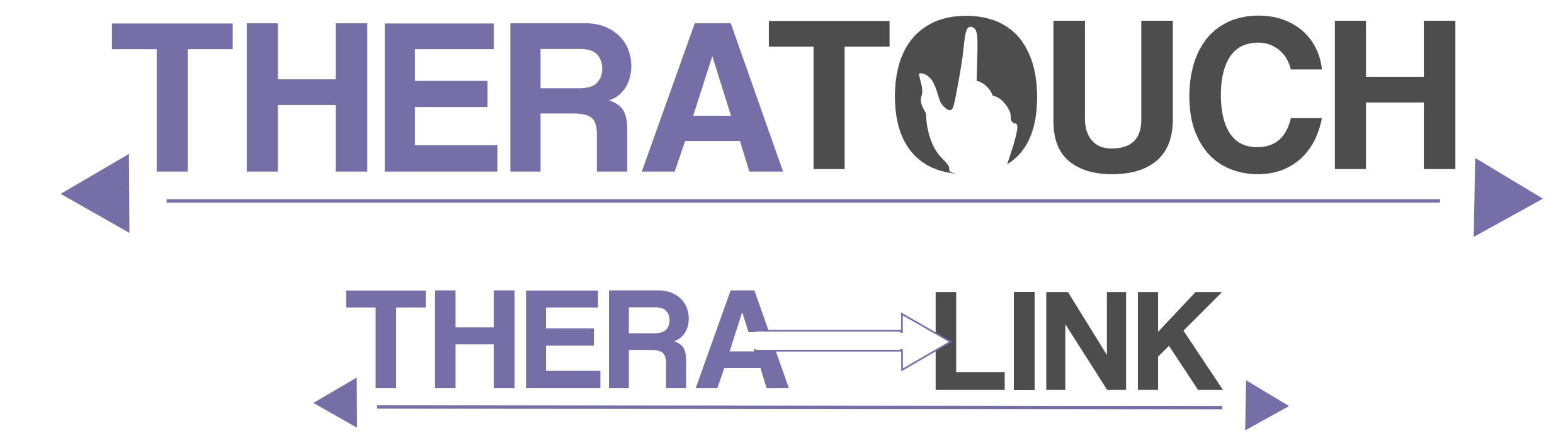# TheraTouch
Rehabilitative Therapy Using a Multi-Touch Device

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THERATOUCH / **THERALINK**

Motivation

- Multi-touch technology offers potential for innovative rehabilitative therapy
  - Color animation makes traditional activities more stimulating
  - Enhances patient interaction through engaging therapeutic exercises
- Automated data collection
  - Reduces need for pen and paper note-taking
  - Promotes open collaboration between therapist and patient
- Report collected metrics
  - Provides visual representation of performance
  - Establishes trends for potential use in research and diagnostics

Goals

- Create a suite of activities to test multiple functional areas within the scope of speech, occupational, and physical therapies
- Develop a framework with a common set of utilities that readily allows for the addition of future activities
- Implement a web-based management system that provides the ability to manage users and sessions
- Output collected activity data into comprehensive reports for analysis

System Architecture

TheraLink

Therapists establish patients within TheraLink to allow for interaction with the entire TheraTouch system.

The TheraTag is unique for each patient and utilizes identity tag technology to communicate with the Microsoft Surface.

