Feasibility Test Plan

Name: Arun Joshi **Year:** 2015 (2nd Year)

Concept: Concept 30 – Piano Game

Description: Foot level game. Piano keys need to be pressed down to play note. Notes flash and are pressed in order to play song out loud.

Issue	Risk	Category	Action	Test	Complete by	Result	Status
Height of the pedals	May not be able to lift leg high enough could be uncomfortable / cause injury	B	Build basic models exploring height but mainly look at ergonomic data and measure users in development	Sit on chair and measure comfortable heights to raise leg to using basic models	9/1/2015 - Development	Model showed that a slight slope was easier to place foot on than flat	Take model insights forward to development and apply human factors
Resistance of the pedals	May be too hard to push down	B	Measure resistances in development	Development	N/A	Development	Development
Angle of the pedals	Could be uncomfortable if at incorrect angle	C	Build model of foot pedals to test which angles are comfiest + ergonomic research	Test how comfortable each angle is for user	9/1/2015 - Development	Rather than the pedal angled so only the ankle moves, the pedal needs to be slightly angled up to encourage the user to push with their whole leg rather than ankle.	Take forward to development with model insights
Volume of music	Could deafen or cause ear damage if too loud	A	Test levels of hearing on users	See how easy it is for users to hear	N/A	Development	Development
Size of pedals	If too small they may not be able to position foot on the pedal but if they are too large then it will mean extra material and manufacturing costs	B	Test different pedals sizes to see which is best size + ergonomic research	See which size is easiest to place foot on	9/1/2015 - Development	After trying various sizes and asking for feedback it was concluded that a shape roughly the same size as a shoe	Take forward to development with model insights

						box lid was appropriate	
Brightness of key flashes	Could temporarily blind person if too bright and could product not too perform function properly if too dull	B	Test eyesight of users	See how easy it is for users to see	N/A	Development	Development
Getting fingers caught between pedals	Could cause injury to fingers	C	Test how fastening could be done with models	See how easy it is to get fingers caught	9/1/2015 - Development	After looking at fastening methods it became apparent that a simple slot in joint would work best	Take forward to development with model insights
Not enough space between two users	Could cause them to bump into each other	C	Research into ergonomics for average arm space and chair sizes	Make model of pedal set to see how much room would be allowed	9/1/2015 - Development	Model showed that users should have a good size space between themselves and other users as it would mean they can have room for their chair if needed and also make the product less cramped	Look at chair widths
Slipping off the pedal	Could slip off product and fall	B	Research into materials with best grip	Test different materials	N/A	Development	Development – rubber surfacing seems to be the most likely material
Whole product could slide if enough force is applied	Could push product away from the users	C	Research into materials with best grip	Test different materials	N/A	Development	Development – rubber surfacing seems to be the most likely material
Position of black pedal	Cannot push the pedal down in time if it is too far away to	A	Make model to give a visual understand of how	Ask for feedback	9/1/2015	Feedback showed that it would be	Redesign the black pedal

	reach (especially if the user is sitting down) also will be very hard to develop two pedals on top of each other		the pedals would look and see if there is a way to improve their positions			awkward for users to reach and would require a lot of engineering to work	position so that it can act as a pedal for the left foot and the white pedal can act for the right foot
Should resistance be provided by springs or air	Space and costs may be saved if using different methods and also they offer different resistances	B	Make model using foot pump to begin to understand what components could be used	-	9/1/2015 - Development	Air pumps will mean lighter pedals and less components	Look into air resistance pumps and incorporating it with pressure pads
How do pedals connect to each other	Pedals need to connect to make a sequence for the users to follow which allows for the product to be easily stored away	B	Make model too look at simple ways to connect pedals	See how easy they are to separate and ask for feedback	9/1/2015 - Development	After looking at fastening methods it became apparent that a simple slot in joint would work best	Pedals should be separate so that they are easier to store – no need for a central hub connecting system