INTERIOR
LIGHTING
DESIGN AND
INTERACTION
Wan-Ting Huang

01

ABOUT

Lighting is an essential aspect in an interior environment. Without light, an interior enclosure, could not be visually defined and identified. Within light, an interior environment could be clearly defined by the appearance of color, ambience, its spatial size and depth. Light, in a particular intensity, will enable us to visually identify further specific detail characters of materials such as texture, pattern, transparency, glossiness and other visual related characters. Here are seven words regarding interior lighting:

Visibility—Visual cues about the surroundings.

Glare—Excessive light entering the eye from a bright light source.

Uniformity—Consistency which creates harmony.

Illuminance—The amount of light falling on a surface.

Color—The reflection and emission of light which produces different sensations on the eye.

Quality—The measure of excellence.

Quantity—The amount of number.

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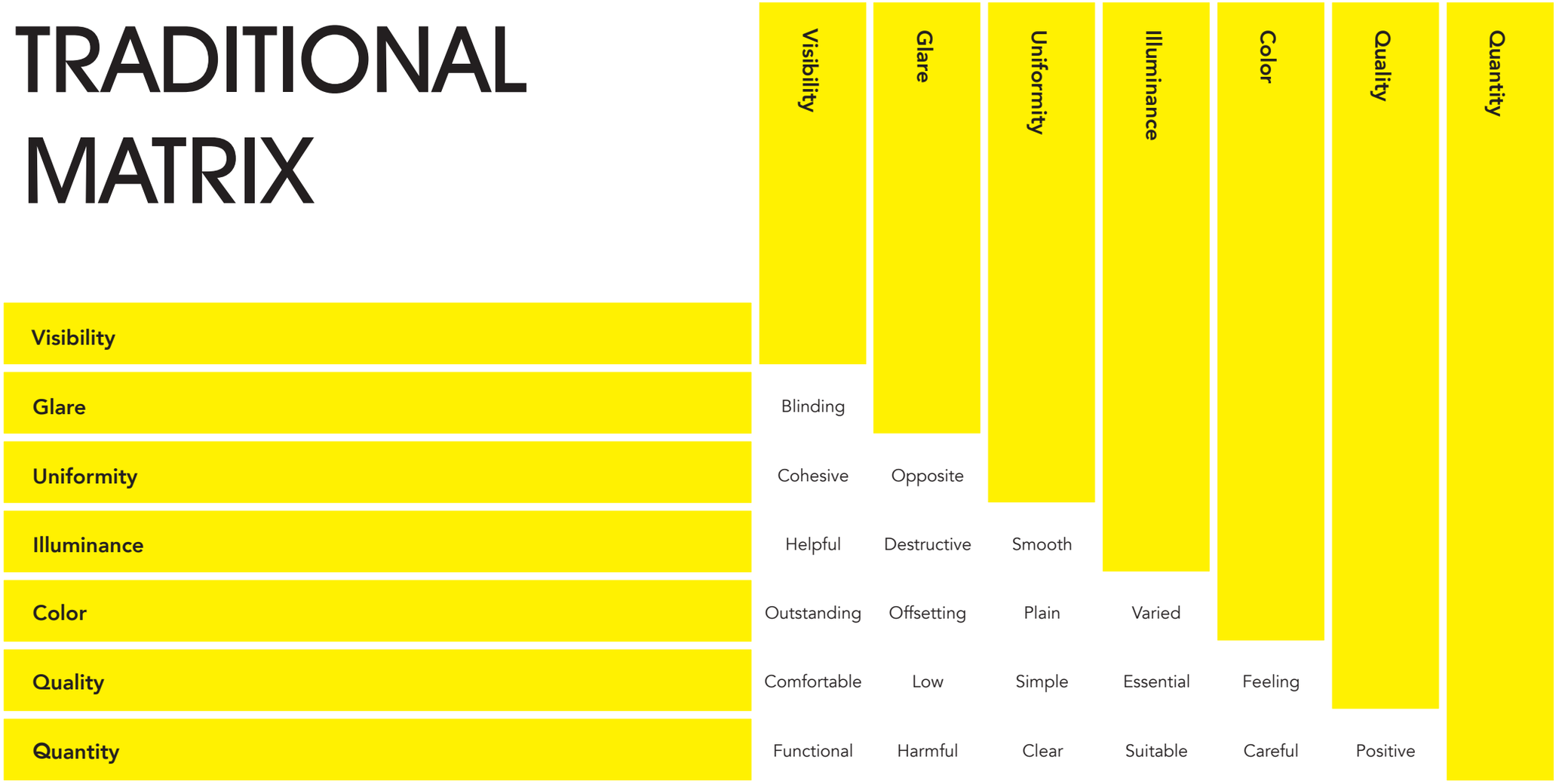
TRADITIONAL MATRIX



