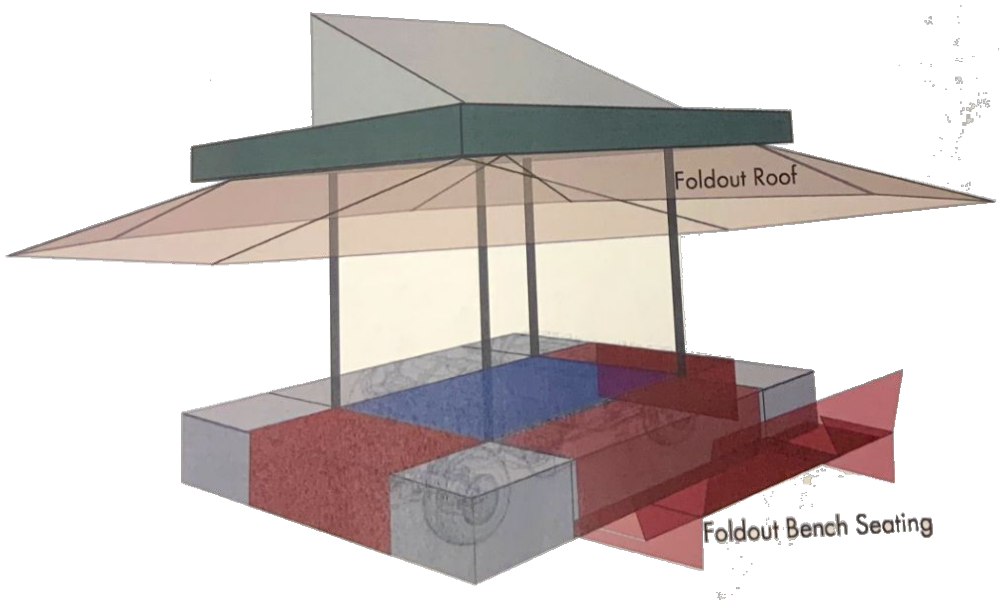
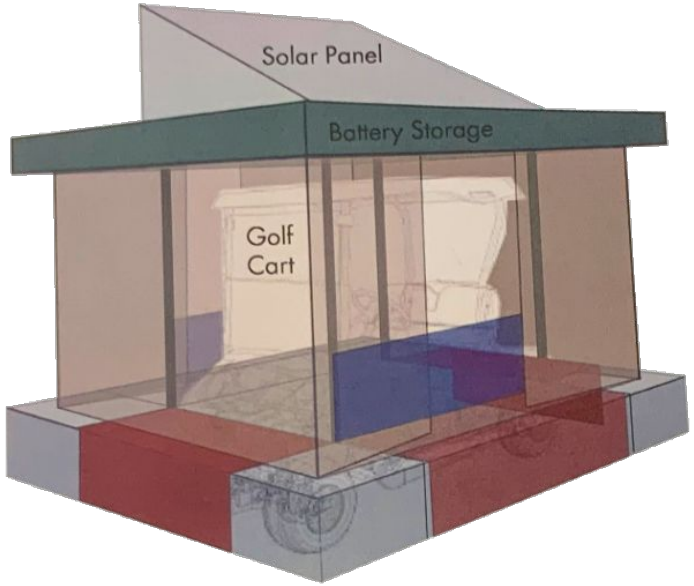
EML4551-2

Pop-Up Classroom



Daziyah Sullivan
Jean Roquebert
Kyle Jackey
Michael Johnson
Valeria Bernal
Yahdid James

30-Sep-19



Project Sponsor and Advisor

Sponsor

Pete Butler

Rashad Aziz

Campus Reimagined,
Florida State University

Advisor

Dr. Shayne McConomy

M. E. Department,
FAMU-FSU College of Engineering

Team Introductions

Jean Roquebert
Software Engineer

Daziyah Sullivan
Project Manager &
Design Engineer

Kyle Jackey
UX Engineer

Yahdid James
Vehicle Engineer

Michael Johnson
Prototype
Developer

Valeria Bernal
Communications &
Testing Engineer

Objective

Campus Reimagined (CRI) seeks to create a new campus experience through a pop-up classroom. The pop-up classroom will provide a collaborative environment for the user that is nomadic and can be ordered online. This device will enable a comfortable interaction between professors and students, faculty, and classmates. It will include all the necessary things so that lectures, meetings, and conversations are pleasant and comfortable enough.

