N	Title	Components	Description
1	Presence-Activated Welcome Message System	PresenceSensor, TextToSpeech	When the PresenceSensor detects someone entering a room or approaching an exhibit, it triggers the TextToSpeech component to deliver a pre-programmed welcome message or provide introductory information. Creates an automated, hands-free greeting system for kiosks, smart
2	Ambient Light Responsive Musical Mood Player	LightSensor, NotePlayer	The LightSensor measures ambient light. Based on brightness (day/evening), the NotePlayer plays corresponding musical motifs, creating a dynamic auditory atmosphere that shifts with natural light, suitable for calming spaces or interactive art.
3	Motion-Triggered Haptic Feedback Floor Mat	CameraMovement, Haptic	CameraMovement detects footsteps/movement on a floor area. It activates the Haptic component in a mat, providing vibration feedback. Useful for interactive pathways, play areas, or accessibility aids indicating safe zones.
4	ArUco Marker Activated Object Rotation Display	ArUco, Servos	User places an ArUco-tagged object in view. ArUco identifies the marker, triggering a Servo to rotate the object 360 degrees on a display stand. Allows interactive product displays or artifact examination without handling.
5	Hand Gesture Controlled Sound Effect Player	HandSensor, SoundPlayer	HandSensor detects specific gestures (e.g., thumbs-up, open palm). Each gesture triggers the SoundPlayer to play a corresponding pre-loaded sound effect. Creates an engaging interface for storytelling, presentations, or games using gestures for auditory feedback.
6	Body Posture Guidance with Spoken Feedback	BodySensor, TextToSpeech	BodySensor tracks user posture. If poor posture (slouching) is detected, TextToSpeech provides corrective voice prompts ("Sit up straighter"). Offers a personalized ergonomic guide for office workers or rehabilitation.
7	Facial Expression Controlled Value Adjustment Knob	FaceSensor, Knob	FaceSensor detects expressions (smiling, frowning). Expression intensity controls a digital Knob's value (e.g., wider smile increases setting). Creates an emotive, hands-free control method for interactive installations or accessibility.
8	Noise Level Activated Quiet Zone Reminder Switch	NoiseSensor, Switch, Lamp	NoiseSensor monitors sound in a quiet zone. If noise exceeds a threshold, it toggles a Switch, activating a Lamp (e.g., turning red) as a visual cue to lower volume.
9	Voice Command System for Text Note Taking	VoiceRecognition, Text	User speaks commands/dictates notes. VoiceRecognition transcribes speech to text, displayed/stored using the Text component. Provides a hands-free method for capturing ideas or system interaction, useful for accessibility or hands-on tasks.
10	Environmental Sound Recognition Feedback Button	AudioClassifier, Button, Haptic	AudioClassifier listens for specific sounds (doorbell, alarm). When detected, it activates Haptic feedback on a wearable Button device, alerting deaf/hard-of-hearing users via vibration to important auditory cues.
11	Acceleration-Based Interactive Sound Shaker Toy	Acceleration, SoundPlayer	Acceleration sensor measures shake intensity/direction. This controls SoundPlayer playback (volume, pitch, different sounds based on vigor). Creates a motion-reactive musical toy or sound device for sensory exploration.
12	Tilt-Controlled Object Orientation Display via GPS	Inclination, Orientation, GPS, Text	Inclination/Orientation sensors detect how an object (model globe) is tilted/oriented. This data, possibly with GPS location, displays corresponding geographical/orientation info (compass direction) on a Text display. Creates an interactive educational tool for geography/navigation.
13	Smart Lighting System Adjusting to Presence/Light	PresenceSensor, LightSensor, Lamp	PresenceSensor detects people; LightSensor measures brightness. If present and light is low, Lamp turns on/adjusts brightness for optimal lighting. Conserves energy by turning off when room is empty or bright enough.
14	Motion-Activated Servo Gate with ArUco Verification	CameraMovement, ArUco, Servos	CameraMovement detects approach. ArUco scans for a specific marker on the object/card. If correct, Servo opens the gate. Provides simple, automated, verifiable access control.
15	Gesture and Voice Controlled Presentation System	HandSensor, VoiceRecognition, Servos, TextToSpeech	Control presentations with gestures (HandSensor for slide change via Servos) and voice (VoiceRecognition for commands like "Zoom in"). TextToSpeech provides audio feedback/reads notes. Offers a multi-modal, accessible control interface.
16	Posture-Correcting Chair with Haptic Feedback	BodySensor, Haptic, Switch	BodySensor in a chair monitors posture. If poor posture persists, Haptic provides vibration feedback. User can disable feedback with a Switch. Promotes better ergonomics during long sitting.
17	Emotion-Reactive Music Playlist Generator	FaceSensor, AudioClassifier, SoundPlayer	FaceSensor gauges emotion (happy, sad). AudioClassifier identifies ambient context (office, rain). Combined input selects/plays music via SoundPlayer to match/enhance mood.
18	Voice-Activated Environmental Noise Level Display	VoiceRecognition, NoiseSensor, Text	User asks "What's the noise level?" (VoiceRecognition). NoiseSensor measures decibels. Reading is displayed numerically/descriptively ("Quiet," "Loud") on Text display. On-demand environmental awareness.
19	Sound Classification Triggered Text Alerts	AudioClassifier, Text, TextToSpeech	AudioClassifier identifies sounds (baby crying, glass breaking). When detected, displays an alert on Text screen and TextToSpeech announces the event. Crucial notifications for home monitoring or accessibility.
20	Interactive Tilt-Based Labyrinth Game with Sound	Inclination, SoundPlayer, Lamp	User tilts a board/device (Inclination) to navigate a virtual maze. SoundPlayer provides audio feedback (collisions, success). Lamp changes color based on goal proximity/danger zones, enhancing game immersion.
21	Orientation-Aware Smart Compass with Haptics	Orientation, Haptic, GPS	Orientation sensor acts as digital compass. With GPS context, guides user to destination via Haptic vibrations (intensity/change pattern when facing correct direction). Intuitive navigation, especially for visually impaired.
22	Interactive ArUco Story Blocks for Children	ArUco, TextToSpeech, SoundPlayer	Children place ArUco-marked blocks on a surface. ArUco identifies marker, triggers TextToSpeech to read story part or SoundPlayer for effects. Engaging, tangible storytelling promoting literacy.
23	Gesture Controlled Robotic Arm Mimicry	HandSensor, Servos, BodySensor	HandSensor tracks hand gestures/position; BodySensor tracks arm movements. Data controls Servos of a robotic arm, mirroring user's hand/arm motions. Useful for remote manipulation or educational robotics.
24	Light-Sensitive Security Alert System	LightSensor, CameraMovement, SoundPlayer, Lamp	LightSensor detects sudden light changes; CameraMovement detects motion. If triggered together under specific conditions, assumes intrusion, activates loud SoundPlayer alarm and flashing Lamp.
25	Presence-Detecting Auto Door/Display Activation	PresenceSensor, Servos, Text	PresenceSensor detects approaching person, signals Servo to open door/panel revealing display. Text component shows greeting/info. Creates seamless entry or information reveal for smart buildings/exhibits.
26	Facial Expression Mirroring Robot Face	FaceSensor, Servos, Lamp	FaceSensor tracks user expressions (smile, frown). Data controls Servos on a robot face (eyebrows, mouth) to mimic expression. Lamps as eyes change color/brightness to enhance emotion.
27	Noise-Activated Study Focus Timer with Visual Cue	NoiseSensor, Lamp, Knob, Text	User sets timer (Knob, Text display). NoiseSensor monitors noise. Low noise = calming Lamp color (green). High noise = different color (red) as visual cue to refocus.
28	Voice Command Recipe Assistant with Audio Output	VoiceRecognition, TextToSpeech, Button	Interact with recipe app via voice (VoiceRecognition: "Next step"). TextToSpeech reads instructions. Button pauses/resumes audio. Hands-free kitchen guidance.
29	Sound Identifying Doorbell for Hearing Impaired	AudioClassifier, Lamp, Haptic, Text	AudioClassifier listens for specific doorbell sound. When detected, triggers flashing Lamp, wearable Haptic vibration, and Text display ("Doorbell!"). Reliably alerts hearing-impaired users to visitors.
30	Movement Intensity Controlled Music Tempo Player	CameraMovement, NotePlayer, LightSensor	CameraMovement detects movement speed/intensity (dancing). Data modulates tempo (NotePlayer), perhaps key (LightSensor for mood). Responsive soundscape mirroring room energy.
31	Physical Object Tilt-to-Scroll Interface	Inclination, Text, Haptic	Tilting a device (Inclination) scrolls content (up/down) on Text screen. Haptic feedback provides clicks/bumps for scrolled items/end of content. Tangible Browse experience.
32	Location-Aware Orientation Guide for Tourists	Orientation, GPS, TextToSpeech, Button	Uses GPS (location) and Orientation (facing direction). Pressing Button triggers TextToSpeech directions/info about nearby points of interest based on context/view. Interactive audio tour guide.
33	ArUco Marker Based Inventory Check System	ArUco, Text, Button, SoundPlayer	Scan ArUco-tagged items. ArUco identifies markers. System checks database, displays info on Text. Button confirms/logs discrepancies. SoundPlayer gives confirmation/error signals.
34	Interactive Hand Puppet with Gesture Sounds	HandSensor, SoundPlayer, Servos	HandSensor tracks finger movements in puppet. Gestures trigger SoundPlayer (character sounds). Servos move puppet parts (eyes) response to movement. Lifelike, interactive puppetry for entertainment/therapy.
35	Full-Body Controlled Virtual Character Avatar	BodySensor, FaceSensor, TextToSpeech	BodySensor tracks body movement/posture; FaceSensor captures facial expressions. Data animates virtual avatar in real-time. TextToSpeech voices avatar (potentially modulated by emotion). Immersive communication/VR.
36	Dynamic Lighting Based on Room Noise Level	NoiseSensor, LightSensor, Lamp	NoiseSensor measures volume. Data (scaled by LightSensor ambient light?) controls Lamp brightness/color. Loud = bright/flashing; quiet = dim/calm. Visualizes room's soundscape.
37	Voice-Controlled Servo Mechanism with Confirmation	VoiceRecognition, Servos, Text, Lamp	User issues voice command ("Open valve"). System processes, displays action on Text, lights Lamp for confirmation. Upon confirmation, Servo performs action. Precise mechanical action via voice.
38	Sound Classification Based Language Learning Game	AudioClassifier, Text, Button, NotePlayer	System plays sound (AudioClassifier: "dog barking"). Text displays multiple-choice answers in target language. User presses Button for choice. Correct = NotePlayer celebration; incorrect = prompt. Gamified vocabulary learning via sound.
39	Exercise Rep Counter Using Acceleration Peaks	Acceleration, Text, TextToSpeech	Attach device (Acceleration sensor) to limb/equipment. Sensor detects acceleration peaks during reps (curls, jumps). System counts reps, displays on Text, announces milestones via TextToSpeech.
40	Tilt-Activated Emergency Alert System	Inclination, GPS, TextToSpeech, Button	Worn sensor (Inclination) detects falls. If fall detected, uses GPS for location, TextToSpeech asks "Are you okay? Press button to cancel". If Button not pressed, sends alert with location.
41	Presence & Gesture Controlled Information Kiosk	PresenceSensor, HandSensor, Text, SoundPlayer	PresenceSensor activates kiosk on approach. User navigates Text menus via HandSensor gestures (swipe, point). Selection triggers SoundPlayer audio info/feedback. Intuitive, touch-free interactive display.
42	Light-Adaptive Reading Lamp with Gesture Dimming	LightSensor, HandSensor, Lamp	LightSensor measures ambient light, adjusts Lamp baseline brightness. User fine-tunes brightness/color temp via HandSensor gestures (raise/lower hand). Personalized control over auto-adjusted light.
43	Movement Direction Controlled Robotic Vehicle	CameraMovement, Servos, ArUco	CameraMovement detects user movement direction (pointing left/right). Controls Servos of robotic vehicle. ArUco markers define boundaries/targets. Educational robotics/games interaction.
44	Posture-Aware Music Relaxation System	BodySensor, SoundPlayer, LightSensor	BodySensor monitors for relaxed posture. When detected (potentially with low LightSensor reading), SoundPlayer plays calming music/sounds. Aids relaxation/meditation automatically.
45	Emotion-Sensing Diary with Voice Input	FaceSensor, VoiceRecognition, Text, Haptic	User speaks diary entry (VoiceRecognition transcribes to Text). FaceSensor analyzes emotion, tags entry. Haptic pulse confirms save. Multi-layered personal journal.
46	Noise Level Visualizer Using Lamp Array	NoiseSensor, Lamp, Switch	NoiseSensor measures sound level. Controls Lamp array (more lamps light up/change intensity with volume). Real-time visual noise representation. Switch turns on/off. Useful for classrooms, offices.
47	Voice-Command Interactive Storyteller	VoiceRecognition, TextToSpeech, SoundPlayer, Button	TextToSpeech narrates branching story. VoiceRecognition listens for user choice at decision points. Story progresses based on command. SoundPlayer adds effects/music. Button skips/repeats. Immersive voice-driven narrative.
48	Intruder Sound Detection Alert System	AudioClassifier, CameraMovement, Lamp, TextToSpeech	AudioClassifier listens for suspicious sounds (glass break). If detected, CameraMovement checks for motion. If both trigger, activates flashing Lamp and loud TextToSpeech warning/alert. Security system component.
49	Motion-Controlled Musical Instrument Interface	Acceleration, Inclination, NotePlayer, Knob	Acceleration controls rhythm/volume (NotePlayer). Inclination (tilt) controls pitch/scale. Knob adjusts parameters (instrument sound). Turns physical movement into musical expression. Unique interactive instrument.
50	Orientation-Based Panoramic Image Viewer Control	Orientation, Servos, Text	Orientation sensor detects device rotation. Controls Servos on display/projector mount, panning panoramic image/VR environment. Text shows location markers/info overlays.
51	ArUco Task Verification System with Feedback	ArUco, Haptic, Lamp, TextToSpeech	Verifies correct placement of ArUco-marked objects in workflows. Correct placement triggers positive Haptic feedback, green Lamp, and TextToSpeech confirmation ("Step Complete"). Incorrect triggers different Haptic pattern and red Lamp.
52	Hand Sign Language Translation Trainer	HandSensor, Text, TextToSpeech, Button	HandSensor recognizes sign language gestures. System displays corresponding word/phrase on Text screen and speaks it via TextToSpeech for immediate feedback. Button allows users to request next sign or repeat.
53	Full Body Movement Game Controller	BodySensor, CameraMovement, SoundPlayer, Haptic	BodySensor tracks posture/limbs; CameraMovement detects quick motions (jumps). Combined data controls game character. SoundPlayer provides audio feedback; Haptic signals impacts/actions. Creates active, full-body gaming.
54	Responsive Environment Lighting Based on Facial Mood	FaceSensor, LightSensor, Lamp, NotePlayer	FaceSensor assesses mood. Combined with ambient LightSensor data, adjusts Lamp color/intensity (warm for happy, cool for neutral). NotePlayer might play subtle mood-enhancing tones. Creates adaptive ambient environment.
55	Voice-Activated Appliance Control with Noise Check	VoiceRecognition, NoiseSensor, Servos, Switch	User gives voice command (VoiceRecognition). NoiseSensor checks ambient noise for clarity. If clear, toggles Switch or controls Servo for appliance activation. Ensures robust voice control.
56	Smart Alarm Clock using Sound Detection and Light	AudioClassifier, LightSensor, Lamp, SoundPlayer, Knob	User sets alarm (Knob). At time, checks LightSensor; if dark, Lamp brightens gradually. SoundPlayer plays alarm sounds. AudioClassifier listens for user voice commands ("Snooze," "Stop") to control alarm.
57	Fitness Tracker Measuring Movement Intensity and Tilt	Acceleration, Inclination, Text, Haptic	Measures exercise intensity (Acceleration) and form/angle (Inclination). Real-time feedback/corrections on Text screen. Haptic signals milestones or alerts to incorrect posture/movement.
58	Location and Orientation Triggered Audio Tour Guide	GPS, Orientation, AudioClassifier, TextToSpeech	Knows user location (GPS) and viewing direction (Orientation). Near point of interest and facing it, TextToSpeech plays info. AudioClassifier listens for keywords ("Tell me more") for deeper info.
59	Interactive Building Blocks with ArUco and Sounds	ArUco, NotePlayer, Lamp	Identifies ArUco markers on stacked/arranged blocks and their positions. Based on arrangement, NotePlayer plays melodies/chords, and Lamps light up in patterns. Turns building into creative musical/visual activity.
60	Remote Assistance using Gesture Mimicking Robot	HandSensor, BodySensor, Servos, TextToSpeech	Expert's movements (HandSensor, BodySensor) control remote Servos on a robot, mimicking actions. TextToSpeech allows expert's verbal instructions. Enables remote guidance for manual tasks (training, maintenance).
61	Presence-Based Energy Saving System for Rooms	PresenceSensor, LightSensor, Servos, Switch	Detects occupancy (PresenceSensor) and light (LightSensor). If occupied & dark, turns on lights (Switch). If unoccupied, turns off lights, potentially closes blinds/adjusts thermostat (Servos). Optimizes energy use.
62	Emotionally Responsive Robotic Pet Companion	FaceSensor, Haptic, SoundPlayer, Servos	Detects user emotion (FaceSensor). Robot responds: smile might trigger 'purr' (Haptic, SoundPlayer) and 'tail' wag (Servo). Sad look might trigger comforting sounds/nudge. Interactive emotional companion.