INTERACTION MATRIX

	Continuum	Category	Time	Users
Visibility	Visable range	Task visibility Way finding	Tiredness Ages	Eyesight
Glare	Flashiness	Direct / indirect Overhead	Interference	Increase vertical illuminance
Uniformity	Consistency	Flicker or strobing	Stability	Headaches and fatigue
Illuminance	Light level	Photopic / Scotopic / Mesopic	Needs	Sensitivity
Color	Spectrum	Color theory	Timing	Preference
Quality	Durability	Feeling	Over time	Brand image
Quantity	Scale	Number	Constraint	Sales

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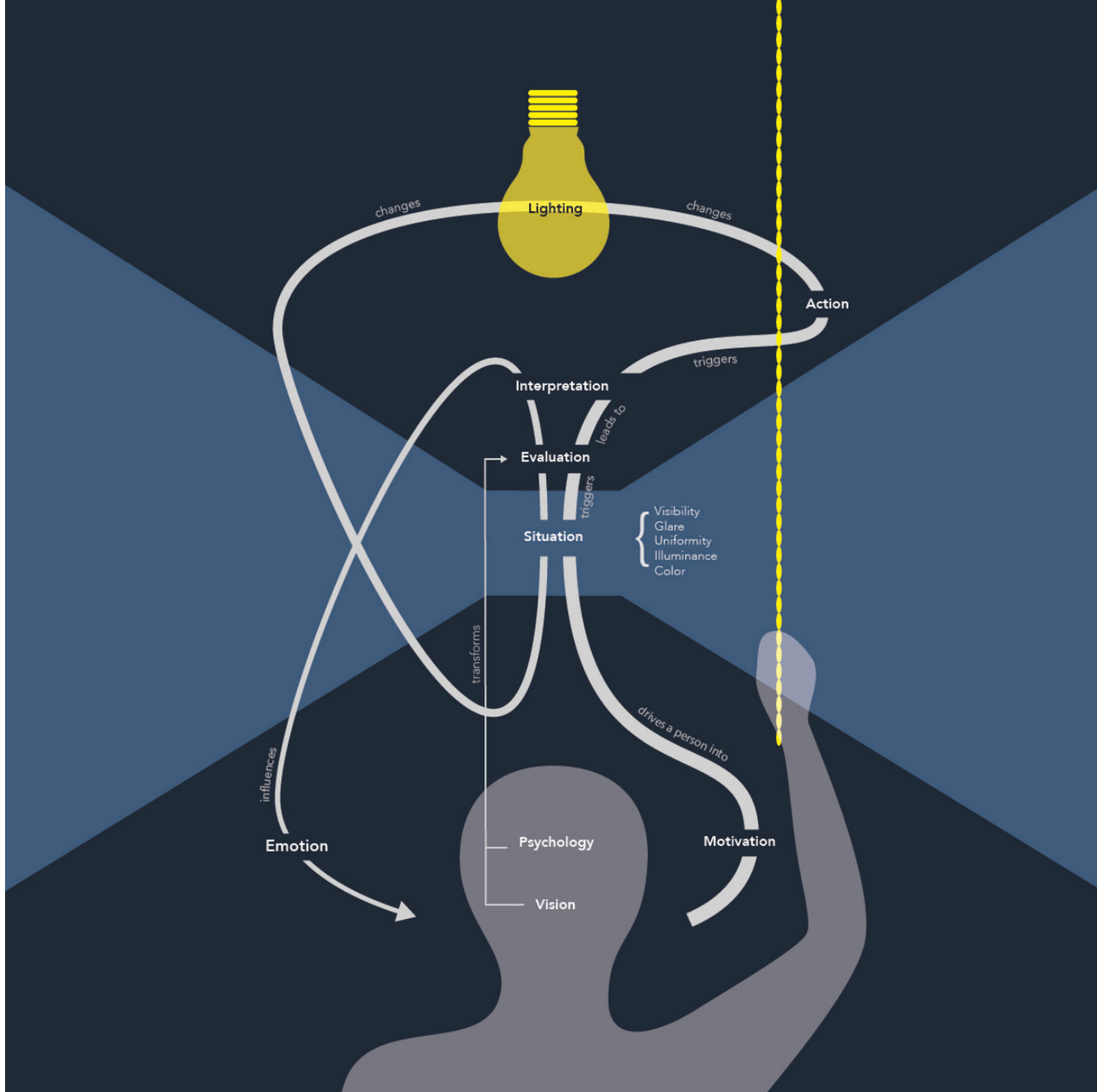
CONCEPT MAP

The concept map shows humans' mental model when they interact with lighting and how lighting affects humans' emotion.



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PERSONAS

The three personas are intended to capture people who care about lighting and what their needs are.

William Hastings

34 yr / Interior Designer

Biography

William is an interior designer who owns his own design agency based in New York. After getting his master degree from a well-known design school, he worked in an interior design studio for 5 years and started his own business after that. He is good at utilizing lighting to transform a space into an atmosphere that his clients want.

Motivation

Embellishing a space design with effective lighting.

"Light is the magical ingredient that makes or breaks a space."

