

## **Initial Concepts**

- Review phase 1 components and designs
- Analyze key componets of keyboard
- Investigate modifying pre-existing keyboard structures Vs. creating new
- Final investigation of measurement systems (Force, Acoustics, Velocity, Pressure)
- Formulate multiple concepts for customer needs
- Establish preliminary engineering specs and requirements

## **Concept Research**

- Research component materials
- Investigate types of keyboards
- Force sensor positioning
- USB/ps/2 EE research
- Microcontroller research
- Methods of integration with existing electronics
- Investigate tactile feedback
- Force matrix layout
- Extended functionality research

## **Concept Selections**

- Establish detailed engineering specs/risks for each concept
- Develop concept pro's & con's based on research
- Concept Decision
- System level design

## **Design**

- Software plan
- Detail level design
- Schematics (electrical and mechanical)
- Develop a CAD of keyboard
- FEA, silicone
- BOM
- Develop test plan
- Part ordering
- Prepare for design review

## **Prototype**

- Machine necessary parts
- Build circuit boards
- Assemble prototype

## **Test**

- Individual component testing
- Durability Testing

Flexibility Testing  
Break Stuff  
Full System Testing  
Forces  
Demo  
Prepare for design review

rd P2