63	Dynamic Volume Control Based on Ambient Noise	NoiseSensor, SoundPlayer, Knob	Measures background noise (NoiseSensor). Auto-adjusts SoundPlayer volume to maintain intelligibility relative to ambient noise. User sets baseline/offset (Knob).
64	Voice-Interactive Language Pronunciation Coach	VoiceRecognition, TextToSpeech, AudioClassifier, Text	TextToSpeech speaks word/phrase. User repeats (VoiceRecognition). AudioClassifier analyzes pronunciation quality. Feedback via Text ("Good") or spoken cues. Interactive pronunciation practice.
65	Physical Therapy Game with Motion and Tilt Goals	Acceleration, Inclination, Lamp, NotePlayer, Text	Measures exercise effort/speed (Acceleration) and range of motion (Inclination). Game-like feedback: Lamps light for goals, NotePlayer plays success sounds, Text displays progress. Engages patients in rehab.
66	Smart Navigation Cane for Visually Impaired	Orientation, GPS, Haptic, TextToSpeech, Button	Combines GPS/Orientation for location/direction. TextToSpeech gives directions. Haptic handle vibrates for turns/obstacles. Button requests location/repeats instructions. Enhances independent mobility.
67	Interactive Museum Exhibit using ArUco Markers	ArUco, Text, SoundPlayer, Lamp	Point device at ArUco markers on artifacts. System shows info (Text), plays audio (SoundPlayer), highlights features (Lamp). Multi-sensory information layer.
68	Gesture-Controlled Music Mixer Interface	HandSensor, Knob, SoundPlayer, Lamp	Hand position/gestures control volume (up/down), panning (left/right), effects (pinch). Knobs fine-tune EQ. SoundPlayer outputs audio. Lamps give visual feedback (levels, effects). Tangible DJ control.
69	Whole-Body Relaxation Biofeedback System	BodySensor, FaceSensor, SoundPlayer, Haptic	Monitors relaxed posture (BodySensor) and calm expression (FaceSensor). If relaxed, plays calming sounds (SoundPlayer) and gentle pulses (Haptic). Changes feedback if tension detected, guiding relaxation.
70	Smart Home Noise Disturbance Logger	NoiseSensor, AudioClassifier, GPS, Text	Detects noise events over threshold (NoiseSensor). AudioClassifier identifies type (dog, construction). Logs time, duration, level, type, location (GPS) to Text/file. For review/reporting.
71	Voice-Driven Educational Quiz Game Show	VoiceRecognition, TextToSpeech, Button, Lamp, NotePlayer	TextToSpeech asks questions. VoiceRecognition processes spoken answers. Correct = sounds (NotePlayer), green light (Lamp). Incorrect = buzzer, red light. Buttons for buzzing in. Simulates TV game show.
72	Advanced Fall Detection and Alert System	Acceleration, Inclination, Orientation, GPS, TextToSpeech, Button	Uses Acceleration (impact), Inclination (angle), Orientation (change) for accurate fall detection. If fall suspected, uses GPS, asks user (TextToSpeech), needs Button press to cancel, alerts contacts if no response.
73	Interactive Public Art Installation Responsive to Movement	CameraMovement, PresenceSensor, Lamp, SoundPlayer, Servos	PresenceSensor activates on approach. CameraMovement detects people's movement flow/intensity. Modulates light patterns (Lamps), triggers soundscapes (SoundPlayer), controls kinetic elements (Servos). Dynamic artwork reflecting collective activity.
74	Gesture-Controlled Robotic Gripper Tool	HandSensor, Servos, Haptic, CameraMovement	Hand gestures (HandSensor: open/close fist) control Servo gripper. CameraMovement aids positioning. Haptic feedback signals grip/contact force. Intuitive remote control for precise object handling.
75	Context-Aware Personal Assistant Interface	PresenceSensor, FaceSensor, VoiceRecognition, TextToSpeech, Text	Detects user (PresenceSensor), recognizes mood (FaceSensor), takes voice commands (VoiceRecognition). Responds via TextToSpeech/Text, tailoring tone/content to mood/context. Personalized empathetic interaction.
76	Light and Noise Sensitive Sleep Aid Device	LightSensor, NoiseSensor, SoundPlayer, Lamp	Monitors light (LightSensor), dims Lamp. Monitors noise (NoiseSensor); if high, SoundPlayer generates white noise/calming sounds. Creates optimal sleep environment by managing light/sound.
77	Voice-Controlled Pet Feeder with Portion Control	VoiceRecognition, Servos, Button, Text	Voice command ("Feed cat") via VoiceRecognition. Confirms on Text. Button press safety. Servos dispense preset food portion. Controls portions/schedule via voice.
78	Environmental Soundscape Augmentation System	AudioClassifier, SoundPlayer, GPS, LightSensor	Identifies ambient sounds (AudioClassifier). Based on sounds, location (GPS), time (LightSensor), SoundPlayer subtly adds complementary sounds (music in park, masking traffic). Enhanced auditory reality.
79	Interactive Dance Tutor with Real-Time Feedback	BodySensor, NotePlayer, Lamp, Text	Tracks user movements (BodySensor) following steps. Compares to target. NotePlayer gives rhythm cues. Lamps flash green (correct) / red (error). Text offers specific feedback. Interactive dance instruction.
80	Smart Bike Safety System with Orientation Lights	Acceleration, Orientation, Lamp, Button	Detects braking (Acceleration), triggers rear red Lamp. Detects leaning/turning (Orientation), activates amber turn Lamps. Button for manual signaling. Enhances cyclist visibility/safety.
81	ArUco Marker Scavenger Hunt Game Generator	ArUco, GPS, Text, TextToSpeech, Button	ArUco markers at GPS locations. Scan marker, receive next clue (Text/TextToSpeech). Button for hints. Customizable scavenger hunts combining physical exploration and digital interaction.
82	American Sign Language (ASL) Communication Aid	HandSensor, BodySensor, Text, TextToSpeech	Tracks hand shapes/movements (HandSensor) and facial/body cues (BodySensor). Interprets combination as signed phrases, displays translation (Text) or speaks it (TextToSpeech). Facilitates communication.
83	Responsive Stage Lighting based on Performer Movement	CameraMovement, BodySensor, Lamp, Servos	Tracks performer location (CameraMovement) and movement energy/style (BodySensor). Controls Lamps (color, intensity, focus via Servos) dynamically. Responsive lighting reacting to choreography.
84	Mood-Adjusting Ambient Environment Controller	FaceSensor, NoiseSensor, LightSensor, SoundPlayer, Lamp	Gauges mood (FaceSensor), measures noise (NoiseSensor), detects light (LightSensor). Adjusts sounds (SoundPlayer) and lighting (Lamp) for comfort/focus. Personalized adaptive environment.
85	Voice-Controlled Robotic Arm for Accessibility	VoiceRecognition, Servos, HandSensor, Haptic	Control robotic arm via voice commands (VoiceRecognition: "Arm up"). HandSensor for object detection. Haptic feedback for successful grip/resistance. Enables independence in daily tasks.
86	Children's Storybook with Sound and Light Effects	AudioClassifier, ArUco, SoundPlayer, Lamp	ArUco markers in book trigger events. AudioClassifier listens for page turns/words. Plays sounds (SoundPlayer), adds light effects (Lamp) based on marker/sound. Enhances storytelling immersion.
87	Dynamic Physical Therapy Feedback System	Acceleration, Inclination, Orientation, Haptic, Text, NotePlayer	Measures limb movement precisely (Acceleration, Inclination, Orientation). Haptic guides movement quality. Text displays reps/scores. NotePlayer gives motivational sounds. Comprehensive, engaging rehab support.
88	Interactive City Exploration Guide with Haptic Nav	GPS, Orientation, Haptic, TextToSpeech, Button, ArUco	Uses GPS/Orientation for location/direction. TextToSpeech gives info. Haptic pulses guide turns. Button for details. ArUco on landmarks triggers content. Multi-sensory city guide.
89	Gesture and Posture Controlled Drone Flight	HandSensor, BodySensor, Orientation, Servos	Hand gestures (HandSensor) control takeoff/landing. Body posture (BodySensor: leaning) controls direction. Orientation sensor for stable reference. Intuitive, full-body drone piloting (may need Servos for remote interface).
90	Smart Crib Monitoring System for Infants	PresenceSensor, CameraMovement, AudioClassifier, TextToSpeech, Lamp	Confirms baby presence (PresenceSensor). Detects movement/stillness (CameraMovement). Listens for crying (AudioClassifier). Alerts parents (TextToSpeech) on distress, optionally activates calming Lamp/sounds.
91	Facial Expression Controlled Art Generator	FaceSensor, Lamp, Servos, NotePlayer	Facial expression (FaceSensor) influences generative art parameters. Smile = warm colors (Lamp), faster tempo (NotePlayer). Neutral = cooler tones, slower rhythms. Servos manipulate physical elements (brushes).
92	Quiet Zone Enforcement System with Voice Warning	NoiseSensor, PresenceSensor, TextToSpeech, Lamp	Detects people (PresenceSensor) and noise (NoiseSensor) in quiet zone. Noise over threshold triggers visual warning (Lamp). Persistent noise triggers polite voice reminder (TextToSpeech).
93	Voice Interactive Museum Guide Robot	VoiceRecognition, TextToSpeech, ArUco, Servos, CameraMovement	Mobile robot navigates (CameraMovement, Servos). Interacts via VoiceRecognition. TextToSpeech provides info. Identifies exhibits (ArUco). Moves to exhibits on command. Guided tour with voice interaction.
94	Sound-Reactive Clothing with Haptics and Light	AudioClassifier, Haptic, Lamp, Acceleration	Detects music rhythm/sounds (AudioClassifier). Drives light patterns (Lamp) and rhythmic vibrations (Haptic) in clothing. Acceleration adds movement reaction. Visually/tactilely responsive clothing.
95	Advanced Driver Assistance Simulation	Acceleration, Inclination, Orientation, Haptic, SoundPlayer, Text	Captures mock driving actions (Acceleration, Inclination, Orientation). Simulates physics, gives visual (Text), auditory (SoundPlayer), and Haptic wheel feedback for training.
96	Tangible Programming Interface with ArUco Blocks	ArUco, Text, Servos, NotePlayer, Lamp	Arrange ArUco blocks (commands). System reads sequence, displays logic (Text), executes using Servos (robot), NotePlayer (sound), Lamp (light). Teaches coding tangibly.
97	Remote Collaboration Tool with Gesture Mirroring	HandSensor, BodySensor, Servos, TextToSpeech, CameraMovement	User movements (HandSensor, BodySensor) control remote robot rig (Servos) mimicking actions (view via CameraMovement). TextToSpeech for voice. Collaborative physical tasks across distances.
98	Adaptive Environment for Sensory Regulation	PresenceSensor, NoiseSensor, LightSensor, SoundPlayer, Lamp, Haptic	Detects user (PresenceSensor), monitors stimuli (NoiseSensor, LightSensor). Adjusts sound (SoundPlayer), light (Lamp), vibration (Haptic) based on profile/feedback for sensory regulation.

99	Voice and Gesture Controlled Smart Home Hub	VoiceRecognition, HandSensor, Text, Lamp, Switch, Servos	Multi-modal control via VoiceRecognition or HandSensor gestures. Text confirms actions. Controls lights (Lamp/Switch), blinds (Servos), etc. Flexible, accessible home control.
100	Sound Source Localization and Identification Display	AudioClassifier, Orientation, Text, Lamp, GPS	Estimates direction of classified sound (AudioClassifier + directionality + Orientation). Displays type/direction (Text, directional Lamps). GPS for location context/mapping.
101	Hand Gesture Controlled Light Color Change	HandSensor, Lamp	HandSensor interprets hand gestures/position. Lamp changes color/brightness in response. Creates touchless interface for light adjustment (art, calming spaces, accessibility).
102	Movement-Triggered Alarm with Button Reset	CameraMovement, Lamp, SoundPlayer, Button	CameraMovement detects motion, triggers flashing red Lamp and alert SoundPlayer. User presses Button to silence/reset. Simple interactive security demo.
103	Presence-Activated Welcome Message Speaker	PresenceSensor, TextToSpeech	PresenceSensor detects entry by comparing view to baseline. Triggers TextToSpeech welcome message ("Welcome!"). Automated auditory greeting for doorways/exhibits.
104	Ambient Light Responsive Musical Notes	LightSensor, NotePlayer	LightSensor measures brightness. Brightness value maps to pitch/frequency of notes from NotePlayer. Changing light creates shifting notes, reflecting ambient brightness musically.
105	ArUco Marker Triggered Servo Rotation	ArUco, Servos	Scans for specific ArUco markers. Identifying a designated marker triggers Servos to rotate to predefined position or execute movement. Initiates physical actions via visual tags.
106	Body Pose Activated Sound Effects Player	BodySensor, SoundPlayer	BodySensor tracks posture/movement landmarks. Recognizes specific poses (arms raised, T-pose). Detecting target pose plays corresponding sound effect (SoundPlayer). Trigger sounds via physical actions (games, performances).
107	Facial Expression Controlled Mood Lamp	FaceSensor, Lamp	FaceSensor detects basic expressions (happy, sad, surprise) without identification. Changes Lamp color based on expression (yellow=happy, blue=sad). Interactive mood lamp reflecting detected emotion.
108	Excessive Noise Level Haptic Alert	NoiseSensor, Haptic	NoiseSensor monitors sound level. If noise exceeds threshold, Haptic provides vibration feedback. Discreet tactile alert for loud environments or hearing impaired users.
109	Voice Command Displayed on Screen	VoiceRecognition, Text	VoiceRecognition converts speech to text. Transcribed text immediately displayed via Text component on screen. Real-time visual feedback for voice commands/dictation.
110	Spoken Identification of Classified Sounds	AudioClassifier, TextToSpeech	AudioClassifier identifies sounds (music, speech, alarms) using YAMNet. TextToSpeech announces the type of sound detected ("Detected sound: Siren"). Auditory awareness of sonic environment.
111	Device Acceleration Controlled Note Pitch	Acceleration, NotePlayer	Acceleration sensor measures motion. Magnitude of acceleration controls NotePlayer pitch. Shaking faster = higher pitch. Simple motion-controlled musical instrument.
112	Device Tilt Adjusts Servo Position	Inclination, Servos	Inclination sensor measures device tilt. Tilt information controls angular position of Servos. Tilting device rotates servos proportionally. Intuitive physical control via orientation.
113	Device Orientation Sets Lamp Color	Orientation, Lamp	Orientation sensor determines spatial orientation (direction). Orientation data mapped to control Lamp color (North=Red, East=Green, etc.). Visual compass/orientation indicator via light.
114	Switch Toggles Sound Playback On/Off	Switch, SoundPlayer	Interactive Switch acts as on/off toggle. Switch 'on' starts SoundPlayer playback. Switch 'off' stops playback. Straightforward manual control over sound output.
115	Knob Controls Lamp Brightness Level	Knob, Lamp	Interactive Knob (rotary dial) inputs variable value. Input value mapped to Lamp brightness intensity. Clockwise rotation = brighter, counter-clockwise = dimmer. Intuitive analog light control.
116	Current GPS Coordinates Text Display	GPS, Text	GPS acquires latitude/longitude. Coordinate info formatted and sent to Text component for screen display. Simple way to see current location coordinates in real-time.
117	Smart Nightlight Activated by Presence and Quiet	PresenceSensor, NoiseSensor, Lamp	PresenceSensor detects entry; NoiseSensor monitors sound. If present & noise is below quiet threshold, Lamp turns on dimly. Intelligent nightlight activates only when needed and unlikely to disturb.
118	Contextual Spoken Advice Based on Light and Presence	LightSensor, FaceSensor, TextToSpeech	Measures brightness (LightSensor); detects face presence (FaceSensor). If light is high & face detected, TextToSpeech gives advice ("Consider sunglasses"). Context-aware suggestions.
119	Pointing Gesture Selects ArUco Marker Music Note	ArUco, HandSensor, NotePlayer	ArUco markers associated with notes. HandSensor detects pointing gesture. If pointing at marker, ArUco identifies it, NotePlayer plays corresponding note. Interactive spatial music selection.
120	Posture Correction Feedback via Haptics and Tilt	BodySensor, Inclination, Haptic	BodySensor monitors posture (slouching). Inclination measures device tilt. If poor posture detected while sitting/standing (based on tilt), Haptic vibrates as reminder. Promotes ergonomic habits.
121	Voice Command Servo Control System	VoiceRecognition, Servos	VoiceRecognition captures spoken commands ("Servo one ninety degrees"). System parses command (target servo, action) and instructs corresponding Servo to move. Hands-free mechanical control.
122	Sound Classification Alert System for Hearing Impaired	AudioClassifier, Lamp, Haptic	AudioClassifier identifies critical sounds (alarms, sirens). Upon detection, flashes Lamp brightly and activates Haptic with distinct vibration pattern. Crucial non-auditory environmental awareness.
123	Motion-Reactive Soundscape Generator	Acceleration, CameraMovement, SoundPlayer	Device motion (Acceleration) controls one sound aspect (pitch). Camera movement (CameraMovement) influences another (volume). Blends internal/external motion into dynamic audio experience.
124	Location-Aware Direction Display	Orientation, GPS, Text	GPS determines location (lookup place name). Orientation determines facing direction. Combined info (location, direction) displayed on Text screen. Comprehensive navigation info.