Education level

High school | College | **Master** | Doctor

Salary / year

20K | 40K | 60K

Lighting technical comfort level

I don't use them | Not that comfortable | **Somewhat comfortable** | Very comfortable

Allen Waring

42 yr / Photographer

"The object is nothing, light is everything."

Biography

Allen is a freelance photographer focusing on product photography. He set up a small studio at his apartment in Seattle. His interests in photography developed in high school. After that, he didn't go to college but kept learning the knowledge of photography by himself. His customized service and high quality photos made him get many cases by word of mouth. Finally, he is able to run his own studio and has couple long-term clients.

Motivation

Utilizing proper lighting to create product photos which set it apart from their competitors.

Education level

High school | College | Master | Doctor

Salary / year

20K | 40K | 60K

Lighting technical comfort level

I don't use them | Not that comfortable | Somewhat comfortable | Very comfortable

Rosie Mueller

21 yr / College Student

Biography

Rosie is a sophomore in college majoring in western literatures and also has a part-time job in an on-campus library. She likes to read for long time without interruption, so reading in an environment with good lighting is very important for her. Recently, she moved into a new dormitory and felt that the lighting made her eyes uncomfortable after reading for a while. She wants to improve the quality of lighting by adding lamps to her room.

Motivation

Selecting the right and economical lamps that could make her room a reading-friendly space.

"The quality of lighting affects the mood for my studying."

Education level

High school | College | Master | Doctor

Salary / year

20K | 40K | 60K

Lighting technical comfort level

I don't use them | Not that comfortable | Somewhat comfortable | Very comfortable

06

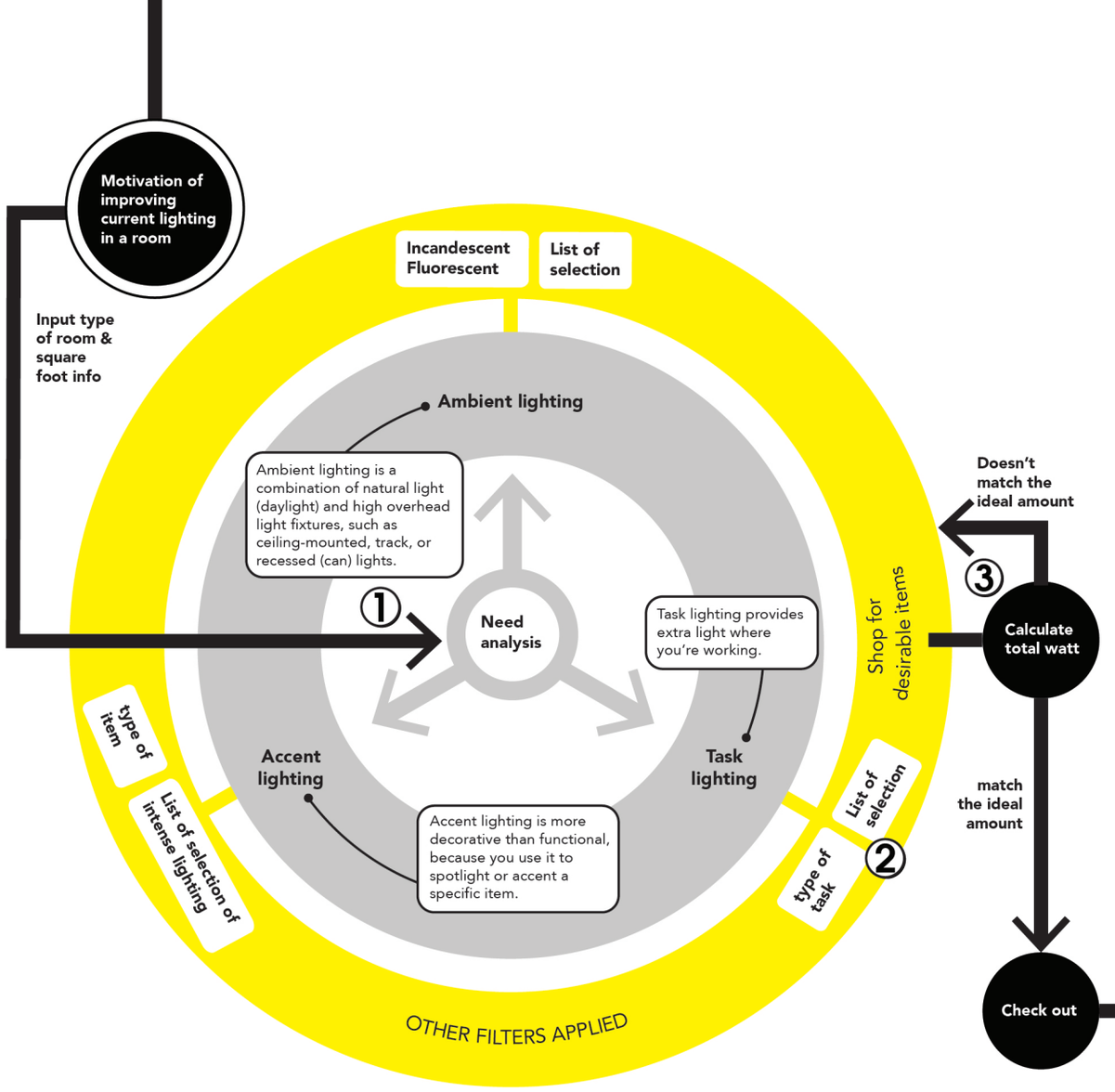
SYSTEM MAP

The map illustrates a recommendation system for users to choose and shop their desirable lighting fixures. The system includes 3 moments based on the persona, Rosie.