Kyle Jackey

The Need

Providing an opportunity for learning in any environment, changing scenery from the standard classroom setting to promote creativity and collaboration.

Kyle Jackey

The Application

Educational Experience

Military Use

Disaster Relief Efforts

Kyle Jackey

Customer Needs

Kyle Jackey

Methods for Determining Customer Needs

Conducted interviews with our sponsor, students and educational faculty, from a range of levels and majors.

Majors represented include: communications, mechanical engineering, pharmacy, business

Faculty represented include: professors, principals, middle school teachers

Yahdid James

Question/Prompt	Customer Statement	Interpreted Need
Questions to the Sponsor		
As Stated in Project Brief	The popup classroom should provide a collaborative environment that is nomadic and has the capability of being ordered online	1. The layout provides the ability for collaborative input
		2. The product is mobile
		3. The product is integrated with an online platform
What is the required terrain?	Surfaces around campus or in parks	4. The device can maneuver common university terrain
What was the need that prompted this project?	Enabling conversations and valid discussions whenever it is wanted	5. The device is easily accessible to the customers
What is your opinion of the standard classroom setting?	The standard classroom setting is not conducive for critical thinking and creative learning.	6. The device promotes creativity and interactive learning
How many people will be using the device at one time?	From the size of small project groups to the size of group studies or tutoring	7. The device accommodates 10 to 15 people comfortably
What level of mobility is being asked for?	It should be nomadic with off-road preferred, can be driven or pulled initially with autonomous capabilities not being present in the first iteration	8. The device's motion can be manual, with powered or autonomous motion being implemented in later versions
		9. The device can be packed to reduce the hassle of moving across campuses

Yahdid James

Questions to General Customers		
What are the necessary components of a classroom?	Chairs, writing surfaces, some sort of projector that is connected to a computer, whiteboards, easily accessible electrical outlets, Wifi	10. The device includes media displays and seating/tabling options
		11. The device includes connectivity options such as internet access
What would you bring with you to an outdoors, educational experience?	Notebook and writing utensils, iPad, class materials, umbrella for shading or rain	12. The device allows users to set up their personal desk space similar to within a typical classroom setting
		13. The device provides shelter from the elements
Describe your ideal study or meeting space	In an area the size of a typical office space; a larger area that allows for personal space; a large table area to spread out	14. The device at normal capacity provides the ability to stretch out
What is your preferred shape for the educational experience?	U-shape, circling the speaker, modified U-shape, attendees in a circle with the speaker outside of it	15. The device's seating arrangement provides the participants the ability to view each other and requires the speaker to rotate to address them all
What does collaboration mean to you?	Cooperation of individuals that reach a common goal or mutual benefit	16. The device is structured to make it easy to interact with the other members
What tools do you find yourself using the most?	iPad, tablets, computers, smartboard, dry erase board	17. The device provides power for technological devices
		18. The device incorporates typical visual display options