125	Hand Gesture Servo Selection with Knob Control	HandSensor, Knob, Servos	HandSensor gestures select target servo (1 or 2). User rotates Knob to precisely adjust selected servo's position/speed. Intuitive selection + fine-grained analog control.
126	Empathetic Feedback System Based on Facial Expression	FaceSensor, TextToSpeech, SoundPlayer	FaceSensor detects expression (sad). System responds empathetically: SoundPlayer plays calming music, TextToSpeech gives gentle message ("Hope things get better"). Emotionally responsive interaction.
127	Smart Auto Light Activated by Presence & Low Light	PresenceSensor, LightSensor, Switch, Lamp	Lamp turns on only if PresenceSensor detects person, LightSensor shows low light, and master Switch is 'on'. Context-aware lighting solution activating when needed.
128	Interactive ArUco Marker Information Display	ArUco, Text, Button	Camera sees ArUco marker, ArUco identifies it. Associated info displayed on Text screen. If multiple info pieces, Button cycles through descriptions. Interactive kiosk/exhibit element.
129	Body Movement Controlled Music and Light Show	BodySensor, NotePlayer, Lamp	BodySensor tracks movement/posture. Data translated to musical sequences (NotePlayer). Lamp changes color/intensity in sync. Expressive audiovisual performance controlled by body.
130	Ambient Noise Analysis and Display	NoiseSensor, AudioClassifier, Text	Monitors soundscape. NoiseSensor measures loudness. If high, AudioClassifier identifies dominant sound type (traffic). Displays level assessment ("High Noise") and source ("Traffic Detected") on Text.
131	Voice-Controlled Lamp with Haptic Confirmation	VoiceRecognition, Lamp, Haptic	Control Lamp via voice commands ("Lamp on"). Processed by VoiceRecognition. On successful execution, Haptic gives brief vibration pulse for confirmation. Enhances interaction reliability.
132	Multi-Sensor Motion Controlled Sound Synthesizer	Acceleration, Inclination, Orientation, SoundPlayer	Generates complex sounds (SoundPlayer). Acceleration controls attack/rhythm. Inclination (tilt) adjusts filters/effects. Orientation determines pitch/instrument. Rich sonic interaction via movement.
133	Location Announcement Button for Navigation Aid	GPS, TextToSpeech, Button	GPS tracks location. User presses Button. System gets GPS data (looks up street name?), TextToSpeech announces location aloud ("Near Oak Street"). On-demand location awareness.
134	Simultaneous Hand and Face Gesture Display	HandSensor, FaceSensor, Text	Detects hand gestures (HandSensor) and facial expressions (FaceSensor). Displays descriptions of both simultaneously on Text screen ("Hand: Pointing, Face: Smile"). Feedback/educational tool.
135	Location-Specific Motion Detection Servo Activation	CameraMovement, ArUco, Servos	ArUco markers define zones. CameraMovement detects motion. If motion near Marker A, activates Servo 1; near Marker B, activates Servo 2. Spatially targeted responses to movement.
136	Ambient Light and Noise Driven Generative Music	LightSensor, NoiseSensor, NotePlayer	Generates ambient soundscape. LightSensor determines pitch/key (brighter=higher). NoiseSensor influences rhythm/density (louder=more complex). Music adapts to surrounding light/sound.
137	Posture Monitoring System with Switchable Alert Lamp	BodySensor, Switch, Lamp	BodySensor tracks posture. Switch turns monitoring on/off. If 'on' and slouching detected, activates Lamp (e.g., red) as visual alert.
138	Emotionally Aware Voice Interaction Confirmation	FaceSensor, VoiceRecognition, TextToSpeech	Combines voice input (VoiceRecognition) and facial analysis (FaceSensor). If command ("Play happy music") matches expression (smile), confirms with matched sentiment (TextToSpeech: "Okay, playing happy music!"). Adds emotional context validation.
139	Important Sound Notification with Haptic Feedback Options	AudioClassifier, Haptic, Button	AudioClassifier identifies important sounds (sirens). Triggers specific Haptic patterns. Button acknowledges alert, stops vibration, or cycles patterns. Customizable tactile awareness.
140	Servo-Actuated Self-Leveling Platform via Knob Input	Inclination, Knob, Servos	User sets target tilt angle (Knob). Inclination measures actual platform tilt (controlled by Servos). System adjusts Servos to maintain target angle. Basic self-leveling mechanism.
141	Directional Awareness via Light Color and Sound Cues	Orientation, SoundPlayer, Lamp	Orientation determines direction (N, E, S, W). Lamp changes color based on direction (Red=North). SoundPlayer plays corresponding subtle tone. Multi-sensory spatial orientation feedback.
142	Presence Logging with Location and Time Stamp Display	PresenceSensor, GPS, Text	PresenceSensor detects entry. Logs event with current time and GPS location. Text displays timestamp/GPS of most recent detection. Simple activity log for monitoring traffic.
143	Motion-Activated Haptic Feedback for Tagged Object	ArUco, Acceleration, Haptic	ArUco identifies marker on object. If Acceleration detects object movement/impact while marker visible, Haptic provides vibration. Links object motion, ID, and tactile response.
144	Hand Gesture to Speech Conversion System	HandSensor, Text, TextToSpeech	HandSensor recognizes gestures. Corresponding meaning displayed (Text) and spoken (TextToSpeech). Basic assistive communication tool translating gestures to text/speech.
145	Adaptive Lighting Based on Movement and Ambient Light	CameraMovement, LightSensor, Lamp	Adjusts Lamp brightness. Motion intensity (CameraMovement) sets base brightness. Ambient light (LightSensor) scales response (brighter response in dark, subdued in light).
146	Expressive Music Generation from Body and Face Input	BodySensor, FaceSensor, NotePlayer	BodySensor (posture) controls melody complexity/rhythm (NotePlayer). FaceSensor (expression) influences musical mode/instrument (smile=major key). Shape music via body/face.
147	Voice-Activated Quiet Mode Indication Light	NoiseSensor, VoiceRecognition, Lamp	NoiseSensor monitors sound. If high, listens (VoiceRecognition) for "Activate quiet mode". On command, dims/changes Lamp color to indicate quiet mode. Visual cue triggered by voice.
148	Sound Recognition Triggered Animatronic Response	AudioClassifier, Servos, Text	AudioClassifier identifies sounds (birdsong). Triggers corresponding Servo action (move mechanical bird). Text displays recognized sound ("Birdsong Detected"). Simple animatronic response to sound.
149	Digital Level Tool with Haptic Feedback and Zeroing	Inclination, Haptic, Button	Inclination measures tilt. As device nears level, Haptic intensity increases. Button 'zeros' readings, setting current orientation as reference for relative angle feedback.
150	GPS and Orientation Driven Physical Pointer Servo	Orientation, GPS, Servos	Gets current location (GPS) and orientation. Calculates direction to target GPS coordinate. Uses Servos to move physical pointer to always point towards target location. Dynamic physical compass.
151	Presence-Initiated Handshake Sound Greeting	PresenceSensor, HandSensor, SoundPlayer	PresenceSensor detects approach, activates HandSensor. If HandSensor sees 'handshake'/'wave', SoundPlayer plays greeting. Multi-stage welcome (proximity + gesture).
152	Light Level Display with Adjustable Threshold Knob	LightSensor, Knob, Text	LightSensor measures ambient light, displayed on Text. User adjusts threshold via Knob, also displayed. Threshold can trigger other actions.
153	ArUco-Identified Person Mood Indicator Lamp	ArUco, FaceSensor, Lamp	Identifies person via ArUco badge. FaceSensor analyzes expression. Lamp near person changes color based on detected mood (green=smile, yellow=neutral). Visual, anonymized mood indicator.
154	Potential Fall Detection Alert System Using Posture and Acceleration	BodySensor, Acceleration, Haptic	BodySensor monitors posture. Acceleration detects sudden impact/fall motion. If impact + lying posture detected, triggers strong Haptic alert. Signals potential fall.
155	Voice and Non-Verbal Sound Command Recognition Announcement	VoiceRecognition, AudioClassifier, TextToSpeech	Listens for spoken commands (VoiceRecognition) and non-verbal sounds (AudioClassifier: clap, whistle). When either detected, TextToSpeech announces what was heard ("Voice command: Lights On" or "Detected sound: Double Clap"). Confirms input reception.
156	Combined Environmental Motion and Noise Haptic Alert	CameraMovement, NoiseSensor, Haptic	Haptic intensity adjusted by detected motion (CameraMovement) and loudness (NoiseSensor). Strongest vibration for high motion + loud noise. Multi-sensory environmental disturbance alert.
157	Orientation and Tilt Controlled Musical Chord Player	Inclination, Orientation, NotePlayer	Orientation (N, E, S, W) determines root note (NotePlayer: N=C). Inclination (tilt) determines chord type (major, minor). Play chords by rotating/tilting device.
158	Location-Based Audio Tour Activated by Switch	Switch, GPS, SoundPlayer	User activates tour (Switch). GPS tracks location. Entering predefined zones triggers SoundPlayer to play relevant audio commentary/sounds. Hands-free, location-aware guided tour.
159	Button-Driven Servo Positioning with Text Feedback	Button, Text, Servos	Buttons command discrete servo positions (Button 1 -> Servo 1 to 0 deg). Text displays confirmation ("Button 1 Pressed: Servo 1 to 0 deg"). Simple control with visual confirmation.
160	Hand-Specific Knob Control for Dual Lamp Parameters	Knob, HandSensor, Lamp	HandSensor detects which hand (left/right) is near Knob. Rotating Knob with left hand controls brightness; right hand controls hue. Single knob manages multiple parameters contextually.
161	Workstation Occupancy Announcer Using ArUco Tags	PresenceSensor, ArUco, TextToSpeech	Workstations marked with ArUco tags. PresenceSensor detects person nearby. If presence + ArUco tag seen, identifies station, TextToSpeech announces occupancy ("User detected at Workstation Beta"). Awareness in shared spaces.
162	Ambient Light and Sedentary Posture Movement Reminder	LightSensor, BodySensor, Haptic	If LightSensor detects low light, monitors posture (BodySensor). If sedentary posture persists long time in low light, Haptic gives gentle vibration reminder to move/stretch.
163	Surprise Reaction Calming Sound Response	FaceSensor, NoiseSensor, SoundPlayer	If FaceSensor detects 'surprise' + NoiseSensor detects sudden loud noise, interprets as startling event. Automatically plays brief calming sound (SoundPlayer) to mitigate startle response.
164	Voice Command Color Control with Tilt Brightness Adjustment	VoiceRecognition, Inclination, Lamp	Set Lamp color via voice commands (VoiceRecognition: "Set lamp purple"). Brightness controlled by device tilt (Inclination sensor: tilt forward=brighter). Combines voice selection + physical gesture control.
165	Sound Classification Driven Music with Acceleration Tempo	AudioClassifier, Acceleration, NotePlayer	AudioClassifier identifies ambient sound type (speech, music), determines music style (NotePlayer). Tempo controlled by device movement (Acceleration: faster movement = faster tempo). Music reflects environment + activity.
166	Servo Pointer Indicating Environmental Motion Direction	CameraMovement, Orientation, Servos	CameraMovement detects motion direction in view. Orientation gives device direction. Calculates relative motion direction, controls Servo pointer to indicate motion origin relative to device.
167	Geofence Boundary Crossing Haptic Alert with Switch Toggle	GPS, Switch, Haptic	GPS tracks location relative to defined geofence. If device crosses boundary & monitoring Switch is 'on', Haptic vibrates. Alerts user to boundary crossing only when active.
168	Hand Gesture Number Input with Button Confirmation	HandSensor, Button, Text	HandSensor recognizes number gestures (1 finger='1'). Recognized number displayed (Text). User presses Button to confirm input. Intuitive gesture number entry + button validation.
169	Object-Specific Sound Parameter Adjustment via ArUco and Knob	ArUco, Knob, SoundPlayer	Recognizes ArUco marker on object, loads associated sound (SoundPlayer). User uses Knob to adjust sound parameter (volume, speed) for that specific object's sound. Tactile control over sounds linked to visual tags.
170	Posture Analysis with Spoken and Textual Feedback	BodySensor, Text, TextToSpeech	BodySensor analyzes posture (slouching, leaning). Provides feedback via Text ("Posture Alert: Slouching") and spoken aloud (TextToSpeech: "Please sit up straighter"). Reinforces posture awareness visually/auditorily.
171	Positive Reinforcement Lamp via Combined Face and Hand Signals	FaceSensor, HandSensor, Lamp	If FaceSensor detects smile + HandSensor detects 'thumbs-up', interprets as strong positive feedback. Activates Lamp (bright green/pattern). Reinforces positive interaction visually.
172	Context-Aware Do-Not-Disturb Haptic Notification	NoiseSensor, LightSensor, Switch, Haptic	User enables 'busy' state (Switch). While busy, monitors disturbances (NoiseSensor: loud sounds; LightSensor: sudden light changes). If disturbance detected, Haptic gives discreet vibration alert. Notifies user without audio.
173	Voice-Activated "Where Am I?" Location Query	VoiceRecognition, GPS, Text	User asks "Where am I?" (VoiceRecognition). System queries GPS for coordinates. Location data formatted (maybe resolved to address) and displayed on Text screen. Easy voice-initiated location check.
174	Ambient Sound Triggered Musical Motifs in Orientation-Set Key	AudioClassifier, Orientation, NotePlayer	Orientation sets musical key (N=C Major). AudioClassifier identifies sounds (rain). Recognized sound triggers NotePlayer to play corresponding musical motif in the current key. Adaptive soundscapes.
175	Impact-Responsive Stabilizing Servos with Haptic Signal	Acceleration, Servos, Haptic	Acceleration detects impacts on platform (controlled by Servos). Triggers counter-movements from Servos for stabilization. Haptic signals user that impact was detected/compensated.
176	Digital Inclinometer Display with Button Zeroing Feature	Inclination, Text, Button	Inclination measures tilt angles, displayed numerically (Text) like digital level. Button sets current orientation as zero-degree reference for relative angle measurements.
177	Presence and Movement Intensity Driven Ambient Sound Player	PresenceSensor, CameraMovement, SoundPlayer	PresenceSensor confirms occupancy. CameraMovement analyzes movement intensity. Based on activity level, SoundPlayer plays different ambient sounds (calm for low, energetic for high). Adapts atmosphere.
178	ArUco-Assisted Light Source Identification and Measurement	LightSensor, ArUco, Lamp	Identify light source via ArUco marker nearby. LightSensor measures brightness at marker position. Feedback Lamp indicates status/intensity of tagged source. Analyze/manage lighting.
179	Virtual Musical Instrument Played by Full Body and Hand Gestures	HandSensor, BodySensor, NotePlayer	HandSensor tracks hand movements (notes, pitch). BodySensor tracks posture/larger movements (timbre, volume). Expressive musical performance using coordinated gestures.
180	Facial Gesture Input System with Haptic Confirmation Toggle	FaceSensor, Switch, Haptic	FaceSensor detects deliberate actions (blink, eyebrow raise). Switch enables/disables mode. When active, detected gestures are input commands. Recognized gesture triggers Haptic pulse confirmation.
181	Noise Level Meter with Adjustable Sensitivity Knob	NoiseSensor, Text, Knob	NoiseSensor measures decibels, displayed on Text. User rotates Knob to set noise threshold (also displayed). Threshold triggers alerts/actions when noise exceeds sensitivity.
182	Dual-Mode Servo Control via Voice and Fine-Tuning Hand Gestures	VoiceRecognition, HandSensor, Servos	Coarse control via VoiceRecognition ("Move arm up"). Fine adjustments via HandSensor gestures (hand distance controls angle). Detailed refinement after initial voice command.
183	Location-Tagged Sound Event Logging and Display	AudioClassifier, GPS, Text	AudioClassifier identifies sounds. Logs sound type + GPS coordinates. Text displays most recent log ("Siren @ 40.71N, 74.00W"). Mobile log of sound occurrences mapped geographically.
184	Virtual Fluid Lamp Simulation with Motion Effects	Acceleration, Orientation, Lamp	Simulates colored fluid (Lamp). Color changes based on Orientation. Acceleration (shaking) causes light to flicker/swirl, mimicking disturbed fluid. Motion-reactive light object.
185	Tilt-Controlled Rolling Sound with Haptic Bumps	Inclination, SoundPlayer, Haptic	Simulates rolling ball sound/feel. Tilt (Inclination) controls rolling sound pitch/volume (SoundPlayer). Sudden tilt changes trigger Haptic pulses (bumps).
186	GPS Path Generated Musical Melody with Location Text	GPS, Text, NotePlayer	GPS coordinate changes converted to musical notes (NotePlayer), translating physical path into melody. Text displays current coordinates/location name. Links sound to journey.
187	Presence-Aware Facial Detection Greeting System	PresenceSensor, FaceSensor, TextToSpeech	PresenceSensor detects entry. If present, activates FaceSensor. If face detected, TextToSpeech gives personalized greeting ("Hello there!"). If presence but no face, silent or generic alert.
188	Theremin-Style Instrument Using Hand Distance and Ambient Light	LightSensor, HandSensor, NotePlayer	Hand distance (HandSensor) controls pitch (NotePlayer). Ambient brightness (LightSensor) controls volume. Touchless instrument controlled by hand position + light.
189	Interactive Zone-Based Soundscape Using ArUco Markers and Body Track	ArUco, BodySensor, SoundPlayer	Zones marked with ArUco tags. BodySensor tracks user position. Entering ArUco-identified zone triggers SoundPlayer to play corresponding sounds for that zone. Immersive location-aware audio environment.