① Rosie is interested in buying new lighting fixures. As a college student majoring in western literatures, she has heavier workload of reading and writing than average. She likes to study in her own room in the dorm, but the natural sunlight from the window is blocked by a tall building next to the dorm and the original lighting in the room is not bright enough. She opens the system and inputs information with regard to her needs and the type of her room.

② After narrowing down her needs to task lighting by the system, Rosie starts to input more detailed information about what she wants. She wants lighting that is bright enough but gentle to an extent that she can feel comfortable reading for a long time. As a student covering her living cost by an on-campus part-time job, she can't afford fancy brand item either. She browses through the recommended list the system generates while changing filters to see more options.

③ She decides the fixures she will buy and adds them to her shopping cart. The system calculates the overall results based on the items in her shopping list as well as the room information she inputed earlier. It suggests her to make some adjustment to achieve a more satisfying results. She takes and ignores some suggestions. Finally, she feels happy about the result and goes into the checkout phase.



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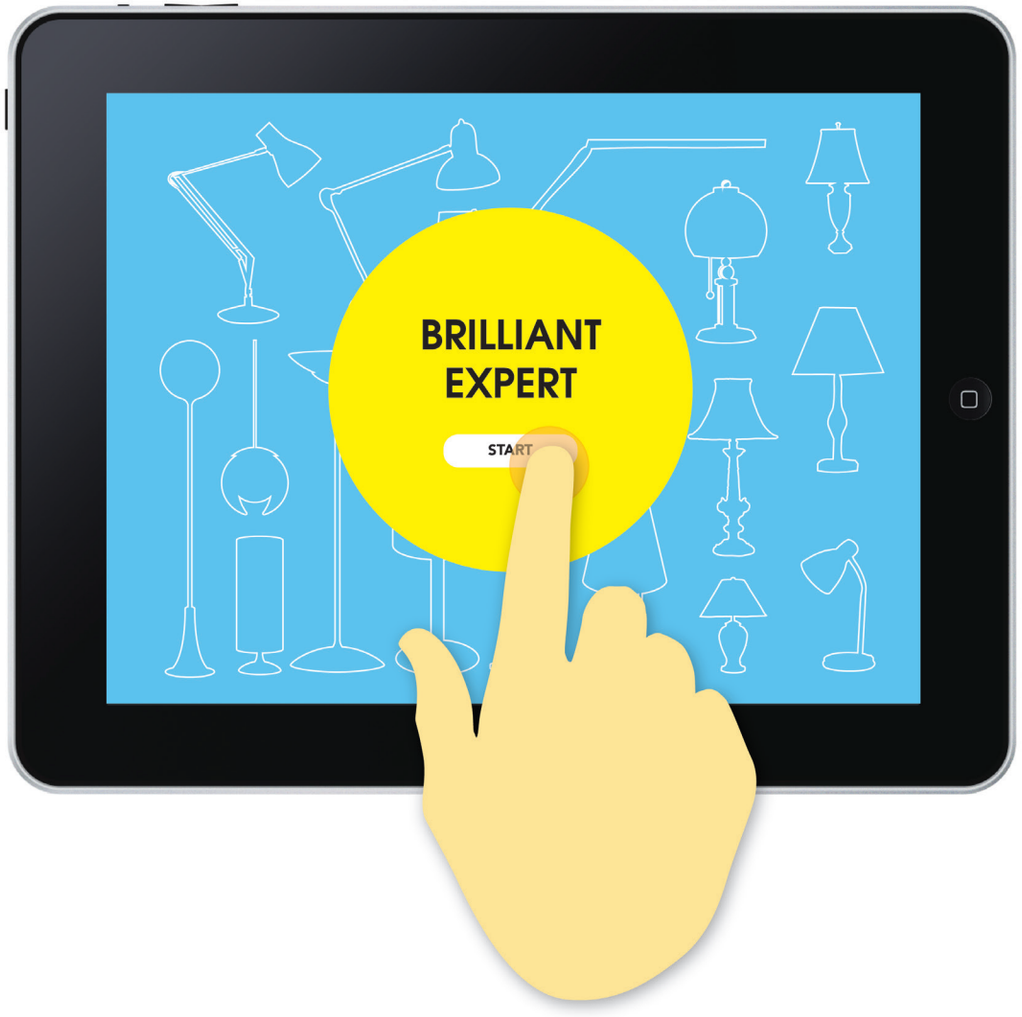
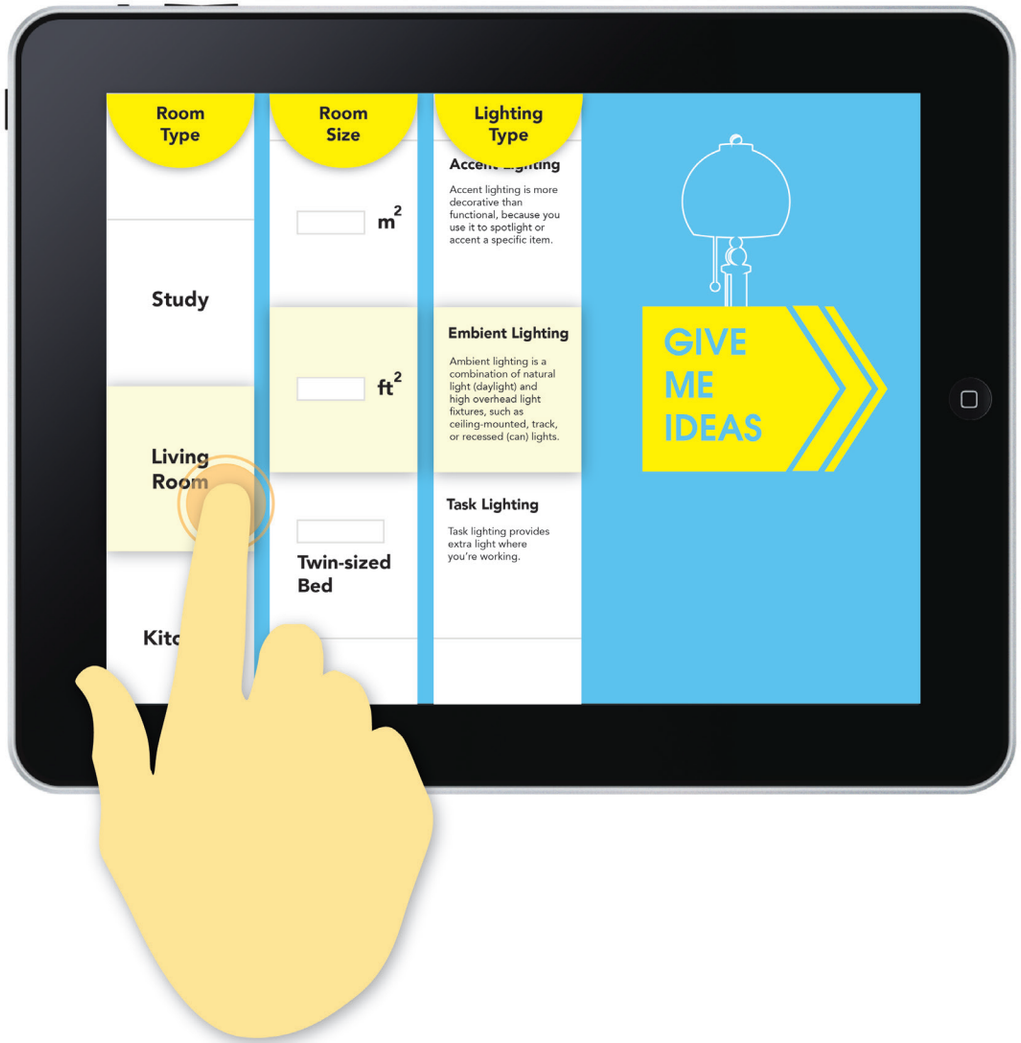
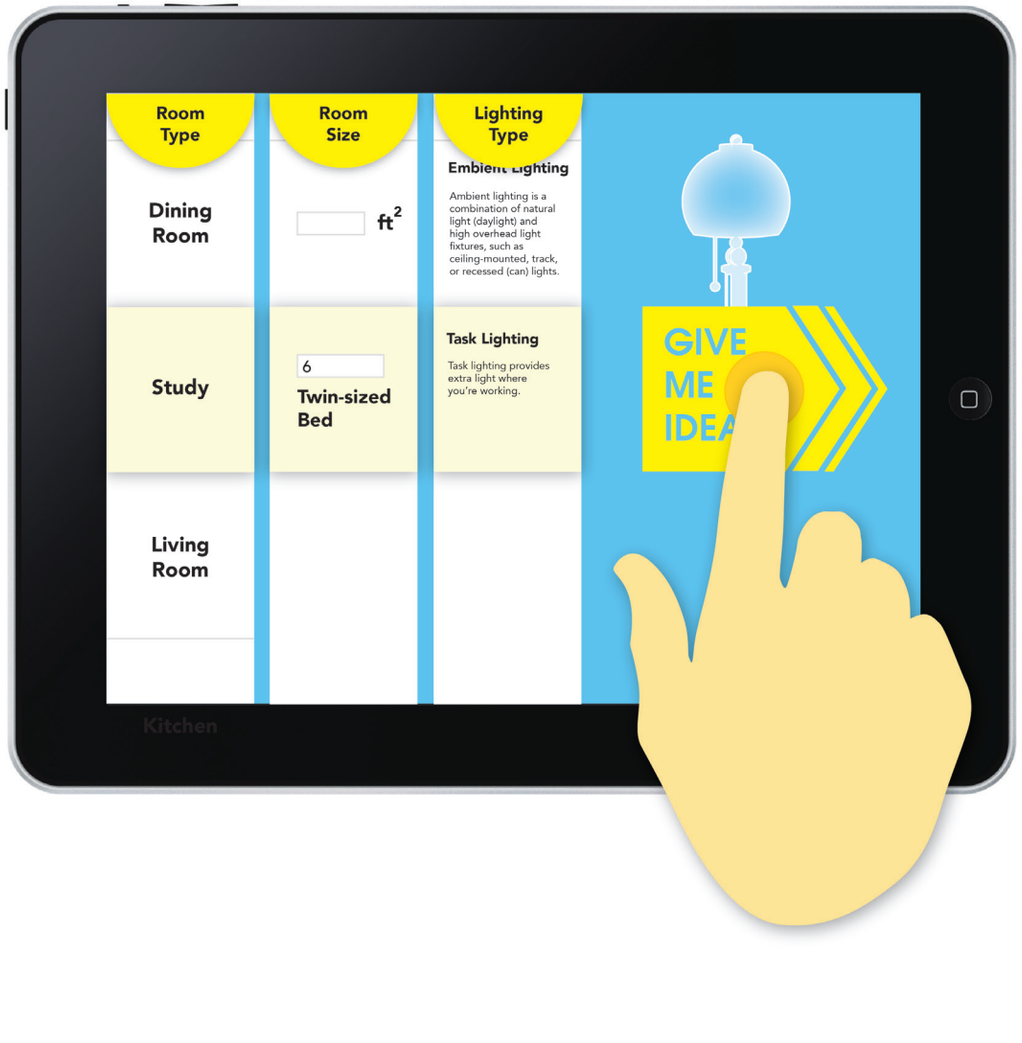
MOMENT 1

