomization factors



Screen 1: Instructions



Screen 2: Instructions



Screen 3: Character Selection



Screen 4: Character Selection



Level 1

- The number of animals range from 1 to 5.
- All animals are of same size.
- All animals are of same type on one side.



Level 2

- The number of animals range from 1 to 5.
- All animals are of different size, but the area occupied by the animals on both sides is same.
- All animals are of same type on one side.



Level 3

- The number of animals range from 1 to 5.
- All animals are of different size, but the area occupied by the animals on both sides is same.
- All animals are of different type on one side.



Level 4

- The number of animals range from 1 to 9.
- All animals are of different size, but the area occupied by the animals on both sides is same.
- All animals are of different type on one side.



User feedback

It saves the data in the CSV file and sends it over email.



A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
name	date	gametime	level1	numl1	numr1	correctside	sidechosen	correct/inc	time_taker	level1	numl2	numr2	correctside	sidechosen	correct/inc
Manasi	4/15/2020	64.572265	1	5	2	Left Side	Left Side	Correct	1.8007278	1	3	1	Left Side	Left Side	Correct

THANK YOU

QUESTIONS?