190	Differentiating External vs. Internal Motion with Haptic Feedback	CameraMovement, Acceleration, Haptic	CameraMovement detects external motion; Acceleration detects device motion. Provides different Haptic patterns: external only, internal only, or both. Aids situational awareness.
191	Noise-Reactive Lamp with Orientation-Based Color Projection	NoiseSensor, Orientation, Lamp	NoiseSensor controls brightness (louder=brighter). Orientation determines color. Responsive light reflecting noise level (brightness) and device orientation (color).
192	Voice Command System with Button Confirmation and Spoken Clarification	VoiceRecognition, Button, TextToSpeech	Voice commands (VoiceRecognition). Critical actions need TextToSpeech confirmation ("Confirm?") + Button press (Yes/No). Ambiguous commands trigger clarifying questions (TextToSpeech). Robust interface with validation/dialogue.
193	Sound Pattern Recognition Servo Activation with Enable Switch	AudioClassifier, Switch, Servos	AudioClassifier recognizes specific sound pattern (whistle, clap). If pattern detected & Switch is 'enabled', triggers Servo action (unlock latch). Secret knock/sound activation.
194	Digital Protractor with Target Angle Knob and Difference Display	Inclination, Knob, Text	Inclination measures current angle (displayed on Text). Knob sets target angle (displayed). System calculates/displays difference between current and target. Helps precise orientation adjustment.
195	Directional Pointing Guidance via Orientation and Haptics	Orientation, HandSensor, Haptic	Orientation gives device direction. HandSensor detects user pointing direction. Haptic feedback only when user points in same direction as Orientation sensor indicates. Tactile guidance for directions.
196	Environmental Logging of Light Levels with GPS Coordinates	GPS, LightSensor, Text	Periodically logs ambient light (LightSensor) + GPS coordinates. Creates time-stamped log of light at different locations. Text displays recent reading/trends. Environmental monitoring.
197	Automated Quiet Reminder Based on Presence and Noise Level	PresenceSensor, NoiseSensor, TextToSpeech	If PresenceSensor detects entry into quiet area + NoiseSensor measures noise over threshold, TextToSpeech issues polite reminder ("Quiet zone reminder..."). Automated noise policy enforcement.

198	Interactive Storybook with ArUco-Triggered Text and Sound	ArUco, Text, NotePlayer	Scan ArUco marker on page. Triggers Text display (story paragraph) and NotePlayer (background music/sounds) for that page/scene. Multi-sensory interactive reading.
199	Dynamic Light Patterns Reflecting Body Activity and Hand Gestures	BodySensor, HandSensor, Lamp	BodySensor (activity level) sets base light pattern/speed. HandSensor (gestures) triggers overlaid flashes/effects. Lighting reflects general energy + specific actions.
200	Empathetic Haptic Feedback Based on Detected Emotion	FaceSensor, VoiceRecognition, Haptic	Gauges emotion via FaceSensor (+ vocal tone analysis). Provides corresponding Haptic feedback based on inferred emotion (gentle pulse for sad, strong buzz for excited). Tactile empathetic response.
201	Presence-Activated Spoken Welcome Message System	PresenceSensor, TextToSpeech	PresenceSensor detects entry (compares scene to baseline), triggers TextToSpeech welcome message. Automated auditory greeting for entrances/exhibits.
202	Light Level Controlled Ambient Music Player	LightSensor, NotePlayer	LightSensor measures brightness. Detected level controls NotePlayer output (brighter=higher/faster notes, dimmer=lower/slower). Adaptive soundscape reflecting illumination.
203	Marker-Triggered Robotic Arm Action Controller	ArUco, Servos	Detecting known ArUco marker commands Servos to predefined position/sequence. Tagged objects trigger mechanical actions (displays, automation, robotics).
204	Body Movement Generates Interactive Sound Effects	BodySensor, SoundPlayer	BodySensor tracks pose/movement. Different movements (raise arms, bend) trigger corresponding sound effects (SoundPlayer). Transforms physical actions into auditory experience (games, therapy, dance).
205	Facial Expression Controls Mood Lighting Intensity	FaceSensor, Lamp	FaceSensor recognizes expressions (happy, sad). Adjusts Lamp color/brightness based on expression (smile=brighter/warmer). Responsive ambient lighting reflecting apparent mood.
206	Noise Threshold Vibration Alert System Device	NoiseSensor, Haptic	NoiseSensor monitors sound level. If exceeds threshold, triggers Haptic vibration. Silent alert for loud environments or hearing-impaired users.
207	Voice Dictation Displayed on Screen Instantly	VoiceRecognition, Text	VoiceRecognition converts speech to text. Recognized text immediately displayed via Text component. Transcribes speech for notes, messaging, control without typing.
208	Sound Classification Visual Feedback Indicator Light	AudioClassifier, Lamp	AudioClassifier identifies sounds (music, speech). Classifying specific sound activates Lamp (possibly different colors/patterns per sound type). Visual alert system for audio events.
209	Motion Intensity Modulates Sound Playback Characteristics	Acceleration, SoundPlayer	Acceleration measures movement intensity. Data modulates SoundPlayer parameters (volume, pitch, speed). Shaking harder increases volume. Dynamic motion-controlled sound.
210	Device Tilt Adjusts Servo Motor Position	Inclination, Servos	Inclination measures tilt angle. Tilt info mapped to control Servo position (tilt forward=clockwise). Intuitive physical control via tilting gestures.
211	Device Orientation Selects Musical Melodies Playlist	Orientation, NotePlayer	Orientation (upright, flat) triggers NotePlayer to play distinct pre-programmed melodies/scales. Interactive music player controlled by physical positioning.
212	Switched Lamp with Haptic State Confirmation	Switch, Lamp, Haptic	Switch toggles Lamp on/off. Each state change triggers brief Haptic vibration. Tactile confirmation of action, enhances usability.
213	Button Press Triggers Predefined Spoken Phrase	Button, TextToSpeech	Pressing digital Button triggers TextToSpeech to vocalize pre-configured phrase. Simple announcements, learning tools (button=definition), accessibility feedback.
214	Knob Controls Musical Note Pitch Selection	Knob, NotePlayer	Rotating digital Knob maps value to NotePlayer pitch. Allows smooth sweeping through notes. Simple dial-controlled musical instrument interface.
215	Voice Input Dictates Text with Readback	Text, VoiceRecognition, TextToSpeech	VoiceRecognition converts speech to text (displayed via Text). TextToSpeech reads recognized text aloud. Immediate auditory feedback verifies accuracy. Accessible communication/dictation.
216	Location-Based Audio Snippet Player Service	GPS, SoundPlayer	GPS tracks location. Entering predefined zones triggers SoundPlayer to play location-relevant audio (history, sounds, reminders). Enriches interaction with surroundings.
217	Presence Detection Triggers Physical Servo Movement	PresenceSensor, Servos	PresenceSensor detects person, signals Servos. Servos perform action (wave flag, open gate). Immediate physical response to presence.
218	Ambient Light Level Modulates Haptic Intensity	LightSensor, Haptic	LightSensor measures brightness. Intensity data controls Haptic strength/frequency (brighter=stronger vibration). Non-visual perception of light changes (sensory substitution).
219	Camera Motion Translates into Musical Notes	CameraMovement, NotePlayer	CameraMovement detects motion direction/magnitude. Data translated to musical parameters (direction=pitch, speed=duration). Generate music by moving hands/objects in view.
220	Scan Marker to Hear Associated Information	ArUco, TextToSpeech	Point camera at ArUco marker. System recognizes marker, retrieves info, TextToSpeech speaks it aloud. Interactive learning tool (scan object = auditory description).
221	Hand Gestures Control Dual Servo Mechanisms	HandSensor, Servos	HandSensor tracks gestures/landmarks. Gestures/finger positions mapped to control two independent Servos (robotic gripper, separate parts). Intuitive hand movement control.
222	User Posture Affects Ambient Lamp Color	BodySensor, Lamp	BodySensor analyzes posture (upright, slouching). Posture info changes Lamp color/intensity (good=green, slouching=red). Visual feedback for ergonomic awareness.
223	Facial Expressions Trigger Corresponding Musical Tones	FaceSensor, NotePlayer	FaceSensor detects expressions (joy, surprise). Triggers NotePlayer to play specific notes/motifs associated with expression (smile=major chord). Emotive auditory feedback based on facial cues.
224	Sustained Noise Level Adjusts Lamp Brightness	NoiseSensor, Lamp	Calculates average noise level over short period. Value smoothly adjusts Lamp brightness (higher noise=brighter). Visually represents acoustic environment.
225	Voice Commands Operate Servo Motor Positions	VoiceRecognition, Servos	Voice commands ("Servo one, position 90"). VoiceRecognition interprets, translates to Servo control signals (move to angle, perform action). Hands-free mechanical operation.
226	Display Classified Sound Type on Screen	AudioClassifier, Text	AudioClassifier identifies/classifies sounds ("Speech," "Music"). Name of detected category displayed as text (Text component). Real-time info about surrounding sound types.
227	Acceleration Generates Dynamic Haptic Feedback Patterns	Acceleration, Haptic	Acceleration detects motion changes/impacts. Data translated into varying haptic patterns (sharp movement=strong pulse, gentle=soft vibration). Tactile feedback related to physical interactions.
228	Device Tilt Controls Color Mixing on Lamp	Inclination, Lamp	Inclination measures tilt on multiple axes. Tilt values control Lamp color mixing (tilt forward=more red). Intuitively mix colors by manipulating device.
229	Display Real-time Device Orientation Data Textually	Orientation, Text	Orientation calculates pitch, yaw, roll. Angular values continuously updated and displayed as numerical text (Text component). Real-time readout of spatial orientation.
230	Switch Controls Start/Stop of Background Audio	Switch, SoundPlayer	Flipping digital Switch 'on' starts SoundPlayer audio (music, soundscape); 'off' stops playback. Simple manual control for background audio activation.
231	Button Press Triggers Confirming Haptic Pulse	Button, Haptic	Pressing digital Button triggers immediate short Haptic vibration. Tactile feedback confirms button press registration. Improves UX on touchscreens.
232	Knob Adjusts Lamp Brightness or Saturation	Knob, Lamp	Rotating digital Knob maps value to control Lamp brightness or color saturation. Smooth, fine-grained analogue control over light properties.
233	Display Current GPS Coordinates Textually Information	GPS, Text	GPS acquires latitude/longitude. Data formatted and displayed as readable text (Text component). Provides precise geographic position for navigation/tagging.
234	Presence Detection Plays Brief Musical Chime	PresenceSensor, NotePlayer	Detecting entry/exit (PresenceSensor) triggers NotePlayer to play short musical chime. Unobtrusive auditory notification of presence changes.
235	Light Sensor Triggers Spoken Light Condition Alerts	LightSensor, TextToSpeech	When light level changes significantly (crosses thresholds), TextToSpeech vocalizes description ("It is now bright"). Audible environmental info, good for visually impaired.
236	Scan Object Marker Plays Corresponding Sound Effect	ArUco, SoundPlayer	Scan ArUco marker on object/card. System identifies, triggers SoundPlayer to play associated sound effect (picture of cat=meow). Interactive educational toys/exhibits.
237	Hand Gestures Play Sequences of Notes	HandSensor, NotePlayer	HandSensor recognizes gestures (thumbs up, pointing). Each gesture triggers NotePlayer to play unique note sequence/chord. Play music via intuitive hand movements.
238	Body Posture Monitor Gives Spoken Ergonomic Feedback	BodySensor, TextToSpeech	BodySensor analyzes posture. If poor posture detected (slouching), TextToSpeech provides corrective verbal feedback ("Please sit up straighter"). Promotes ergonomic habits.
239	Detected Facial Expression Generates Subtle Haptic Feedback	FaceSensor, Haptic	FaceSensor identifies subtle expressions/muscle movements. Mapped to generate low-intensity haptic patterns (smile=gentle pulse). Biofeedback or emotional awareness tool via tactile cues.
240	High Noise Levels Trigger Calming Sound Playback	NoiseSensor, SoundPlayer	If NoiseSensor detects high noise for duration, automatically activates SoundPlayer (calming sounds, white noise). Mitigates stressful noise pollution.
241	Voice Commands Control Lamp State and Color	VoiceRecognition, Lamp	Voice commands ("Turn on light," "Set lamp blue"). VoiceRecognition processes, adjusts Lamp state/color/brightness. Convenient hands-free lighting control.
242	Sound Classification Triggers Distinct Haptic Alerts	AudioClassifier, Haptic	AudioClassifier identifies important sounds (doorbell, alarm). Triggers unique Haptic vibration pattern associated with specific sound. Essential non-auditory alerts for hearing impaired.
243	Acceleration Creates Virtual Spirit Level Light	Acceleration, Lamp	Acceleration data determines stillness/movement rate. Controls Lamp output (green=still/level, changes color/flickers if moved/tilted). Visual representation of stability/motion.
244	Device Tilt Displays Contextual Text Instructions	Inclination, Text	Text component displays messages based on device tilt (Inclination). Tilt forward=step 1, left=hint, right=next step. Interactive physical navigation of information.
245	Orientation Provides Directional Haptic Navigation Cues	Orientation, Haptic	Orientation determines facing direction. Haptic provides directional cues (vibrates stronger on side facing target). Guides user towards destination without visual/audio feedback.
246	Switch Activation Announces System Status Verbally	Switch, TextToSpeech	Flipping digital Switch triggers TextToSpeech announcement of new status ("Heating system activated"). Clear auditory confirmation of action and state change.
247	Button Press Activates Servo Mechanism Action	Button, Servos	Pressing digital Button triggers predefined Servo action (rotate to angle, full rotation). Direct user initiation of physical mechanical action via button interface.
248	Knob Scrolls Through Text Menu Options	Knob, Text	List of options displayed (Text). Rotating digital Knob scrolls through list, highlighting selection. Analog-style control for Browse menus/lists.
249	Lamp Color Reflects Current Geographic Zone	GPS, Lamp	GPS determines location. Checks if within predefined geofences. Lamp changes color based on current zone (blue=park, yellow=commercial). Ambient location awareness.
250	Subtle Haptic Alert on Presence Detection	PresenceSensor, Haptic	PresenceSensor detects entry, triggers brief, subtle Haptic vibration. Silent, personal notification of presence. Discreet monitoring, confirms sensor activation tactilely.
251	Light Sensor Controls Servo-Adjusted Window Blinds	LightSensor, Servos	LightSensor measures external light. Based on reading, Servos auto-adjust window blinds/louvers to optimize indoor lighting (open=dim, close/tilt=intense sunlight). Automates natural light management.
252	Display Detected Camera Motion Description Textually	CameraMovement, Text	CameraMovement detects motion (direction, magnitude). Formats info into description ("Moderate movement detected left") displayed via Text component. Textual summary of visual activity.
253	ArUco Marker Recognition Confirmed by Lamp Color	ArUco, Lamp	Detecting specific ArUco marker illuminates Lamp in predefined color (e.g., green) for successful recognition. Different marker might trigger different color. Immediate visual feedback on marker detection.
254	Display Recognized Hand Gesture Name Textually	HandSensor, Text	HandSensor detects/classifies gestures ("Victory," "Thumbs Up"). Name of recognized gesture displayed via Text component. Visual feedback for gesture control or analysis.
255	Posture Analysis Triggers Targeted Haptic Feedback	BodySensor, Haptic	BodySensor tracks pose. Detects issues (shoulders forward), triggers Haptic feedback localized to relevant area (wearable/placed device). Cues user towards correction. Personalized physical ergonomic guidance.
256	Detected Facial Expression Announced via Speech	FaceSensor, TextToSpeech	FaceSensor identifies expressions (happiness, surprise). TextToSpeech verbally announces recognized expression ("Smile detected"). Used in installations, assistive tech (social cues), biofeedback.
257	Display Current Noise Level Description Textually	NoiseSensor, Text	NoiseSensor measures decibels. Interpreted into description ("Quiet," "Loud") or numerical dB value, displayed via Text component. Clear understanding of current noise conditions.
258	Speak Musical Note Name to Play It	VoiceRecognition, NotePlayer	User speaks note name ("Play C4"). VoiceRecognition interprets, triggers NotePlayer to produce corresponding tone. Hands-free note generation or tuning via voice.
259	Classified Sound Triggers Related Servo Action Toy	AudioClassifier, Servos	AudioClassifier identifies sounds. Target sound (dog bark) triggers Servo on toy (wag tail). Interactive toys reacting realistically to specific sounds.
260	Display Real-time XYZ Acceleration Data Textually	Acceleration, Text	Acceleration measures X, Y, Z values continuously. Raw numerical values displayed in real-time via Text component. Useful for physics, motion analysis, vibration monitoring.
261	Device Tilt Modulates Music Pitch or Tempo	Inclination, NotePlayer	Inclination measures tilt angle. Angle controls NotePlayer parameters (tilt forward = faster tempo, sideways = alters pitch). Manipulate music dynamically via tilting.
262	Device Orientation Controls Directional Light Effect	Orientation, Lamp	Orientation data simulates directional light using Lamp. Reorienting device changes apparent light direction/focus. Interactive virtual flashlight/spotlight effect.
263	Switch Toggles Servo Between Two Positions	Switch, Servos	Digital Switch controls Servo. 'On' moves servo to position A (0 deg); 'off' moves to position B (90 deg). Simple control for mechanism with two states (open/close latch).