Yahdid James

Functional Decomposition

Yahdid James

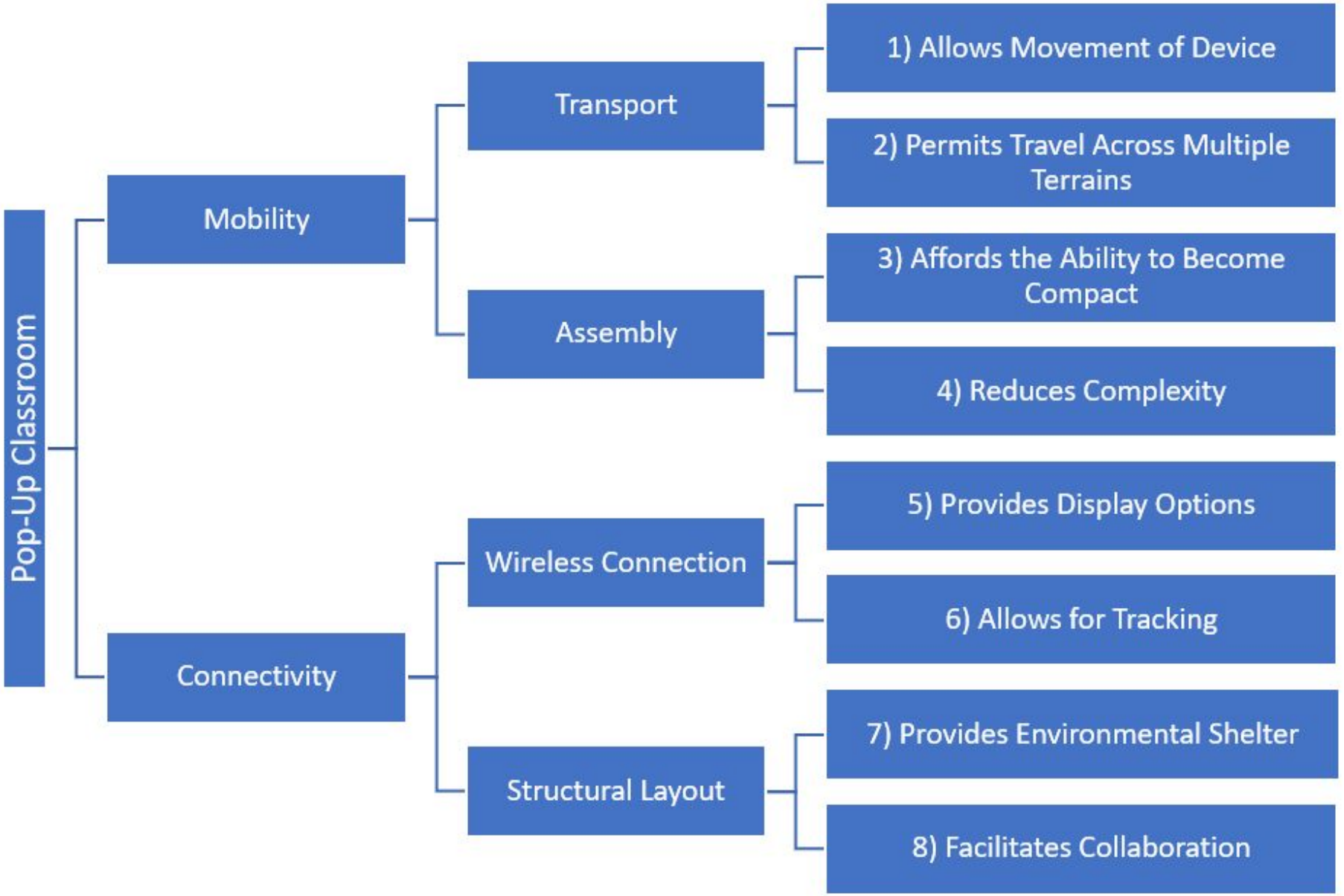
Overview of Functional Decomposition

Functional Systems: Mobility and Connectivity