Feature

Sliding selectors allowing users to pick and input their needs.




Room Type
Room Size
Lighting Type
Study
Living Room
Kitc
m2
ft2
Twin-sized Bed
Accent lighting is more decorative than functional, because you use it to spotlight or accent a specific item.
Embient Lighting
Ambient lighting is a combination of natural light (daylight) and high overhead light fixtures, such as ceiling-mounted, track, or recessed (can) lights.
Task Lighting
Task lighting provides extra light where you're working.
GIVE ME IDEAS

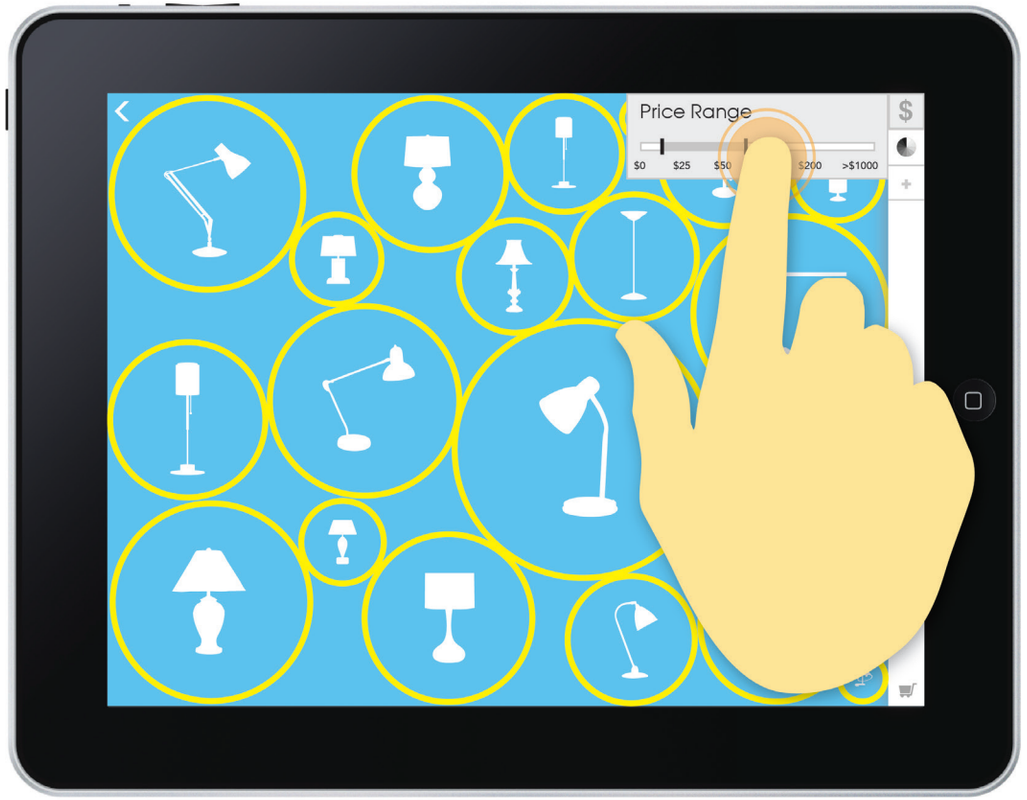

Room Type
Room Size
Lighting Type
Dining Room
Study
Living Room