264	Button Press Plays Next Note in Sequence	Button, NotePlayer	Pressing Button plays next note in predefined sequence/scale (NotePlayer). Single-button instrument interface for tapping tunes step-by-step.
265	Knob Controls Audio Playback Volume or Speed	Knob, SoundPlayer	Rotating digital Knob controls SoundPlayer volume or playback speed. Clockwise = increase, counter-clockwise = decrease. Intuitive analog-style adjustment of audio parameters.
266	Haptic Feedback Confirms Text Input Submission	Text, Haptic	After user submits Text input (Enter/Submit button), Haptic gives brief vibration. Tactile confirmation of successful input registration/submission.
267	GPS Triggers Spoken Street Name Announcements	GPS, TextToSpeech	GPS tracks location. System identifies current/upcoming street using map data. TextToSpeech announces street name ("Approaching Main Street"). Hands-free navigation assistance.
268	Energy Efficient Lighting Based on Presence and Light	PresenceSensor, LightSensor, Lamp	Lamp activates only if PresenceSensor detects person. LightSensor measures ambient light; Lamp brightness adjusted accordingly (brighter=dark, dimmer/off=light). Ensures light only when needed at appropriate level.
269	Monitor Activity Near Marked Objects Verbally	CameraMovement, ArUco, TextToSpeech	ArUco markers identify locations/objects. CameraMovement detects motion near markers. If motion near recognized marker, TextToSpeech announces event ("Activity detected near doorway marker"). Context-aware auditory monitoring.
270	Multimodal Control with Hand Gesture and Voice	HandSensor, VoiceRecognition, TextToSpeech	Control via combined HandSensor gestures + VoiceRecognition commands (point gesture selects object, "Activate" voice command). TextToSpeech confirms action. Complex interactions via combined inputs.
271	Biofeedback Installation Reflecting Posture and Emotion	BodySensor, FaceSensor, Lamp	Lamp color/intensity changes based on BodySensor (posture) + FaceSensor (expression). Calm/upright/smile = warm/bright; slouch/neutral = cool/dim. Visualizes psycho-physical state.
272	Smart Noise Response System with Classification	NoiseSensor, AudioClassifier, SoundPlayer	NoiseSensor detects high sound. AudioClassifier identifies type (baby crying, machinery). SoundPlayer plays appropriate response (lullaby, noise-canceling sound). Intelligent adaptive sound environment manager.
273	Simulate Textures Through Motion and Haptics	Acceleration, Inclination, Haptic	Moving/tilting device over virtual surface detected (Acceleration, Inclination). Data translated to complex Haptic patterns simulating textures (rough, smooth). Immersive tactile experiences.
274	Advanced Navigation Display with Orientation/GPS	Orientation, GPS, Text	Text displays current GPS coordinates + device compass bearing/orientation (Orientation sensor). Comprehensive navigation view (location + direction). Useful for outdoor activities, AR.
275	Multi-Control Lamp with Master Switch and Mode Button	Switch, Button, Lamp	Switch is master power. When on, Button cycles through Lamp preset modes (colors, brightness, patterns). Layered control.
276	Accessible Menu Navigation with Knob and Speech	Knob, Text, TextToSpeech	Options displayed (Text). Knob scrolls/highlights options. TextToSpeech reads highlighted option aloud. Knob press confirms selection. Accessible menu system for visually impaired.
277	Target Pointing System with Servo, Marker, Haptics	Servos, ArUco, Haptic	Detects ArUco marker. Servo rotates pointer/device to aim at marker. Once aligned, Haptic vibrates confirming target acquired/pointed at.
278	Context-Aware Alert Lamp for Presence and Noise	PresenceSensor, NoiseSensor, Lamp	Lamp responds differently: Presence + Quiet = Dim Lamp. Presence + High Noise = Max Brightness/Flashing Lamp. Nuanced alerts based on environmental context.
279	Environmentally Modulated Gesture Music Instrument	LightSensor, HandSensor, NotePlayer	HandSensor gestures trigger notes (NotePlayer). Ambient light (LightSensor) modulates musical parameter (pitch range, tempo, timbre). Music adapts organically to surrounding light.
280	Interactive Soundscape Based on Body Motion Speed	CameraMovement, BodySensor, SoundPlayer	BodySensor tracks overall movement; CameraMovement detects speed. Combined motion data influences dynamic soundscape (SoundPlayer) (faster movement = more intense sound). Responsive audio feedback for performance/workouts.
281	Expression-Aware Information Kiosk Interaction Feedback	ArUco, FaceSensor, TextToSpeech	User approaches ArUco-marked kiosk. FaceSensor monitors expression. Based on confusion/interest, TextToSpeech proactively offers help/tailored info. More responsive UX.
282	Voice-Activated Sound Analysis with Visual Feedback	VoiceRecognition, AudioClassifier, Lamp	Voice command ("Start sound analysis"). AudioClassifier listens/identifies sounds. Lamp gives visual feedback based on classification (green=speech, blue=music, red=alert). Confirms analysis mode/results visually.
283	Active Stabilization Platform using Motion Sensors	Acceleration, Orientation, Servos	Acceleration/Orientation detect unwanted movement/tilt. Control loop commands Servos to counteract disturbances in real-time, stabilizing platform. (Camera rigs, level surfaces).
284	Haptic Terrain Gradient Mapping via Inclination/GPS	Inclination, GPS, Haptic	While navigating (GPS), Inclination measures ground slope. Slope data translated to varying Haptic intensity (steeper=stronger vibration). Tactile sense of terrain gradient + location awareness.
285	Musical Instrument Interface with Sound Select Switch	Switch, Knob, NotePlayer	Switch selects instrument sound (piano, guitar) for NotePlayer. Knob controls primary parameter (pitch, volume) for selected instrument. Flexible musical expression.
286	Voice Dictation with On-Screen Verification and Input	Button, Text, VoiceRecognition	Button starts dictation. VoiceRecognition converts speech to text (displayed via Text). User verifies. Button confirms/submits. Ensures accuracy before submission.
287	Multi-Sensory Alert System for Critical Notifications	Haptic, SoundPlayer, Lamp	For critical alerts: Haptic vibrates strongly, SoundPlayer emits loud alarm, Lamp flashes brightly (red). Redundancy ensures perception in challenging conditions/by impaired users.
288	GPS-Guided Pointer System with Servo Display	GPS, Servos, Text	Calculates direction from current GPS location to target coordinates. Servo rotates physical pointer to indicate direction. Text displays supplementary info (distance, ETA). Physical navigation aid.
289	Gesture-Activated Welcome Message upon Presence	PresenceSensor, HandSensor, TextToSpeech	PresenceSensor detects person nearby. Waits for HandSensor to detect 'hello' gesture (wave). Only then TextToSpeech delivers welcome message. More interactive greeting system.
290	Combined Light and Noise Intensity Haptic Feedback	LightSensor, NoiseSensor, Haptic	Monitors light (LightSensor) and noise (NoiseSensor). Generates Haptic feedback reflecting combined input (high intensity only if both high). Nuanced tactile representation of environmental stimulation.
291	Expressive Music Generation from Motion and Emotion	CameraMovement, FaceSensor, NotePlayer	Tempo/rhythm driven by motion speed/energy (CameraMovement). Melodic content/mode influenced by facial expression (FaceSensor). Create personal/expressive music via combined physical/emotional input.
292	Marker-Based Body Tracking Servo Mimicry System	ArUco, BodySensor, Servos	ArUco marker on user limb aids BodySensor tracking. Tracked limb motion drives Servos, mimicking user's movements on robot/avatar limb in real-time.
293	Voice and Tilt Controlled Smart Lamp Features	VoiceRecognition, Inclination, Lamp	Basic Lamp functions (on/off, brightness) via VoiceRecognition. Inclination adds control layer: tilt forward/backward adjusts color temperature (warm/cool white). Intuitive multi-modal control.
294	Contextual Sound Classification with Motion Data Log	AudioClassifier, Acceleration, Text	AudioClassifier identifies sounds. Acceleration records simultaneous motion/vibration. Text displays classified sound ("Car Horn") + acceleration metrics (peak G-force). Richer context linking sounds to physical events.
295	Orientation-Dependent Sound Effects via Switch Trigger	Orientation, Switch, SoundPlayer	Orientation determines which sound effect is 'cued up' (upright=Sound A, flat=Sound B). Flipping Switch plays the currently orientation-selected sound. Position-sensitive sound trigger.
296	Precise Dual Servo Control with Knob and Button	Button, Knob, Servos	Button selects target servo (Servo 1 or 2). Knob provides fine-grained control over selected servo's angular position. Precise individual adjustment via simple interface.

297	GPS Navigation with Text Input and Spoken Directions	Text, GPS, TextToSpeech	Current location via GPS. User inputs destination (Text component). System calculates route. TextToSpeech provides audible turn-by-turn instructions.
298	Coordinated Haptic Feedback for Gesture/Posture Training	HandSensor, BodySensor, Haptic	Monitors hand gestures (HandSensor) + body posture (BodySensor). For specific combined pose, Haptic gives feedback on multiple body points corresponding to misaligned parts. Tactile guidance.
299	Adaptive Storytelling Triggered by Noise Levels	NoiseSensor, TextToSpeech, Button	TextToSpeech tells story, pauses. If NoiseSensor detects quiet, pressing Button continues story on calm path. If high noise, Button press leads to chaotic path. Narrative adapts to ambient noise.
300	Remote Object Interaction via ArUco and Servos	ArUco, Servos, Orientation, Haptic	Orient device towards distant ArUco-tagged object (Orientation aids aiming). ArUco detection confirms lock (Haptic feedback). User triggers remote Servos near object for interaction (press button, move).
301	Dynamic Light Response to Environmental Brightness	LightSensor, Lamp	LightSensor measures ambient brightness. Lamp auto-adjusts brightness/color temp to maintain consistent lighting. Adaptive environment responding to outdoor conditions (workspaces, reading nooks).
302	Presence-Triggered Welcome Message Display System	PresenceSensor, Text	PresenceSensor detects entry/approach. Triggers Text component to display welcome message/info on screen. Automated greeting system (lobbies, exhibits, retail).
303	Motion-Activated Sound Effect Generator Entertainment	CameraMovement, SoundPlayer	CameraMovement detects motion direction/speed. Triggers SoundPlayer effects (whoosh=fast swipe, chime=slow wave). Interactive art or games where motion creates soundscape.
304	ArUco Marker Object Identification Announcer	ArUco, TextToSpeech	Place ArUco-tagged object in view. ArUco identifies marker, TextToSpeech speaks object name/description. Useful for education, inventory, accessibility aid.
305	Hand Gesture Control for Music Note Playback	HandSensor, NotePlayer	HandSensor detects gestures (pointing, fist). Translates gestures into NotePlayer commands (trigger notes/melodies). Play music intuitively via hand movements. Accessible digital instrument.
306	Body Posture Feedback Via Haptic Response	BodySensor, Haptic	BodySensor tracks posture. Detects slouching/incorrect stance, triggers Haptic vibration to prompt correction. Personal wellness tool for improving ergonomic habits.
307	Facial Expression Controlled Parameter Adjustment Dial	FaceSensor, Knob	FaceSensor detects expressions (smile, frown). Expressions mapped to control digital Knob component (adjust volume/brightness). Hands-free interaction (accessibility, installations).
308	Ambient Noise Level Visualizer Using Light	NoiseSensor, Lamp	NoiseSensor measures decibels. Level controls Lamp color/brightness. Real-time visual representation of sound (green=quiet, red=loud). Useful in libraries/offices.
309	Voice Command Interface for Text Display	VoiceRecognition, Text	Voice commands/phrases captured (VoiceRecognition), converted to text, displayed (Text component). Hands-free notes, message display, interactive Q&A.
310	Sound Classification Triggered Audio Playback System	AudioClassifier, SoundPlayer	AudioClassifier identifies sounds (clapping, barking) using YAMNet. Detecting predefined sound triggers SoundPlayer to play corresponding audio file. Context-aware responses.
311	Physical Shake Intensity Measured Haptic Feedback	Acceleration, Haptic	Acceleration measures shake/movement intensity. Value controls Haptic strength/duration. Realistic feedback in games, therapy devices (encourage movement intensity).
312	Tilt-Controlled Musical Note Sequence Player	Inclination, NotePlayer	Inclination measures tilt angle. Different tilt ranges trigger NotePlayer to play specific notes/sequences. Create melodies by tilting device. Motion-based musical instrument.
313	Device Orientation Based Ambient Light Color	Orientation, Lamp	Orientation determines spatial position (upright, flat). Data changes Lamp color (upright=blue, tilted=other colors). Interactive mood light controlled by positioning.
314	Switch Activated Mechanical Servo Movement Control	Switch, Servos	Toggling digital Switch 'on' moves Servo to angle A; 'off' returns to position B. Simple control over physical mechanisms (open/close lid).
315	Button Press Activated Spoken Information Announcement	Button, TextToSpeech	Pressing digital Button triggers TextToSpeech to read predefined text (instructions, fact, status). Ideal for exhibits, kiosks, accessibility tools (audio feedback on request).
316	Location-Specific Audio Cue Player System	GPS, SoundPlayer	GPS determines location. Entering predefined zone triggers SoundPlayer to play location-relevant audio clip (history, cues). Location-aware experiences (tourism, navigation, AR games).
317	Hand Gesture Controlled Servo Arm Pointing	HandSensor, Servos	HandSensor tracks hand position/gesture. Translated into Servo commands, causing pointer/arm to mimic hand movement/pointing direction. Intuitive remote control (robotics, displays).
318	Full Body Pose Matching Light Feedback Game	BodySensor, Lamp	BodySensor tracks pose, compares to target. Successfully matching pose lights up Lamp (green) or pulses. Engaging game for fitness, dance, rehab.
319	ArUco Marker Based Information Display Screen	ArUco, Text	Camera detects ArUco marker. Corresponding info (based on ID) displayed on screen via Text component. Access contextual info interactively (museums, workshops).
320	Presence Detection Security Alert Haptic Pulse	PresenceSensor, Haptic	PresenceSensor monitors area. If presence detected when armed, triggers silent Haptic vibration alert on device/wearable. Discreet security notification.
321	Ambient Light Controlled Automatic Blind Adjustment	LightSensor, Servos	LightSensor measures sunlight intensity. Instructs Servos on blinds/louvers to adjust angle, optimizing light/reducing glare automatically. Energy efficiency, comfort.
322	Motion Intensity Tactile Feedback System Device	CameraMovement, Haptic	CameraMovement detects motion speed/magnitude. Data modulates Haptic intensity/pattern (gentle pulse=slow, strong vibration=fast). Tactile feedback for interactive displays/remote presence.
323	Facial Expression Triggered Sound Effect Player	FaceSensor, SoundPlayer	FaceSensor detects expressions (smile, surprise). Triggers SoundPlayer to play corresponding effect (chime for smile, 'boing' for surprise). Enhance storytelling, games, social robotics.
324	Noise Level Responsive Musical Note Generator	NoiseSensor, NotePlayer	NoiseSensor monitors noise level. Decibel reading mapped to control NotePlayer pitch/frequency (quiet=low notes, loud=high notes). Ambient sound installation reflecting sonic environment.
325	Voice Activated Ambient Color Light Setting	VoiceRecognition, Lamp	Voice commands ("set light blue"). VoiceRecognition processes, instructs Lamp to change color/brightness. Convenient hands-free lighting control (smart home).
326	Classified Sound Event Tactile Notification Alert	AudioClassifier, Haptic	AudioClassifier identifies sounds (doorbell, alarm) using YAMNet. Detecting critical sound triggers distinct Haptic pattern. Accessibility aid for deaf/hard of hearing.
327	Movement Acceleration Based Audio Feedback Tool	Acceleration, SoundPlayer	Acceleration detects sharp movements/impacts. Exceeding threshold plays SoundPlayer effect (crash=drop, swoosh=gesture). Auditory feedback in games, training devices, handling monitors.
328	Device Tilt Controlled Robotic Arm Position	Inclination, Servos	Inclination measures controller tilt (X/Y axes). Angles control position of two Servos (robotic arm, pan-tilt). Intuitive remote manipulation via controller tilt.
329	Orientation Based Musical Chord Progression Player	Orientation, NotePlayer	Orientation (flat, vertical, tilted) triggers NotePlayer to play specific chords/sequences. Rotate/position device to explore chord progressions interactively. Novel music composition/learning.
330	Switch Controlled Text-to-Speech Information Toggle	Switch, TextToSpeech	Digital Switch toggles audio info on/off. 'On' triggers TextToSpeech to read contextual info/status. 'Off' silences output. User control over audible feedback.
331	Button Press Cycle Through Light Colors	Button, Lamp	Each Button press cycles Lamp through predefined color sequence (red, green, blue). Simple manual selection of light color (mood, status).
332	Knob Adjustment for Audio Playback Volume	Knob, SoundPlayer	Rotating digital Knob adjusts SoundPlayer volume (clockwise=increase). Mimics physical volume dial for intuitive audio control.
333	GPS Location Triggered Informational Text Display	GPS, Text	GPS tracks location. Entering predefined zone updates Text display with location-specific info (POI details, schedules). Context-aware info delivery (mobile guides, LBS).
334	Servo Movement Confirmation via Haptic Feedback	Servos, Haptic	When Servo reaches target position, Haptic gives brief vibration pulse. Tactile confirmation of completed physical action (useful if movement not visible).
335	Hand Presence Triggered Servo Activation Mechanism	HandSensor, Servos	HandSensor detects hand presence nearby. Signals Servo to perform action (open lid, dispense). Removing hand returns servo. Touchless activation mechanism.