Therapists create sessions containing therapeutic activities. The sessions can be customized to meet individual patient needs by selecting specific activities and defining their options.
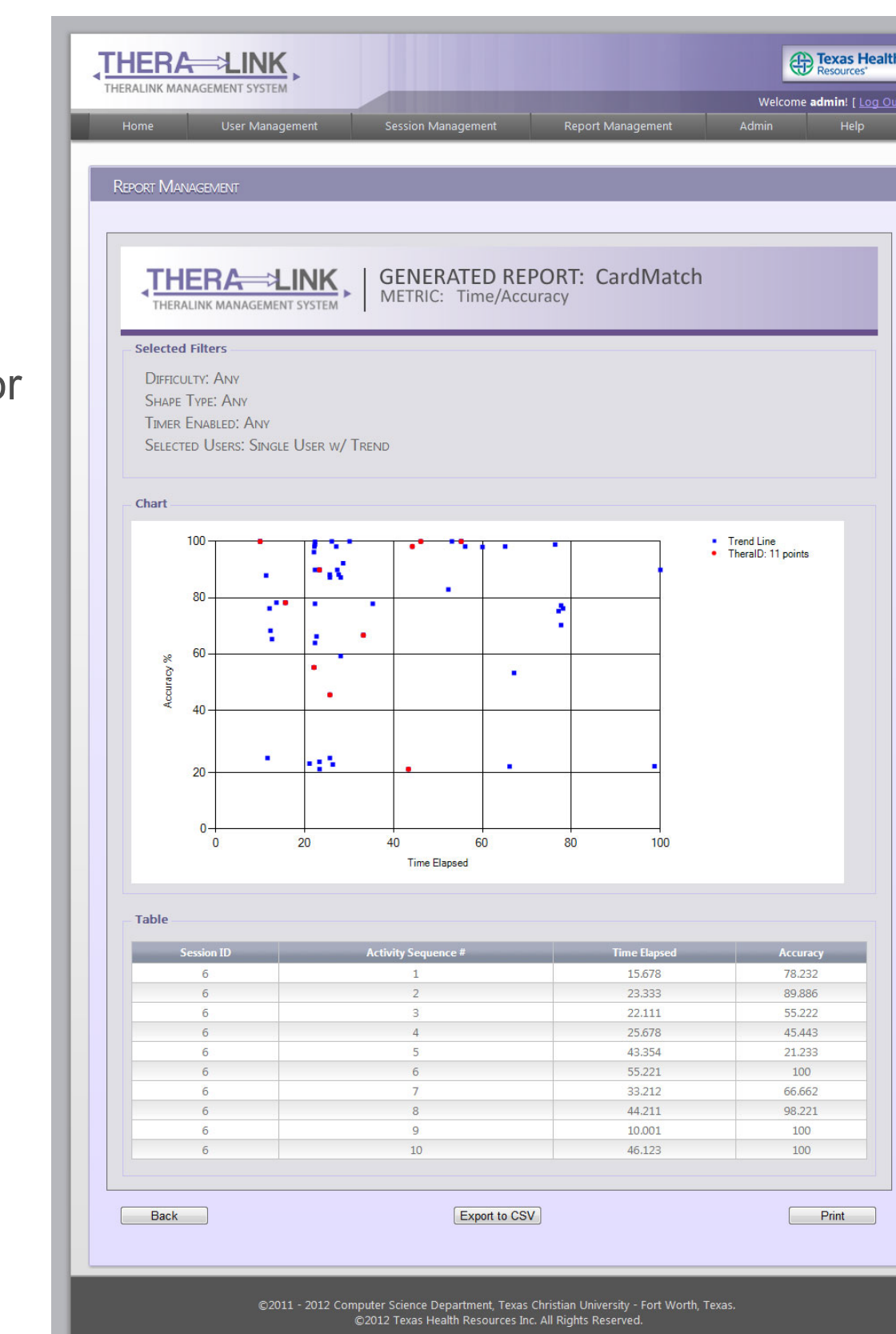
TheraLink provides reporting for all therapeutic activities, allowing a therapist to track patient progress and identify trends within populations.
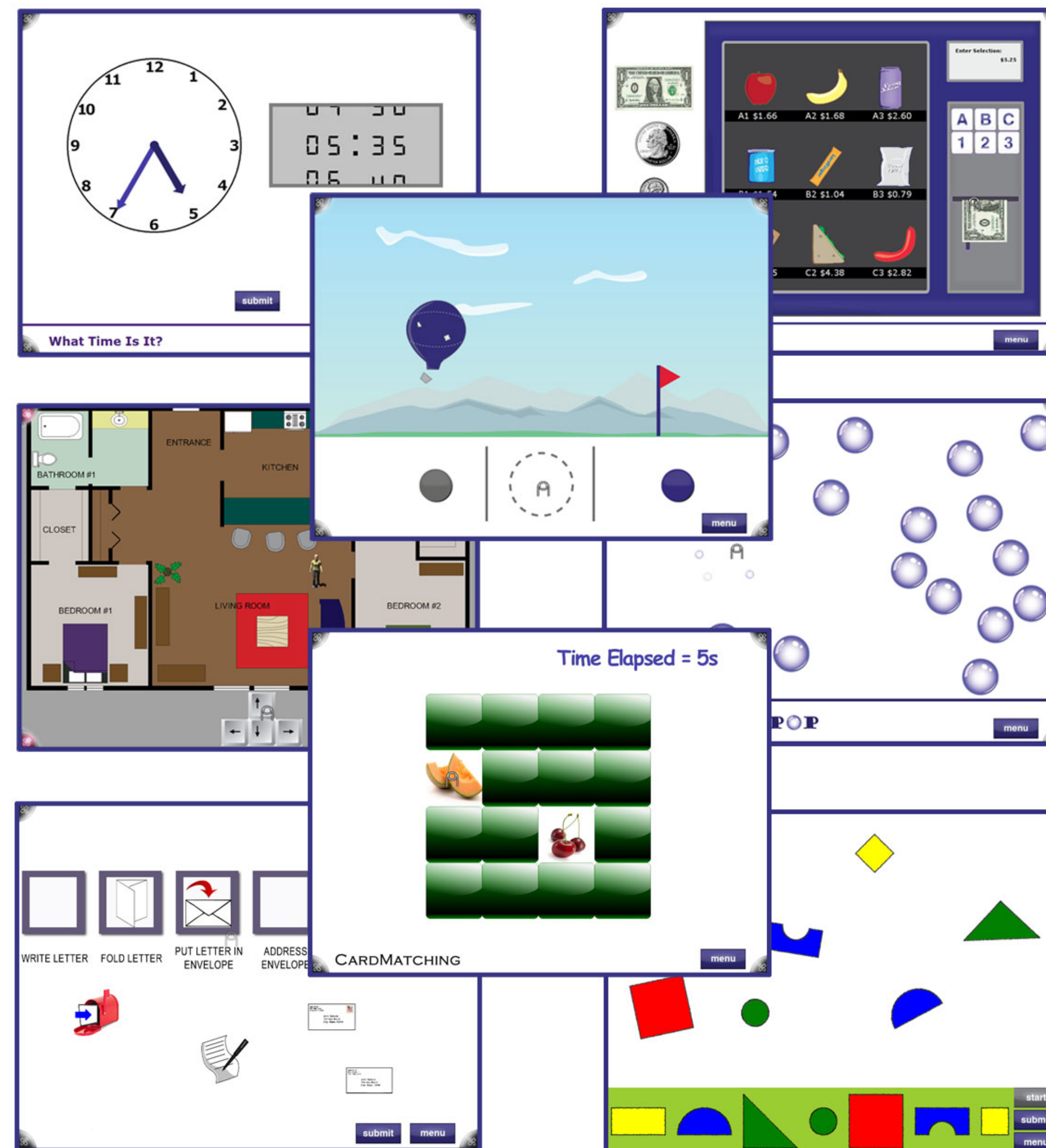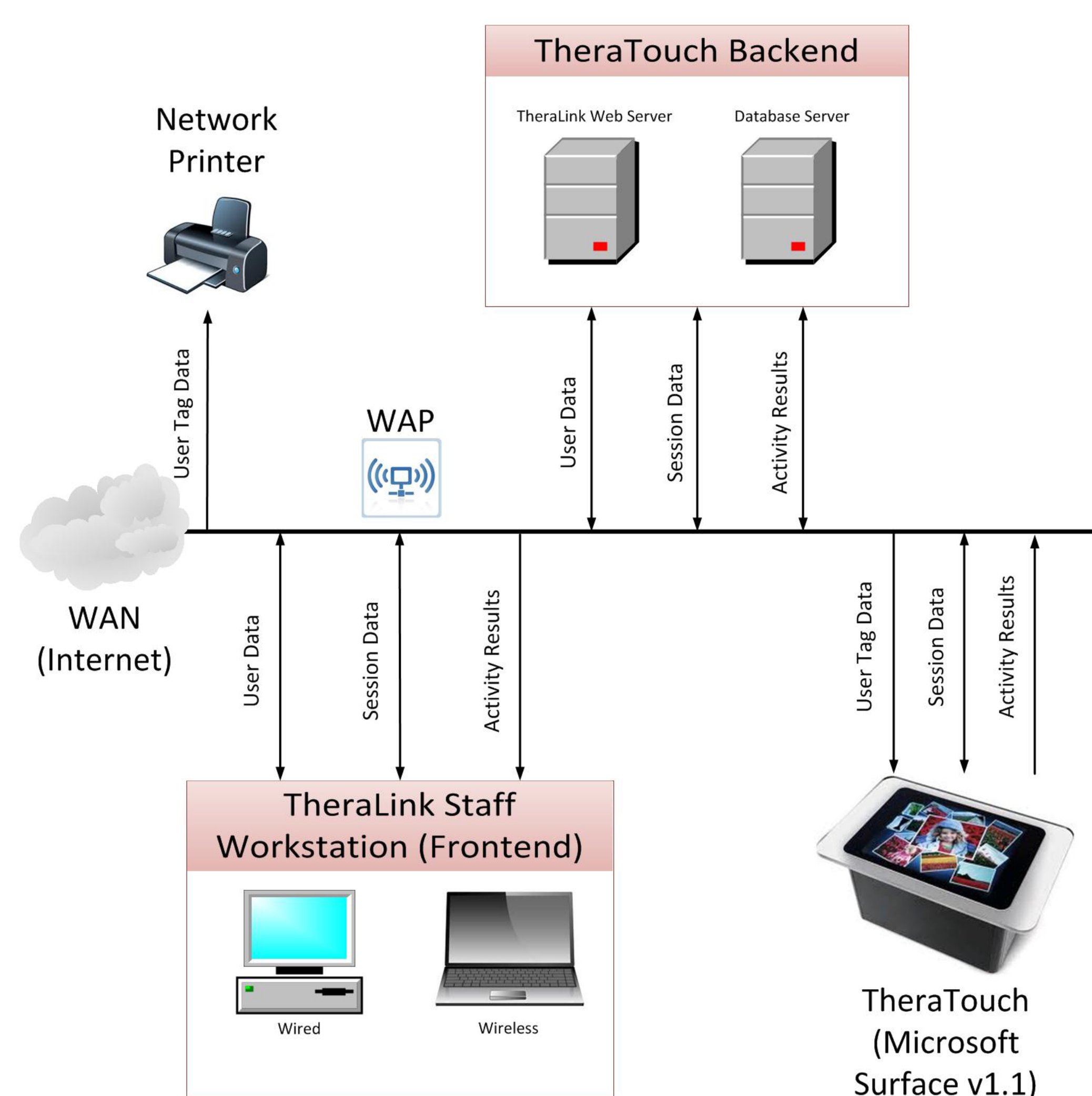
Therapeutic Activities

Function vs. Activity

Activity	Attention	Categorization	Language	Immediate Memory	Working Memory	Location Memory	Motor Skills	Recognition	Sequencing
Alt. Trial Making		✓	✓	✓					✓
Block Bash							✓	✓	
Bubble Pop							✓		
Card Match			✓	✓	✓		✓		
Find the Way							✓		
Maze							✓		
Metronome	✓						✓		
Odd One Out		✓							
Path Track				✓	✓		✓		✓
Sequence									✓
Seek Shape	✓		✓	✓	✓		✓		
Shape Match			✓					✓	
What Time Is It								✓	
Vending Machine		✓							
Wipe the Table							✓	✓	✓

Results

- Designed and developed a suite of 15 activities for all three variations of therapy, with most covering multiple functional areas
- Established a framework with essential shared utilities for a common appearance and easy installation of additional activities
- Deployed TheraLink, a web-based management system, to provide clinical staff with the ability to manage users, create therapy sessions, and report collected information
- Rolled out TheraTouch system to Texas Health Harris Methodist (HEB) – Physical Medicine & Rehabilitation Clinic

Acknowledgements

References

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