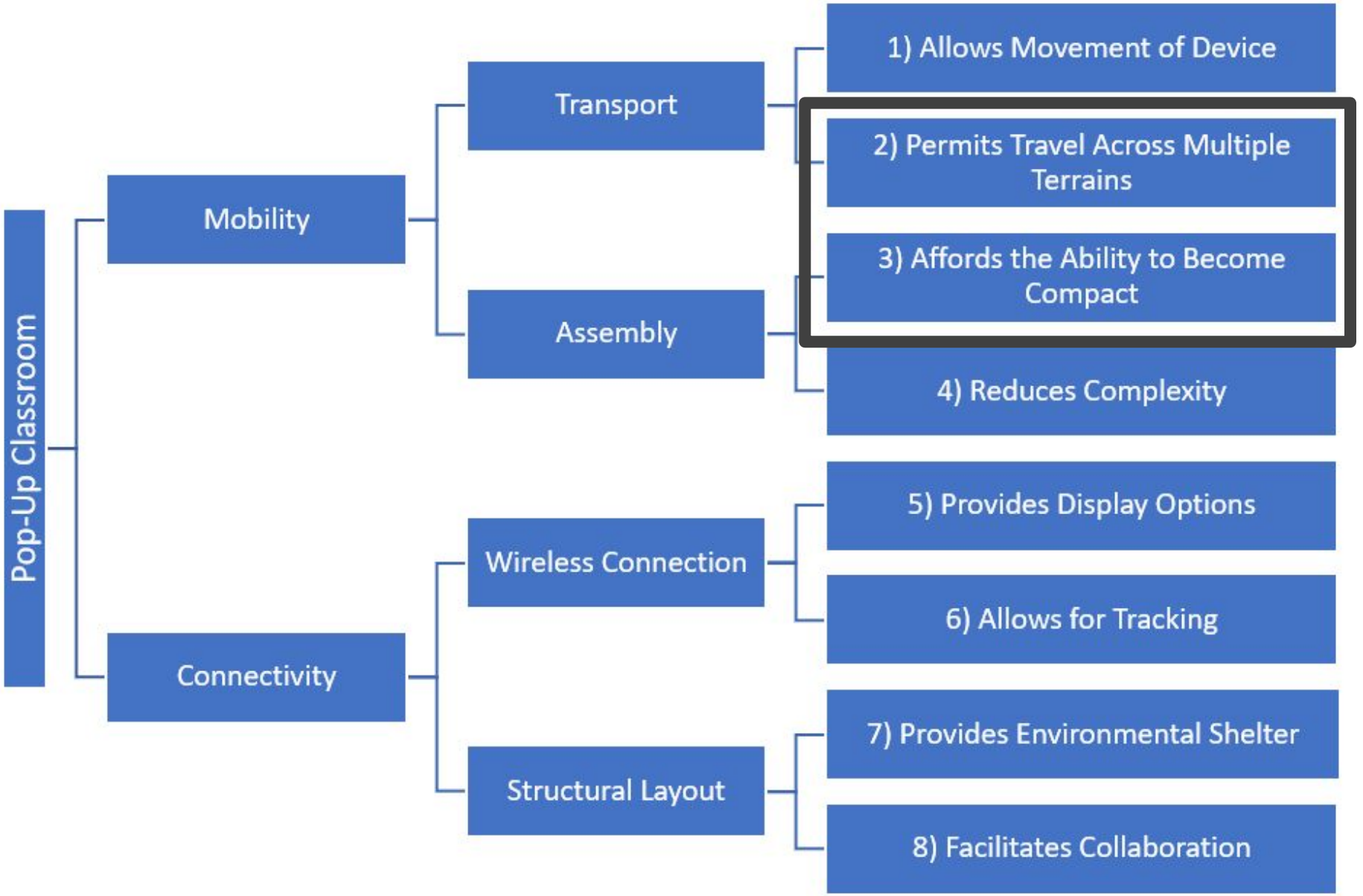
Mobility deals with all things affecting movement

Connectivity is in relation to the human interactions and the technical connectivity aspects