336	Body Movement Tempo Matching Music Generator	BodySensor, NotePlayer	BodySensor analyzes movement speed/rhythm (exercise). Tempo info controls NotePlayer playback speed/rhythm. Responsive soundtrack matching activity level (motivation for workouts).
337	Facial Expression Based Spoken Emotional Feedback	FaceSensor, TextToSpeech	FaceSensor infers emotion (happy, neutral). TextToSpeech vocalizes corresponding response ("You seem happy!"). Companion robots, learning tools, user well-being monitor.
338	Presence-Activated Ambient Soundscape Player System	PresenceSensor, SoundPlayer	PresenceSensor detects entry, triggers SoundPlayer (calming soundscape). Presence no longer detected, sound fades. Enhances atmosphere (relaxation rooms, waiting areas).
339	Light Level Change Indicated by Vibration	LightSensor, Haptic	LightSensor monitors light. Sudden change beyond threshold triggers distinct Haptic pattern. Subtle notification of light changes (photosensitive users, awareness).
340	Camera Motion Controlled Melodic Sequence Player	CameraMovement, NotePlayer	CameraMovement detects motion direction. Different directions trigger NotePlayer to play distinct melodic sequences/arpeggios. "Conduct" music by moving hands/objects. Expressive gesture-based music.
341	ArUco Marker Recognition Controls Lamp State	ArUco, Lamp	Different ArUco markers correspond to lamp states (marker 1=red). Showing marker to camera, ArUco identifies, instructs Lamp to adopt associated state. Tangible interface for lighting presets.
342	High Noise Level Spoken Warning System	NoiseSensor, TextToSpeech	NoiseSensor monitors level. If exceeds safety threshold (85dB) for duration, TextToSpeech issues spoken warning ("Warning: High noise level..."). Automated safety alert system.
343	Voice Command Operated Dual Servo System	VoiceRecognition, Servos	Voice commands ("Robot arm up"). VoiceRecognition interprets, controls up to two Servos. Hands-free operation of simple robotic mechanisms (accessibility, education).
344	Sound Type Identification Changes Light Color	AudioClassifier, Lamp	AudioClassifier identifies sound type (music, speech). Lamp changes color based on classification (blue=speech, purple=music). Visual representation of sonic environment.
345	Device Impact Detected Musical Stinger Player	Acceleration, NotePlayer	Acceleration detects sharp impacts/taps. Impact above threshold triggers NotePlayer (short percussive sound/stinger). Tap device rhythmically for simple beats. Motion-sensitive percussion.
346	Tilt Angle Correlated Haptic Intensity Feedback	Inclination, Haptic	Inclination measures tilt. Angle directly mapped to Haptic intensity (greater tilt = stronger vibration). Tactile feedback for balancing games, VR gradients, therapy tools.
347	Device Orientation Controlled Servo Positioning System	Orientation, Servos	Orientation provides rotation data (pitch, roll, yaw). Data controls Servo angular position, mirroring device orientation in real-time. Remote camera mounts, robot joints.
348	Switch Toggled Background Music Playback Control	Switch, SoundPlayer	Digital Switch controls background music. 'On' starts ambient track (SoundPlayer); 'off' pauses/stops. Simple user control for background audio.
349	Button Press Triggered Specific Musical Note	Button, NotePlayer	Each Button press triggers NotePlayer to play single specific note assigned to button. Multiple buttons form simple keyboard/soundboard. Manual melody playing (education, installations).
350	Knob Adjustment Controls Text Display Value	Knob, Text	Rotating digital Knob selects/adjusts numerical value. Current value updated/displayed via Text component. Intuitive interface for setting parameters, selecting range options.
351	Geographic Zone Entry Triggered Light Notification	GPS, Lamp	GPS tracks location. Entering predefined geofence turns Lamp on or changes color (e.g., green). Visual, ambient notification of arrival (reminders, POI alerts).
352	Hand Gesture Input for On-Screen Text	HandSensor, Text	HandSensor recognizes gestures (thumbs up, numbers). Gesture translated to character/word displayed via Text component. Basic text input/command selection via hand movements. Alternative input method.
353	Body Movement Detected Audio Story Progression	BodySensor, SoundPlayer	BodySensor detects specific movements/poses (jump, crouch). Action triggers SoundPlayer to play next segment of audio story. Immersive experience where physical actions drive narrative (games, fitness).
354	Facial Recognition Engagement Haptic Feedback Pulse	FaceSensor, Haptic	FaceSensor monitors if user is looking at screen. If user looks away for period, Haptic gives gentle pulse to regain attention. Encourage focus (e-learning) or re-engage users (kiosks).
355	Presence Detected Plays Ascending Musical Scale	PresenceSensor, NotePlayer	PresenceSensor detects entry, triggers NotePlayer (short ascending scale/chime). Pleasant, non-intrusive auditory confirmation of detection/readiness for interaction.
356	Ambient Light Level Dictates Spoken Description	LightSensor, TextToSpeech	LightSensor measures brightness (bright/dark). TextToSpeech reads different description based on level (exhibit: scientific details=day, historical=night). Adapts content delivery.
357	Camera Motion Direction Controls Servo Sweep	CameraMovement, Servos	CameraMovement detects motion direction (left/right). Info controls Servo to sweep in corresponding direction. Control physical indicator following motion or simple robotic responses.
358	ArUco Marker Identification Plays Specific Melody	ArUco, NotePlayer	Each ArUco marker corresponds to specific melody. Identifying marker triggers NotePlayer to play associated melody. Tagged objects trigger unique musical cues (games, installations).
359	Sudden Loud Noise Triggers Servo Action	NoiseSensor, Servos	NoiseSensor monitors for noise spikes. Loud noise (clap, shout) over threshold triggers Servo quick action (figure jump/wave). Sound-reactive mechanism (toys, exhibits).
360	Voice Command Confirmation via Haptic Buzz	VoiceRecognition, Haptic	VoiceRecognition recognizes command, Haptic gives short vibration buzz. Immediate tactile confirmation command was understood/executed. Improves usability (noisy environments, non-visual feedback).
361	Classified Sound Event Announced via Speech	AudioClassifier, TextToSpeech	AudioClassifier identifies sounds ("doorbell," "siren"). TextToSpeech announces identified sound category aloud ("Doorbell detected"). Audible awareness of acoustic environment (accessibility, smart home alerts).
362	Acceleration Magnitude Controls Lamp Flicker Intensity	Acceleration, Lamp	Acceleration measures vibration/movement magnitude. Intensity controls Lamp flicker rate/brightness variation (gentle shake=slow pulse, strong vibration=rapid flicker). Dynamic light effect responsive to interaction/tremors.
363	Device Tilt Angle Adjusts Audio Effect Parameter	Inclination, SoundPlayer	Inclination measures tilt angle. Angle dynamically adjusts SoundPlayer audio effect parameter (reverb depth, filter cutoff). Manipulate sound in real-time via tilt. Expressive controller.
364	Specific Device Orientation Triggers Haptic Pattern	Orientation, Haptic	Orientation detects specific orientations (face down, tilted 90 deg left). Reaching target orientation triggers unique Haptic pattern. Puzzle games, orientation confirmation feedback.
365	Switch Activation Plays Confirmation Musical Tone	Switch, NotePlayer	Toggling digital Switch triggers NotePlayer (brief distinct tone: ascending='on', descending='off'). Pleasant, non-verbal auditory feedback for UI actions.
366	Button Press Sequence Controls Servo Positions	Button, Servos	Specific sequence of Button presses determines target positions for Servos (Button 1→2 -> Servo 1=45deg, Servo 2=90deg). Complex mechanical actions via simple button combos.
367	Knob Rotation Changes Lamp Hue Smoothly	Knob, Lamp	Rotating digital Knob mapped to Lamp hue parameter. Smoothly transition color through spectrum (color wheel). Fine-grained intuitive control over light color (mood, art).
368	Location-Based Musical Note Triggering Exploration Tool	GPS, NotePlayer	GPS tracks location. Different coordinates/zones trigger NotePlayer (specific notes/tones). Walking around becomes musical discovery as movement generates melodies. Interactive soundscapes.
369	Hand Closeness Modulates Haptic Vibration Intensity	HandSensor, Haptic	HandSensor estimates hand distance. Proximity controls Haptic intensity (closer=stronger vibration). "Virtual force field" effect. Tactile feedback for proximity guidance, virtual interaction.
370	Detected Body Pose Triggers Spoken Instruction	BodySensor, TextToSpeech	BodySensor identifies pose (standing, T-pose). Holding specific pose triggers TextToSpeech (relevant info, next instruction). Hands-free progression through pose-based activities (exercise, tutorial).
371	Facial Expression Intensity Controls Note Pitch	FaceSensor, NotePlayer	FaceSensor detects expression intensity (smile). Intensity mapped to control NotePlayer continuous tone pitch (slight smile=low pitch, wide grin=high pitch). Biofeedback instrument controlled by facial muscle subtlety.
372	Presence Detection Unlocks Servo-Controlled Box	PresenceSensor, Servos	PresenceSensor detects presence for duration (authorized?). Signals Servo to unlock/open box/compartment. Basic automated access control triggered by presence.
373	Light Intensity Changes Background Sound Volume	LightSensor, SoundPlayer	LightSensor measures brightness. Value adjusts SoundPlayer background audio volume (brighter=louder or vice-versa). Subtly adapts audio environment to lighting conditions.
374	Detected Motion Speed Narrates Action Description	CameraMovement, TextToSpeech	CameraMovement estimates motion speed. TextToSpeech narrates corresponding description ("Slow movement detected," "Fast action occurring"). Auditory feedback for monitoring systems/installations.
375	ArUco Marker Proximity Tactile Feedback System	ArUco, Haptic	ArUco detects marker, estimates distance. Proximity info controls Haptic (stronger vibration closer). Helps locate/orient towards tagged objects using tactile feedback.
376	Specific Noise Type Triggers Corresponding Sound	NoiseSensor, SoundPlayer	NoiseSensor detects specific noise types (clap vs tap). Triggers SoundPlayer to play predefined sound response associated with input type. Simple sound-based trigger mechanism.
377	Voice Command Selects Musical Scale Played	VoiceRecognition, NotePlayer	User speaks scale name ("Play major scale"). VoiceRecognition identifies scale, NotePlayer plays notes in sequence. Educational tool or voice-controlled instrument.
378	Classified Audio Event Controls Servo Animation	AudioClassifier, Servos	AudioClassifier identifies events ("speech," "music"). Detection triggers Servo animation (speech=nod, music=sway). Simple robotic animations synchronized with sound type.
379	Acceleration Changes Spoken Text Playback Speed	Acceleration, TextToSpeech	Acceleration measures movement intensity. Data adjusts TextToSpeech playback speed (shaking=faster). Physical control over speech rate (accessibility, interactive reading).
380	Device Tilt Angle Progressively Brightens Lamp	Inclination, Lamp	Inclination measures upward tilt from rest. Tilting up gradually increases Lamp brightness (full at 90 deg). Intuitive physical dimming control based on angle.
381	Device Rotation Selects Ambient Sound Loop	Orientation, SoundPlayer	Orientation determines facing direction (N, E, S, W). Each direction triggers SoundPlayer to switch to different ambient sound loop (forest=N, ocean=E). Explore/select soundscapes by rotating device.
382	Switch State Change Confirmed by Haptic Pulse	Switch, Haptic	Toggling digital Switch triggers distinct brief Haptic pulse. Immediate tactile feedback confirms state change. Improves usability (visual impairment, difficult confirmation).
383	Button Press Displays Corresponding Text Snippet	Button, Text	Multiple Buttons, each associated with text snippet. Pressing button triggers Text component to display corresponding text. Simple navigation of predefined info, quiz answers, tooltips.
384	Knob Rotation Controls Servo Motor Speed	Knob, Servos	Rotating digital Knob value mapped to control continuous rotation Servo speed (clockwise=faster). Precise analog-style control over motor velocity (fan speed, wheel rotation).
385	Reaching GPS Coordinate Triggers Haptic Notification	GPS, Haptic	GPS tracks location. Arriving at predefined coordinates triggers noticeable Haptic pattern. Silent, non-visual notification of arrival (navigation, games, reminders).
386	Hand Gesture Recognition Selects Audio Track	HandSensor, SoundPlayer	HandSensor recognizes gestures ('one finger', 'fist'). Each gesture corresponds to audio track. Making gesture triggers SoundPlayer to play associated track. Select/play media via hand movements. Touchless media control.
387	Body Pose Correctness Controls Servo Indicator	BodySensor, Servos	BodySensor tracks pose, compares to target. Servo controls physical indicator (needle on dial) based on match accuracy (points to 'good'/'adjust'). Clear physical feedback.
388	Smile Detection Brightens Ambient Lighting Gently	FaceSensor, Lamp	FaceSensor detects smile, gradually increases Lamp brightness. Smile fades, light dims back. Positive feedback loop enhancing environment subtly response to positive expression.
389	Presence Detected Displays Dynamic Information Text	PresenceSensor, Text	PresenceSensor detects person nearby, activates Text display. Text dynamically updates based on time/sensor readings (weather, calendar, greetings). Relevant info automatically upon approach.
390	Light-Responsive Musical Mood Lighting System	LightSensor, NotePlayer, Lamp	LightSensor influences Lamp color (warm=dim, cool=bright) + NotePlayer output (slow/low=dark, fast/high=light). Integrated audiovisual experience adapting mood/sound/light to environment.
391	Gesture Controlled Robotic Arm with Sound Feedback	HandSensor, Servos, SoundPlayer	HandSensor tracks position/gestures, controls Servos (robotic arm/gripper). Specific gestures trigger actions. SoundPlayer gives auditory feedback confirming movements/limits. Intuitive remote manipulation + confirming sounds.
392	Pose Matching Game with Musical Light Rewards	BodySensor, NotePlayer, Lamp	BodySensor tracks matching target poses. Success triggers Lamp (celebratory colors) + NotePlayer (rewarding flourish). Visual/auditory positive reinforcement makes fitness/dance games engaging.
393	Motion-Sensing Accessibility Alert Narrator System	CameraMovement, Haptic, TextToSpeech	CameraMovement detects unexpected motion (fall?). Triggers Haptic alert (caregiver device) + TextToSpeech announcement ("Motion detected in living room"). Comprehensive remote monitoring alerts.
394	ArUco Marker Identified Object Interaction Station	ArUco, Servos, Text	Placing ArUco-tagged object triggers system. ArUco identifies, Text displays info, Servo performs related action (points, opens compartment). Interactive educational display.
395	Emotion-Responsive Tactile and Spoken Feedback Companion	FaceSensor, TextToSpeech, Haptic	FaceSensor detects expression. TextToSpeech offers contextual spoken response ("Glad you're smiling!"). Haptic gives corresponding gentle pulse/pattern. Empathetic device with multi-sensory feedback.

396	Noise Level Visual and Tactile Alert System	NoiseSensor, Lamp, Haptic	NoiseSensor monitors level. Exceeding threshold flashes Lamp (red) + Haptic gives strong vibration. Dual alert ensures notification (industrial safety, hearing accessibility).
397	Voice Controlled Robotic Assistant with Speech Output	VoiceRecognition, Servos, TextToSpeech	Voice commands ("Fetch blue block"). VoiceRecognition interprets, Servos perform action (arm/gripper), TextToSpeech gives spoken feedback ("Okay, fetching..."). Conversational robotic assistant for simple tasks.
398	Sound Classification Based Light and Audio Show	AudioClassifier, SoundPlayer, Lamp	AudioClassifier identifies sound type. Controls audiovisual show: music=rhythmic Lamp colors + SoundPlayer effects; speech=softer lighting; silence=dims lights. Environment reacts visually/sonically to sound type.
399	Movement Intensity Driven Haptic Musical Instrument	Acceleration, NotePlayer, Haptic	Acceleration measures shake/tap intensity. Controls NotePlayer volume/timbre + Haptic strength. Play rhythms by tapping/shaking, receive auditory/tactile feedback proportional to force. Multi-sensory percussion.
400	Tilt-Controlled Servo Mechanism with Light Indicator	Inclination, Servos, Lamp	Inclination measures tilt, controlling Servo position. Lamp indicates servo state/position (color/brightness). Physical control via tilt + visual feedback.
401	Presence-Activated Welcome Message and Light	PresenceSensor, TextToSpeech, Lamp	PresenceSensor detects entry, triggers TextToSpeech ("Welcome!") and activates Lamp. Automated welcoming entryway experience (visual + auditory feedback).
402	Environmental Light Level Musical Mood Generator	LightSensor, NotePlayer	LightSensor measures brightness, translating level into musical notes (NotePlayer). Brighter=higher/faster notes; dimmer=lower/slower tones. Auditory representation of environment's light.
403	Motion-Controlled Servo Pointer System	CameraMovement, Servos	CameraMovement detects motion direction/magnitude, translates to commands for two Servos (pan/tilt). Allows mounted object (pointer, camera) to follow/react to movement. Interactive displays or tracking.
404	ArUco Marker Identified Object Information Speaker	ArUco, TextToSpeech, Button	Place ArUco-tagged object in view; ArUco identifies. Pressing Button triggers TextToSpeech to read associated info aloud. Educational exhibits, museum displays, accessibility tools.
405	Hand Gesture Controlled Music Note Player	HandSensor, NotePlayer, Lamp	HandSensor detects gestures (open palm, pointing), translates to NotePlayer commands (play notes/sequences). Lamp provides visual feedback (color/intensity based on gesture/note). Intuitive non-contact musical instrument.