Kitchen
ft2
6
Twin-sized Bed
Embient Lighting
Ambient lighting is a combination of natural light (daylight) and high overhead light fixtures, such as ceiling-mounted, track, or recessed (can) lights.
Task Lighting
Task lighting provides extra light where you're working.
GIVE ME IDEA

08

MOMENT 2

Feature

Recommendation bubbles with filters that change the size of those bubbles.


Price Range
$0
$25
$50
$200
>$1000

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MOMENT 3

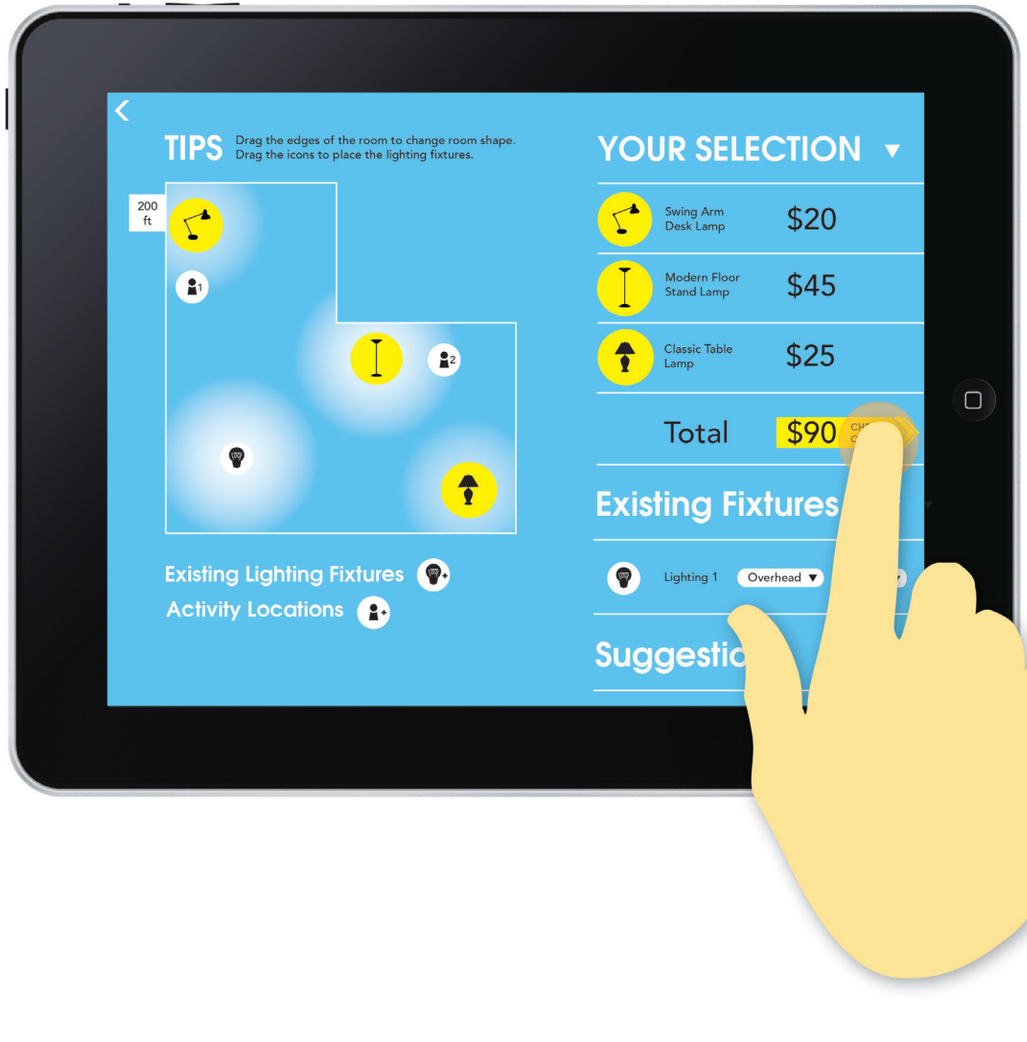
Feature

An interactive system allowing users to personalize their room and get suggestions.