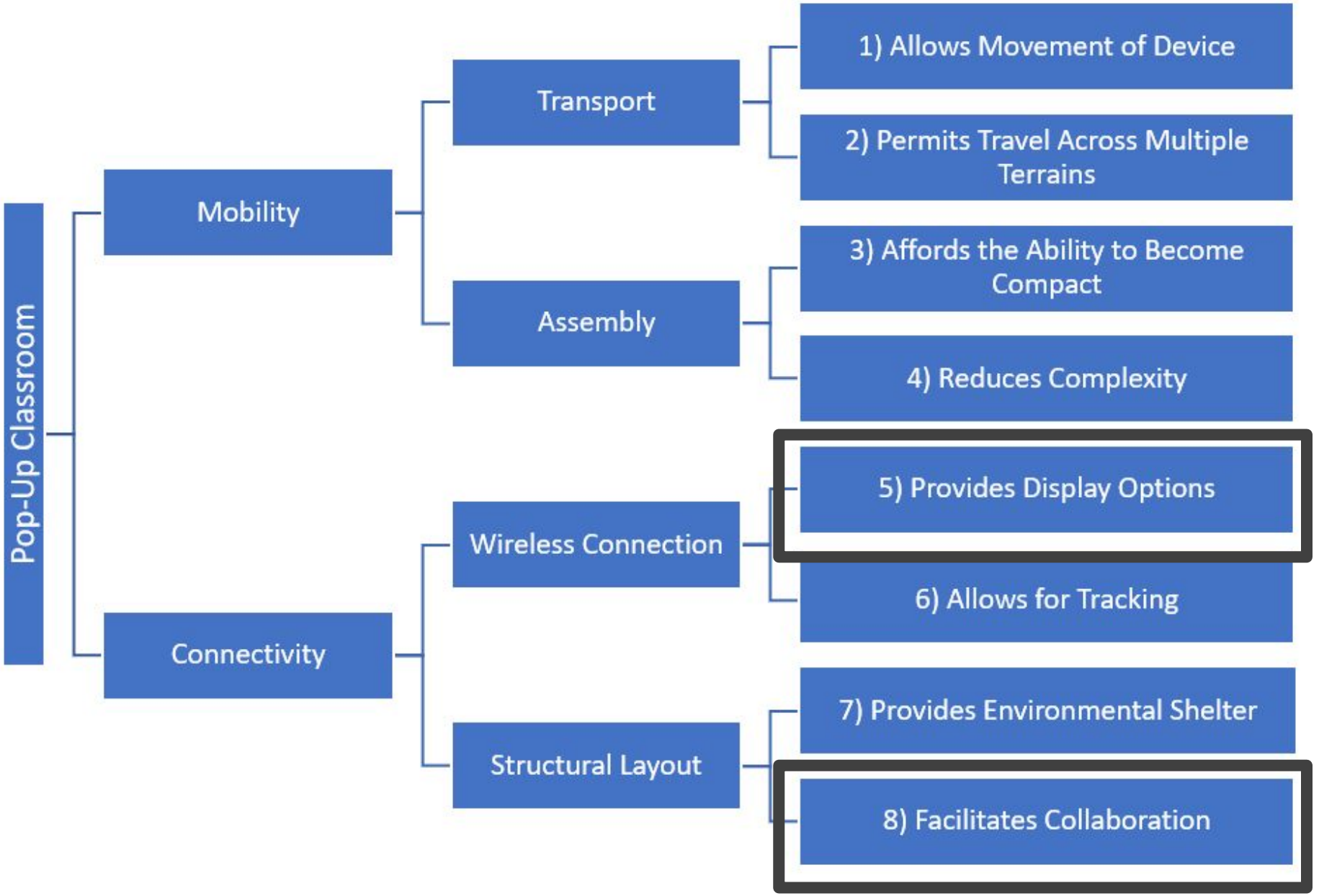
Daziyah Sullivan



Daziyah Sullivan



Daziyah Sullivan



Daziyah Sullivan

Next Steps

Daziyah Sullivan

Five Takeaways

1. The purpose of this project is to create a nomadic classroom that fosters a collaborative learning experience
2. The device can be used in applications outside of the educational institution
3. The primary functional systems are mobility and connectivity
4. The device will be mobile, but not yet autonomous
5. Connectivity is important to ensure educators have access to resources they are familiar with

Daziyah Sullivan

References

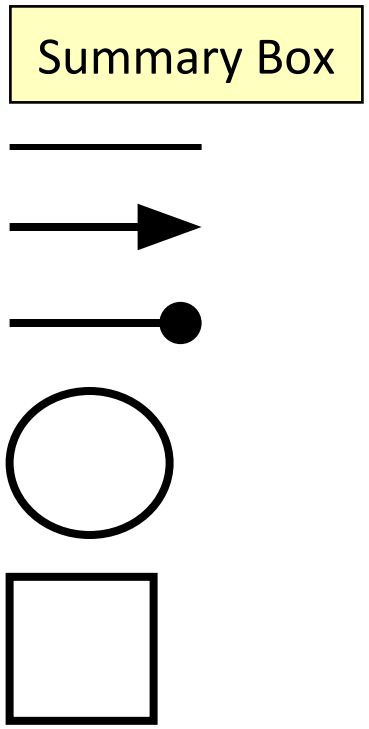
1. Stone, Robert B., and Kristin L. Wood. “Development of a Functional Basis for Design.” *Journal of Mechanical Design*, vol. 122, no. 4, 2000, p. 359., doi:10.1115/1.1289637.
2. Stone, R., Wood, K., and Crawford, R., 2000, “A Heuristic Method for Identifying Modules for Product Architectures,” Des. Stud., 21, No. 1, pp. 5–31.