406	Posture Correctness Feedback System via Sound	BodySensor, SoundPlayer, Switch	BodySensor monitors posture vs. correct model. Deviations (slouching) trigger gentle alert sound (SoundPlayer). User activates/deactivates via Switch. Physical therapy, ergonomic training tool.
407	Facial Expression Triggered Haptic Feedback Device	FaceSensor, Haptic	FaceSensor detects expressions (smile, frown). Triggers unique Haptic vibration pattern per expression. Applications in emotional feedback, communication aids, immersive gaming.
408	Ambient Noise Level Visualizer Lamp	NoiseSensor, Lamp	NoiseSensor measures sound level, data controls Lamp brightness/color (quiet=soft blue, loud=bright red). Immediate visual representation of noise levels (libraries, classrooms).
409	Voice Command Operated Servo Mechanism	VoiceRecognition, Servos	Voice commands ("open," "left") processed (VoiceRecognition). Translated into specific Servo angles/movements. Hands-free control of simple mechanical actions (box, vent).
410	Sound Classification Based Ambient Lighting	AudioClassifier, Lamp	AudioClassifier identifies sound types (music, speech). Lamp changes color/behavior based on classification (calming=music, neutral=speech, flashing red=alarm). Informative ambient display reflecting sonic surroundings.
411	Device Shake Activated Sound Effects Player	Acceleration, SoundPlayer	Acceleration detects sharp movements/shaking. Exceeding threshold triggers SoundPlayer (rattle, crash, chime). Interactive toys, game controllers, audio cues via physical action.
412	Tilt-Controlled Musical Note Pitch Shifter	Inclination, NotePlayer	Inclination measures tilt angle. Mapped to NotePlayer pitch. Change tune by tilting device. Intuitive physical interface for musical expression/experimentation.
413	Orientation-Based Direction Announcer System	Orientation, TextToSpeech, GPS	Orientation determines facing direction (N, S, E, W). Combined with GPS context, TextToSpeech announces direction ("Facing North on Main St."). Navigational aid (visually impaired, hikers).
414	Motion Intensity Haptic Feedback Generator	Acceleration, Haptic	Acceleration measures movement intensity. Controls Haptic strength/frequency (gentle move=light vibration, jolt=strong feedback). Gaming controllers, simulating physical forces.
415	Device Tilt Controlled Lamp Dimmer	Inclination, Lamp	Tilting device controls Lamp brightness. Inclination angle mapped to intensity (tilt forward=brighter). Novel physical method for adjusting ambient light.
416	Orientation-Aware Servo Pointing System	Orientation, Servos	Orientation determines 3D orientation. Data directs Servos (keep platform level, point indicator to North). Stabilization or navigation displays.
417	Voice Controlled Text Display Update	VoiceRecognition, Text	Speak phrases/sentences (VoiceRecognition converts to text). Text immediately displayed (Text component). Hands-free notes, message display, visual confirmation of spoken input.
418	Location-Triggered Haptic Navigation Cue	GPS, Haptic, Button	GPS detects approach/entry to target location. Haptic gives vibration feedback. Button acknowledges cue/cycles locations. Discreet navigational assistance.
419	GPS Location-Based Information Announcer	GPS, TextToSpeech	GPS determines location. Accesses database for associated POI/info. TextToSpeech announces info aloud. Automated tour guide or location-aware info system.
420	Object Identification Triggered Servo Action	ArUco, Servos, SoundPlayer	ArUco detects specific marker ID on object. Triggers Servos (open container, move pointer). SoundPlayer emits confirmation sound. Interactive sorting or automated physical response.
421	Hand Proximity Controlled Lamp Brightness	HandSensor, Lamp, Text	HandSensor detects hand proximity. Distance controls Lamp brightness (closer=brighter). Current level/distance displayed (Text component).
422	Body Pose Activated Soundscape Generator	BodySensor, SoundPlayer, LightSensor	BodySensor identifies poses (standing, sitting). Pose triggers SoundPlayer (specific ambient soundscape: forest=standing, ocean=sitting). LightSensor subtly influences volume/mix based on ambient light.
423	Facial Expression Controlled Music Tempo	FaceSensor, NotePlayer, Knob	FaceSensor interprets emotion state (happy, neutral). State adjusts NotePlayer tempo (happy=faster). Knob allows manual base tempo fine-tuning.
424	Noise-Activated Warning Light and Vibration	NoiseSensor, Lamp, Haptic	NoiseSensor detects level over threshold. Activates Lamp (bright flash, red) + Haptic (strong vibration). Visual/tactile warnings in loud environments (safety).
425	Voice Command Confirmation via Speech Output	VoiceRecognition, TextToSpeech, Button	Voice command processed (VoiceRecognition). TextToSpeech repeats command ("Did you say 'Turn lights off'?"). User presses Button to confirm. Prevents errors in voice control.
426	Classified Sound Triggered Servo Response	AudioClassifier, Servos, Text	AudioClassifier identifies sound (doorbell, bark). Triggers Servos (nudge flag, open pet door). Text displays detected sound name.
427	Acceleration-Based Sound Pitch Modulation	Acceleration, NotePlayer	NotePlayer plays tone/melody. Acceleration measures movement speed/intensity. Data modulates NotePlayer pitch (faster move=higher pitch). Dynamic sound controlled by motion.
428	Interactive Storytelling with Inclination Choices	Inclination, TextToSpeech, Button	Story narrated (TextToSpeech). At decision points, tilt device left/right (Inclination) to choose path. Button advances narrative/repeats options. Physically interactive story.
429	Orientation-Guided Haptic Compass Feedback	Orientation, Haptic	Orientation determines direction relative to target. Haptic gives directional feedback (pulse faster when aligned, vibrate one side). Discreet non-visual guidance.
430	Light Level Triggered Haptic Alert System	LightSensor, Haptic, Switch	LightSensor monitors light. Level drops below/rises above threshold, Haptic vibrates. Switch enables/disables monitoring. Useful for photosensitive individuals or environment change indicator.
431	Presence-Detected Automatic Door Opener	PresenceSensor, Servos, SoundPlayer	PresenceSensor detects approach. Signals Servos to initiate opening action (door, barrier). SoundPlayer emits chime/notification sound. Automated entry system.
432	Marker-Based Music Playlist Selector	ArUco, SoundPlayer, Button	Different ArUco markers correspond to playlists. Place marker in view, ArUco identifies playlist. Press Button starts playback (SoundPlayer). Tangible music selection.
433	Hand Gesture Controlled Servo Positioning	HandSensor, Servos, Text	HandSensor recognizes gestures/position. Mapped to Servo commands (pointing directs servo, fist stops). Text displays servo angle/recognized gesture.
434	Full Body Movement Interactive Art Projection	BodySensor, Lamp, SoundPlayer	BodySensor tracks movement/posture. Data controls abstract visuals (Lamp: color/intensity patterns) + triggers sounds (SoundPlayer). Immersive installation where body controls light/sound.
435	Facial Expression Driven Text Feedback Display	FaceSensor, Text, NotePlayer	FaceSensor detects expression. Emotion label ("Detected: Happy") displayed (Text). NotePlayer plays short associated musical motif. Multimodal feedback on detected facial state.
436	Voice Command Volume Control for Sound Player	VoiceRecognition, SoundPlayer, Knob	Voice commands ("volume up") adjust SoundPlayer volume. Knob provides alternative manual fine-tuning. Both voice + tactile control over audio output level.
437	Sound Environment Classifier with Spoken Output	AudioClassifier, TextToSpeech	AudioClassifier identifies dominant sounds (speech, music). TextToSpeech periodically announces detected environment ("Music is playing"). Auditory awareness (accessibility, monitoring).
438	Tilt-Based Color Mixer Lamp	Inclination, Lamp	Tilting device on different axes controls mix of RGB colors (Lamp). Tilt forward=more Red, left=more Green. Intuitively mix custom light colors via physical movement.
439	GPS Proximity Alert with Sound and Light	GPS, SoundPlayer, Lamp, Text	Approaching predefined GPS POI triggers SoundPlayer alert tone, Lamp flash, Text display of location name. Multi-sensory location-based notifications.
440	Interactive ArUco Object Counting Game	ArUco, Text, Button, TextToSpeech	Text displays target number. User presents distinct ArUco markers. ArUco counts unique markers. Count matches target, TextToSpeech announces success. Button starts new round. Educational counting game.
441	Presence and Light Dependent Ambient Sound	PresenceSensor, LightSensor, SoundPlayer	SoundPlayer plays ambient soundscape. PresenceSensor fades sound in/out. LightSensor adjusts volume/character based on light (brighter sounds=day). Adaptive environmental audio.
442	Gesture and Voice Controlled Presentation Pointer	HandSensor, VoiceRecognition, Servos	Hand gestures (HandSensor) direct servo-mounted laser pointer. Voice commands (VoiceRecognition: "next slide") trigger secondary servo/signal computer. Hands-free presentation control.
443	Posture-Triggered Haptic Reminder System	BodySensor, Haptic, Switch	BodySensor monitors posture. Prolonged poor posture triggers Haptic reminder. Switch toggles system on/off. Personalized ergonomic support.
444	Emotion-Sensing Journal with Text Input	FaceSensor, Text, Button	User types journal entry (Text). FaceSensor detects expression during typing. Button saves text + detected emotion label ("Detected emotion: Neutral"). Captures emotional context with reflections.
445	Noise Level Controlled Servo Gate/Valve	NoiseSensor, Servos, Lamp	NoiseSensor monitors noise. Level exceeds threshold, triggers Servos (close gate, adjust valve). Lamp indicates noise status (green=quiet, red=loud).
446	Acceleration-Triggered Emergency Message Broadcaster	Acceleration, TextToSpeech, GPS, Button	Acceleration detects strong impact (fall). Triggers TextToSpeech broadcast (emergency message/GPS coordinates). Button allows cancellation within time window. Personal safety alert system.
447	Orientation-Specific Information Display Screen	Orientation, Text, Knob	Text displays different info based on Orientation (N=weather, E=news). Knob scrolls details within current category. Context-aware device based on direction.
448	Interactive Feedback System for Physical Therapy Exercises	BodySensor, TextToSpeech, Text, Button	BodySensor tracks exercise movements vs. target. TextToSpeech gives real-time feedback ("Raise arm higher"). Text displays reps/instructions. Button starts/pauses/moves to next exercise.
449	Marker-Based Language Learning Flashcards	ArUco, TextToSpeech, Text, Lamp	ArUco identifies marker on flashcard. Text displays word (Lang 1), TextToSpeech pronounces (Lang 2). Lamp indicates user response correctness (green=correct). Interactive language learning.
450	Dynamic Soundscape Based on Movement and Light	CameraMovement, LightSensor, SoundPlayer	SoundPlayer generates evolving soundscape. CameraMovement influences complexity/activity level. LightSensor adjusts tone/instrumentation based on brightness. Environmentally responsive audio art.
451	Gesture-Controlled Smart Home Device Simulator	HandSensor, Lamp, Text, SoundPlayer	Hand gestures (HandSensor) simulate smart home control: 'thumbs up'=Lamp on (light), 'wave'=SoundPlayer (speaker), 'pointing'=Text update (thermostat). Intuitive control demo.
452	Noise-Sensitive Automatic Volume Adjuster	NoiseSensor, SoundPlayer (or NotePlayer), Knob	SoundPlayer/NotePlayer plays audio. NoiseSensor monitors ambient noise. System auto-adjusts volume (up in noisy, down in quiet) for consistent perceived loudness. Knob for manual override/base volume.
453	Voice-Activated Information Kiosk with Display	VoiceRecognition, TextToSpeech, Text, Button	User asks questions (VoiceRecognition). System retrieves answer, displays (Text), speaks (TextToSpeech). Buttons for common questions/navigation. Interactive voice-operated info point.
454	Sound Source Localization Simulator with Servos	AudioClassifier (or multiple NoiseSensors), Servos, Lamp	System determines direction of classified sound (AudioClassifier/multi-mic). Servos rotate pointer/camera towards source direction. Lamp confirms detection/indicates directionality attempt. Simulates sound localization.
455	Physical Game Controller Using Acceleration and Haptics	Acceleration, Haptic, Button, SoundPlayer	Device as game controller. Tilting/shaking (Acceleration) controls movement. Haptic simulates impacts. Buttons trigger actions. SoundPlayer adds effects. Immersive physical controller experience.
456	Tilt-and-Speak Phrase Communication Device	Inclination, TextToSpeech, Text	Phrases associated with tilt angles (Inclination). Tilting selects phrase (displayed on Text). Pause/shake triggers TextToSpeech to speak phrase. Communication aid for non-verbal users.
457	Smart Plant Pot Monitoring System	LightSensor, Inclination, TextToSpeech, Lamp	LightSensor monitors light exposure. Inclination detects tipping. TextToSpeech gives care reminders/status ("Needs more light"). Lamp provides supplementary light if needed. Interactive plant care assistant.
458	ArUco Marker Based Access Control System	ArUco, Servos, Lamp, SoundPlayer	ArUco markers as 'keys'. Valid marker presented (ArUco) signals Servos (unlock latch), Lamp turns green, SoundPlayer plays 'granted' tone. Invalid = red light, 'denied' sound. Simple marker-based security.
459	Interactive Hand Shadow Puppet Storyteller	HandSensor, SoundPlayer, Lamp	User creates hand puppets before Lamp (light source). HandSensor recognizes shapes (bird, dog). Recognized shape triggers SoundPlayer (effects, story segments). Interactive shadow puppetry.
460	Posture-Based Music Generation Instrument	BodySensor, NotePlayer, Knob	BodySensor tracks joint positions/angles. Postural data mapped to musical parameters (pitch, duration) played by NotePlayer. Changing poses changes music dynamically. Knob adjusts scale/instrument sound. Body as real-time instrument.
461	Mood Lighting Based on Facial Expression	FaceSensor, Lamp	FaceSensor detects expression (happy, sad). Emotion controls Lamp color/intensity (happy=warm/bright, sad=cool/dim). Ambient lighting reflects/influences perceived mood.
462	Voice Command Kitchen Assistant Timer	VoiceRecognition, TextToSpeech, Text, Button	Voice command sets timer ("Set timer 5 minutes"). VoiceRecognition parses, Text displays countdown, TextToSpeech confirms. Expiration: TextToSpeech announces "Time's up!" (Lamp flash?). Button for manual actions. Hands-free kitchen helper.
463	Environmental Sound Logging with Classification	AudioClassifier, Text, GPS	AudioClassifier identifies sounds. Classified sound name ("Car Horn," "Birdsong") logged/displayed (Text), potentially with GPS location. Maps/logs sound types in locations over time.
464	Shake-to-Shuffle Music Player Interface	Acceleration, SoundPlayer, Text	Sharp shake (Acceleration) triggers 'shuffle' function (SoundPlayer plays new random track). Text displays current song title. Quick physical gesture for changing music.
465	Tilt-Controlled Labyrinth Game Interface	Inclination, Haptic, Lamp	Device controls virtual labyrinth. Tilting (Inclination) controls game board angle. Haptic simulates ball hitting walls. Lamp flashes green (level complete) / red (fall). Physical game interaction.
466	Orientation Aware Starmap Projector/Display	Orientation, Lamp (as projector), Text	Orientation determines where device points in sky. Based on direction (+GPS/time), projects simplified star map (Lamp) or displays constellation names (Text). Interactive star guide.
467	Presence-Triggered Information Display Toggle	PresenceSensor, Text, Switch	Text display shows info. PresenceSensor detects nearby user, display brightens/updates. No presence, display dims/screensaver. Switch for manual override. Power saving for displays.
468	ArUco Marker Scavenger Hunt Game	ArUco, TextToSpeech, GPS, Text	Find hidden ArUco markers. Found marker (ArUco) triggers TextToSpeech clue for next location (+GPS hints). Text displays clue/tracks found markers. Interactive location-based game.
469	Gesture-Controlled Robotic Arm Simulator	HandSensor, Servos (2 used as arm joints), Button	HandSensor tracks hand position/gestures (grab/release). Data controls two Servos (shoulder/elbow joints). Button simulates end effector. Intuitive control of simple robot mechanism via hand movements.
470	Real-time Biofeedback Relaxation Trainer	BodySensor (posture/breathing proxy), SoundPlayer, Lamp	BodySensor monitors subtle movements (posture, breathing). Calm/steady state triggers calming sounds (SoundPlayer) + warm colors (Lamp). Tense/erratic state shifts sounds/lights. Biofeedback guides relaxation.
471	Audience Reaction Visualizer using Noise Level	NoiseSensor, Lamp, Text	NoiseSensor measures audience noise (applause). Level controls Lamp intensity/color (visual feedback). Text displays numerical/graphical noise level over time. Useful for speakers/performers.
472	Voice Note Taker with Audio Playback	VoiceRecognition, SoundPlayer, Text, Button	Speak note (VoiceRecognition). Audio saved (simulated), transcribed text displayed (Text). Button cycles notes (text); another Button plays original voice audio (SoundPlayer).
473	Sound-Reactive Light Show Generator	AudioClassifier, Lamp, NotePlayer	AudioClassifier detects sound/music characteristics (beat, type). Drives dynamic Lamp changes (color, pattern). NotePlayer adds synchronized melodic elements. Audio-visual experience reacting to soundscape/music.
474	Acceleration-Based Step Counter with Spoken Updates	Acceleration, TextToSpeech, Text	Acceleration detects steps. System counts steps, displays (Text). Periodically/on demand, TextToSpeech announces count. Auditory fitness tracking feedback.