TIPS
Drag the edges of the room to change room shape.
Drag the icons to place the lighting fixtures.
200 ft
YOUR SELECTION
Swing Arm Desk Lamp
$20
Modern Floor Stand Lamp
$45
Total
$65
CHECK OUT
Existing Fixtures
Suggestions

TIPS
Drag the edges of the room to change room shape.
Drag the icons to place the lighting fixtures.
200 ft
YOUR SELECTION
Swing Arm Desk Lamp
$20
Modern Floor Stand Lamp
$45
Total
$65
CHECK OUT
Existing Fixtures
Lighting 1
Overhead
300W
Suggestions
Add one more lamp at the bottom-right corner to decrease shadow.
Adopt

TIPS
Drag the edges of the room to change room shape.
Drag the icons to place the lighting fixtures.
200 ft
Existing Lighting Fixtures
Activity Locations
YOUR SELECTION
Swing Arm Desk Lamp
$20
Modern Floor Stand Lamp
$45
Total
$65
CHECK OUT
Existing Fixtures
Lighting 1
Overhead
300W
Suggestions
Add one more lamp at the bottom-right corner to decrease shadow.


TIPS
Drag the edges of the room to change room shape.
Drag the icons to place the lighting fixtures.
200 ft
Existing Lighting Fixtures
Activity Locations
YOUR SELECTION
Swing Arm Desk Lamp
$20
Modern Floor Stand Lamp
$45
Classic Table Lamp
$25
Total
$90
Existing Fixtures
Lighting 1
Overhead

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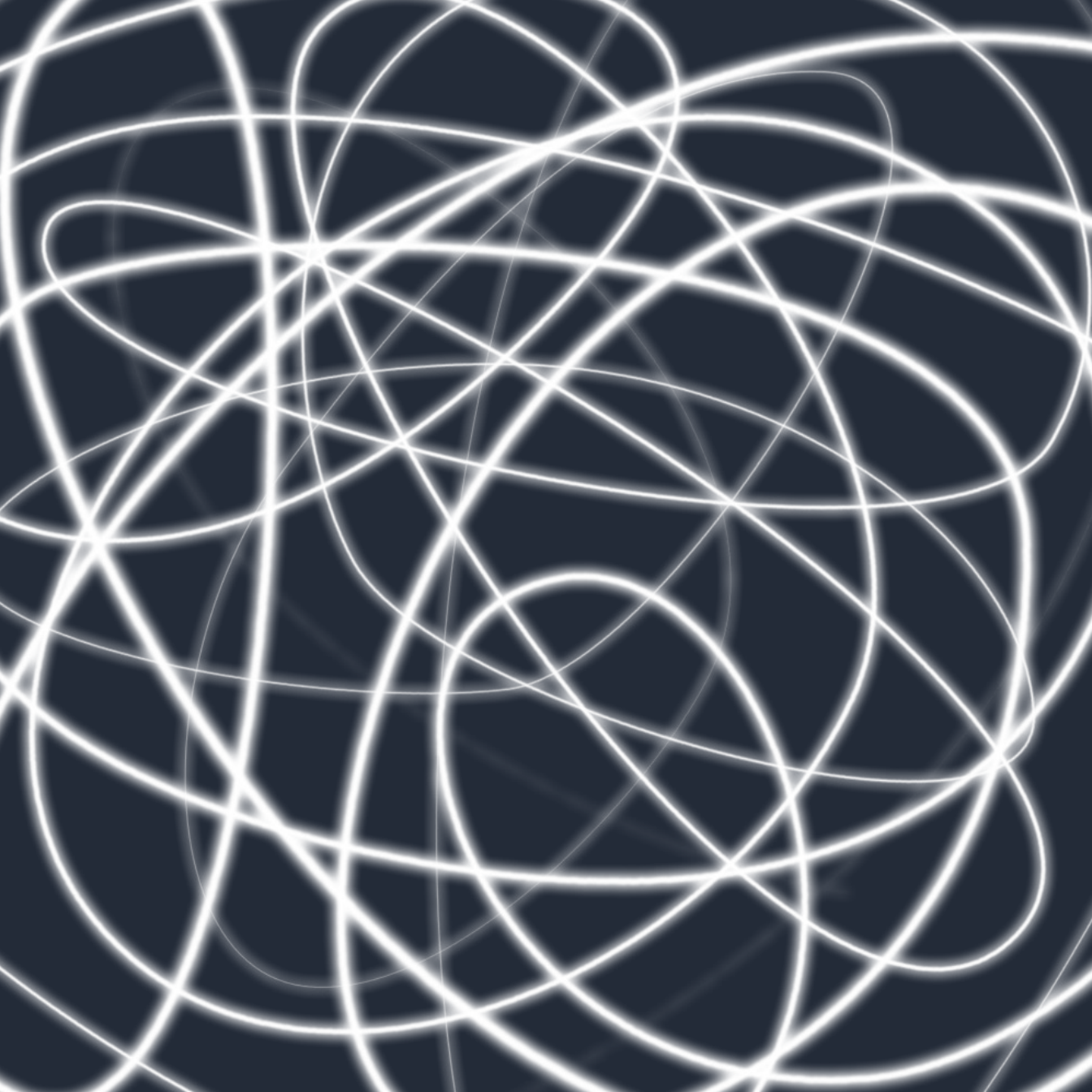
APPENDIX

Complete flow of the three moments is included on the disk.