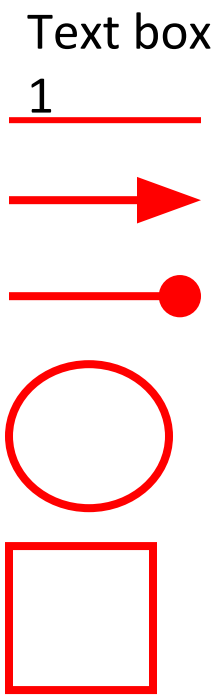
Questions

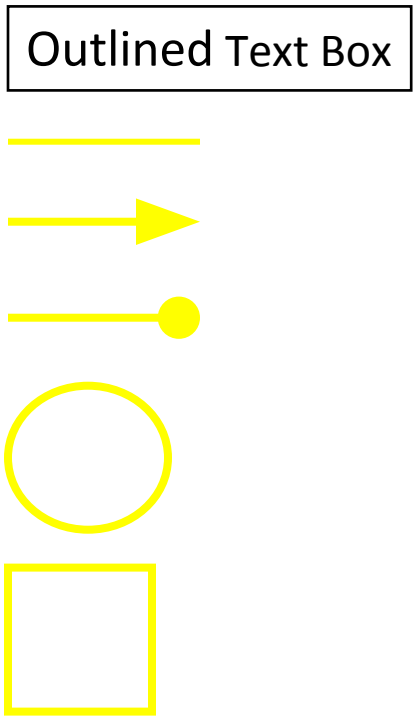
Backup Slides

Supporting Slides to the content above.

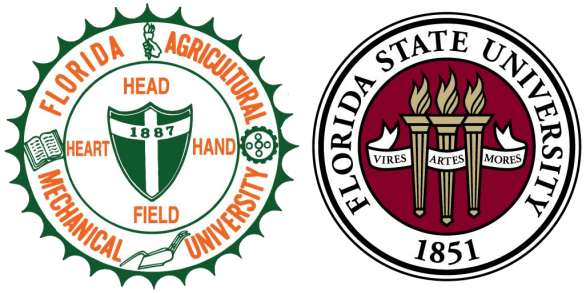
Standard Shapes







Approved Logos



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ENGINEERING

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Color Palette

2299 C
Color values:
RGB 164 210 51
HEX/HTML #A4D233
CMYK 41 0 84 0

1788 C
Color values:
RGB 238 39 55
HEX/HTML #EE2737
CMYK 0 88 82 0

75% Black
Color values:
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CYMK: 0 0 0 75

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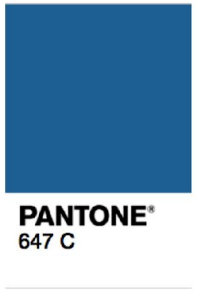

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Color values:
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HEX/HTML #236192
CMYK 96 54 5 27

50% Black
Color values:
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HEX/HTML
#808080
CYMK: 0 0 0 50

2199 C
Color values:
RGB 0 187 220
HEX/HTML #00BBDC
CMYK 77 0 16 0

7535 C
Color values:
RGB 183 176 156
HEX/HTML #B7B09C
CMYK 10 11 23 19

25% Black
Color values:
RGB 191 191 191
HEX/HTML #bfbfbf
CYMK: 0 0 0 25

APA Tables

Category 1	Category 2	Category 3	Category 4	Category 5
Item 1				
Item 2				
Item 3				
Item 4				

	Category 2			Category 3	
Category 1	subcategory 1	subcategory 2		subcategory 1	subcategory 2
Item 1					
Item 2					
Item 3					
Item 4					