475	Interactive Map Tilter and Zoomer	Inclination, Knob, Text, GPS	Tilting device (Inclination) pans map view. Knob controls zoom level. Text displays coordinates/scale. GPS provides initial center point. Physical map navigation interface.
476	Geo-fenced Servo Activation System	GPS, Servos, TextToSpeech, Switch	Entering/exiting GPS geo-fence triggers Servos (unlock/lock). TextToSpeech announces crossing event. Switch arms/disarms trigger mechanism. Location-based automation.
477	Light Intensity Logger with Time Stamps	LightSensor, Text, Button	LightSensor measures light level. Pressing Button logs level + timestamp (simulated) to Text display/memory. Track light conditions over time (monitoring, gardening).
478	Presence-Activated Security Alert System	PresenceSensor, CameraMovement, SoundPlayer, Lamp	PresenceSensor detects presence. If CameraMovement detects significant motion while armed, triggers alarm: SoundPlayer loud alert, Lamp flashes warning colors. Multi-stage security alert.
479	ArUco Tag Inventory Management Helper	ArUco, Text, Button, TextToSpeech	Scan ArUco tag on item. ArUco displays details (Text). Buttons increment/decrement count. TextToSpeech confirms actions/reads details. Simple inventory tracking aid.
480	Hand Gesture Controlled Media Player	HandSensor, SoundPlayer, Text	Gestures control media playback (SoundPlayer): 'swipe'=skip, 'open palm'=play/pause, 'thumbs up/down'=volume (shown on Text). Touchless audio control.
481	Yoga Pose Coach with Visual Feedback	BodySensor, Lamp, TextToSpeech	BodySensor analyzes yoga pose vs reference. TextToSpeech gives corrective instructions. Lamp provides visual feedback on quality (green=good, red=deviation). Multi-modal guidance for yoga practice.
482	Facial Expression Controlled Character Avatar	FaceSensor, Servos (puppet/eyes), Lamp	FaceSensor detects expressions. Data controls Servos on physical puppet (eyes/mouth mimic expression). Lamp changes color behind puppet for 'mood'. Physically animated avatar controlled by face.
483	Voice Command Environmental Control Panel	VoiceRecognition, Lamp, Text, Knob	Voice commands control simulated environment: "Set light blue" (Lamp), "Display temp" (Text), "Adjust setting" (Knob value). Centralized voice interface for multiple parameters.
484	Intruder Alert Based on Sound Classification	AudioClassifier, Lamp, SoundPlayer, GPS	AudioClassifier listens for intrusion sounds (glass break). If detected, Lamp flashes red, SoundPlayer loud alarm, logs GPS location. Sound-based security alert.
485	Interactive Physics Demo: Acceleration Meter	Acceleration, Text, Lamp	Acceleration measures G-forces (X,Y,Z), displayed on Text. Lamp color/brightness changes based on total acceleration magnitude. Visual/numerical display for physics concepts (motion, forces).
486	Tilt-to-Scroll Text Reader Interface	Inclination, Text, Button	Tilting device (Inclination) scrolls long text (Text display) up/down. Hands-free reading. Button loads next page/adjusts speed. Ergonomic digital text reading.
487	Orientation-Based Reminder System	Orientation, TextToSpeech, Text	Reminders associated with orientations (flat, upright, facing North). Holding device in specific way triggers relevant reminder (TextToSpeech announcement / Text display). Links reminders to physical context.
488	Haptic Metronome for Music Practice	Haptic, Knob, Button, Text	Haptic provides tactile pulses at regular tempo (silent metronome). Knob adjusts tempo (BPM, displayed on Text). Button starts/stops beat. Discreet timing aid for musicians.
489	Light-Sensitive Servo Curtain Opener	LightSensor, Servos, Switch	LightSensor measures light. Daylight reaches level, Servos open curtains. Light drops, they close. Switch for manual override/disable. Automates window covering adjustments.
490	Presence and Noise Based Room Monitor	PresenceSensor, NoiseSensor, Lamp, Text	PresenceSensor detects entry. NoiseSensor monitors sound. Lamp indicates presence (soft light), changes color/flashes if noise high (baby crying). Text displays status ("Room Occupied - Quiet"). Simple room monitor.
491	Gesture and Voice Interactive Storybook	HandSensor, VoiceRecognition, TextToSpeech, SoundPlayer, Lamp	Story via TextToSpeech/SoundPlayer. User choices via Hand Gestures (point left/right) or Voice Commands ("Go through door"). Lamp provides mood lighting. Rich multi-modal interactive narrative.
492	Full Body Controlled Music Visualizer	BodySensor, Lamp, SoundPlayer (playing external music)	Music plays. BodySensor tracks movements. Movement data controls Lamp visualizations (color, pattern reacting to limbs/body). Dancing co-creates responsive light show.
493	Facial Expression Mood Diary with Audio Notes	FaceSensor, TextToSpeech, VoiceRecognition, Button	FaceSensor detects expression. User presses Button, records audio note (VoiceRecognition) about feeling. TextToSpeech confirms recording. Saves audio note tagged with detected expression. Emotional diary with voice entries.
494	Sound-Triggered Mechanical Action Chain	AudioClassifier, Servos, ArUco, Lamp	Specific sound (AudioClassifier: clap) triggers Servo 1. Servo 1 moves ArUco marker into view. ArUco detects marker, triggers Servo 2. Lamp gives feedback at each stage. Demonstrates chaining actions triggered by sound.

495	GPS-Guided Haptic Route Follower	GPS, Orientation, Haptic, TextToSpeech	User sets destination (GPS). System calculates route. Orientation checks facing direction. Haptic guides steering (vibrate left=turn left). TextToSpeech gives voice directions. Multi-sensory navigation.
496	Interactive Color Mixing Game with Knobs	Lamp, Knob (x3 or x1+selector), Text, Button	Text displays target color. User adjusts R, G, B (Knobs) to mix color (Lamp). Match target, system confirms (flash green). Hands-on game about color theory.
497	Acceleration-Based Musical Instrument Shaker	Acceleration, NotePlayer, Knob	Shaking device (Acceleration) triggers NotePlayer sounds (maracas). Shake intensity/speed influences loudness/density. Knob selects percussion sounds. Physically interactive rhythm instrument.
498	Voice Controlled Quiz Game with Light Feedback	VoiceRecognition, TextToSpeech, Lamp, Button, Text	TextToSpeech asks questions (displayed on Text). User answers (VoiceRecognition). Lamp flashes green (correct) / red (incorrect). TextToSpeech gives feedback. Button proceeds. Interactive voice quiz game.
499	Remote Object Finder Using Marker and Sound	ArUco, SoundPlayer, Servos	Servo-mounted camera scans for ArUco-tagged object. ArUco detects target marker, SoundPlayer tone gets louder/higher pitched as camera centers on marker. Pinpoint object visually/audibly.
500	Accessible Drawing Tool Using Head Movement	BodySensor (tracking head), Lamp (cursor feedback), Button	BodySensor tracks head movements (tilt, nod). Controls 'cursor' position (Lamp beam). Button (mouth/hand) acts as 'click' (start/stop drawing). Alternative drawing input.
501	Gesture-Controlled Servo Arm Interaction Game	HandSensor, Servos, ArUco	Hand gestures (HandSensor) control Servos manipulating ArUco-tagged objects. ArUco confirms interaction/placement. Engaging game for dexterity/precision (rehab, entertainment).
502	Light Level Responsive Musical Note Ambiance	LightSensor, NotePlayer, Lamp	LightSensor measures brightness, translates to notes (NotePlayer). Lamp adjusts color warmth based on light level. Visual/auditory feedback enhances atmosphere (calming spaces, art).
503	Presence-Activated Welcome Message and Light	PresenceSensor, TextToSpeech, Lamp	PresenceSensor detects entry, triggers TextToSpeech welcome + activates/changes Lamp. Simple interactive greeting system (homes, receptions, exhibits). Enhances engagement.
504	Body Posture Guided Haptic Feedback System	BodySensor, Haptic, Lamp	BodySensor monitors posture (MediaPipe). Poor posture triggers Haptic vibration reminder + Lamp color change. Multi-sensory posture correction (office workers, therapy).
505	Facial Expression Triggered Sound Effects Player	FaceSensor, SoundPlayer, Switch	FaceSensor detects expressions (smile, frown), triggers corresponding sound effects (SoundPlayer: laughter, sad trombone). Switch enables/disables mapping. Fun interactive installation or therapeutic tool.
506	Motion Detected Security Alert Light System	CameraMovement, Lamp, Button	CameraMovement detects motion, triggers flashing Lamp (visual alert). User manually deactivates alert via Button. Simple customizable security feedback (homes, restricted areas).
507	Noise Level Visualizer Using Lamp Intensity	NoiseSensor, Lamp, Knob	NoiseSensor measures sound level, mapped to Lamp intensity/color. Real-time visual noise representation. Knob adjusts sensitivity/baseline. Quiet zone monitoring (libraries, classrooms).
508	Voice Command Object Retrieval with Servos	VoiceRecognition, Servos, ArUco	Voice command ("fetch blue cube"). System identifies object (ArUco), guides Servos (gripper arm) to retrieve specified marked object. Voice-controlled robotics (accessibility, education).
509	Environmental Sound Activated Ambient Lighting	AudioClassifier, Lamp, LightSensor	AudioClassifier identifies sounds (rain, birdsong) using YAMNet. Lamp adjusts color/brightness for corresponding atmosphere (blue=rain). LightSensor moderates intensity.
510	Acceleration-Based Haptic Feedback Intensity Control	Acceleration, Haptic, Switch	Acceleration measures movement/impact intensity. Data controls Haptic strength/pattern (proportional feedback). Switch toggles response on/off. Physical therapy tools, gaming feedback enhancement.
511	Device Tilt Controlled Servo Positioning System	Inclination, Servos, Text	Inclination measures tilt angle, controls angular Servo position (platform, pointer). Current tilt/servo position displayed (Text component). User reference/calibration.
512	Orientation-Aware Information Display Application	Orientation, Text, Button	Orientation determines spatial position, displayed dynamically (Text). Pressing Button triggers additional context-specific info based on current orientation. Navigation aids, interactive museum exhibits.
513	GPS Triggered Location-Based Audio Narratives	GPS, SoundPlayer, TextToSpeech	Entering predefined GPS zones triggers SoundPlayer (audio clips) or TextToSpeech (narration) about the location. Interactive audio tours (cities, parks). Enhances exploration.
514	Interactive Storytelling with Hand Gestures and Sound	HandSensor, SoundPlayer, TextToSpeech	Hand gestures (HandSensor) trigger sound effects (SoundPlayer: swipe=whoosh) or advance story (TextToSpeech). Participants physically influence audio-based story/game.
515	Smart Dimmer Switch Using Light and Presence	LightSensor, PresenceSensor, Knob, Lamp	Lamp auto-adjusts brightness (LightSensor). PresenceSensor turns light on/off. Knob overrides/sets preferred level. Energy-efficient, user-friendly smart lighting.
516	Posture Training Game with Body Sensor Feedback	BodySensor, NotePlayer, Text	BodySensor tracks posture during exercises. Correct posture = positive notes (NotePlayer); poor posture = discordant notes. Text displays feedback/scores. Gamifies posture training (rehab, ergonomics).
517	ArUco Marker Treasure Hunt with Haptic Clues	ArUco, Haptic, GPS	Search for ArUco markers using GPS hints. Getting closer triggers stronger Haptic vibrations (proximity clue). Physical treasure hunt game or navigational aid.
518	Voice Controlled Appliance Activation via Switch	VoiceRecognition, Switch, Lamp	Voice commands ("lights on"). VoiceRecognition interprets, toggles virtual Switch, controlling physical appliance (represented by Lamp on/off). Basic voice-activated smart home control.
519	Mood Lamp Responding to Facial Expressions	FaceSensor, Lamp, Knob	FaceSensor detects expression (happy, neutral). Emotion mapped to Lamp color/brightness setting. Knob allows manual adjustment/mapping selection. Therapeutic biofeedback or personalized mood lamp.
520	Interactive Music Creation with Body Movement	BodySensor, NotePlayer, CameraMovement	BodySensor tracks limbs/posture, mapping to notes/instruments (NotePlayer). CameraMovement detects motion speed/direction, influencing tempo/volume. Dance/therapy becomes generative music performance.
521	Sound Classification Driven Alert System Display	AudioClassifier, Text, Lamp	AudioClassifier identifies critical sounds (smoke alarm, baby crying) using YAMNet. Displays alert message (Text) + flashes Lamp (visual warning). Essential alerting system for deaf/hard of hearing.
522	Tilt-Based Puzzle Game with Haptic Feedback	Inclination, Haptic, Text	Tilting device (Inclination) navigates virtual object (described via Text: maze). Haptic gives feedback (collisions, goals). Enhances physical interaction/immersion in tilt game.
523	Remote Object Orientation Monitoring System	Orientation, Text, GPS	Object transmits Orientation data (+ GPS location). Data displayed remotely (Text component). Track status of sensitive equipment, cargo stability, robotics.
524	Gesture and Voice Combined Servo Control	HandSensor, VoiceRecognition, Servos	Control Servos via combined inputs: HandSensor gestures (gripper open/close) + VoiceRecognition commands ("precision mode"). More nuanced control (robotics, accessibility).
525	Light-Sensitive Audio Frequency Generator	LightSensor, SoundPlayer, Knob	LightSensor intensity mapped to control SoundPlayer tone frequency (light theremin). Knob adjusts frequency range/sensitivity. Experimental sound creation via environmental interaction.
526	Presence-Triggered Information Kiosk with Text Display	PresenceSensor, Text, Button	PresenceSensor detects user approach, activates display (Text: intro info). User presses Buttons to navigate menus/request details (displayed). Simple reactive info kiosk.
527	Motion-Activated Servo Sweeping Mechanism	CameraMovement, Servos, Switch	CameraMovement detects motion, activates continuous rotation Servo to sweep object (flag, barrier). Switch enables/disables system. Deterrent or indicator response to motion.
528	ArUco Marker Based Music Zone Player	ArUco, SoundPlayer, Orientation	Detecting specific ArUco marker plays corresponding music track (SoundPlayer). Orientation could alter stereo balance/effects based on user facing direction towards marker. Interactive music zones.
529	Hand Stiffness Exercise with Haptic Feedback	HandSensor, Haptic, Text	HandSensor analyzes hand closure/joint angles during exercises. Haptic provides resistance simulation or success confirmation based on achieving targets. Text displays instructions/progress. Rehab tool.
530	Voice Command Driven Text-to-Speech Announcement System	VoiceRecognition, TextToSpeech, Button	Speak command/message (VoiceRecognition). Press Button confirms message, TextToSpeech announces it. Simple public address system or accessibility tool for spoken announcements.
531	Noise-Reactive Musical Notes for Biofeedback	NoiseSensor, NotePlayer, FaceSensor	NoiseSensor detects vocal humming/ambient noise, controls NotePlayer pitch/volume. FaceSensor monitors expressions (stress/relaxation), subtly alters timbre. Biofeedback tool modifying sound via breath/vocalization.
532	Environmental Soundscape Generator Based on Audio Classification	AudioClassifier, SoundPlayer, GPS	AudioClassifier identifies sounds (birds, traffic). Based on classification (+ GPS location), SoundPlayer generates complementary/contrasting ambient soundscape. Responsive audio environments.
533	Acceleration-Triggered Emergency Alert with GPS Location	Acceleration, GPS, TextToSpeech	Acceleration detects high impact (fall). Automatically gets GPS location, transmits alert (TextToSpeech announces emergency/location). Personal safety device feature.
534	Tilt-Controlled Lamp Color Mixing Interface	Inclination, Lamp, Switch	Tilt device on X/Y axes (Inclination). Each axis controls primary color intensity (X=red, Y=green). Intuitive color mixing via tilting. Switch toggles axes (add Z for blue).
535	Orientation-Based Servo Camera Mount Stabilizer	Orientation, Servos, Acceleration	Orientation detects pitch/roll. Data controls Servos to counteract movements, keeping camera level. Acceleration refines stabilization (differentiates intentional move vs shake). Basic gimbal system.
536	Interactive Exhibit Label with Presence and Button	PresenceSensor, Button, TextToSpeech	PresenceSensor detects visitor near exhibit. Visitor presses Button, triggers TextToSpeech (detailed info). Accessible on-demand audio description (museums).
537	Light Intensity Controlled Servo Blinds Adjuster	LightSensor, Servos, Knob	LightSensor measures sunlight. Controls angular Servo on blinds (optimizes light/reduces glare). Knob for manual override/preferences. Automated customizable window blind control.
538	Motion-Sensing Note Player Instrument	CameraMovement, NotePlayer, HandSensor	CameraMovement (speed/direction) influences tempo/volume. HandSensor (position/gestures) maps to specific notes (NotePlayer). Touchless instrument controlled by body/hand movements.
539	ArUco Marker Activated Information Display System	ArUco, Text, SoundPlayer	ArUco identifies marker on object. Triggers Text display (info) + SoundPlayer (sound effect/audio description). Interactive learning or inventory management.
540	Gesture Controlled Text Input System	HandSensor, Text, Button	Hand gestures (HandSensor) mapped to characters/commands (space, delete). Input text appears (Text display). Button confirms/switches character sets. Alternative text entry method.
541	Full Body Movement Controlled Soundscape	BodySensor, SoundPlayer, AudioClassifier	BodySensor translates movement (limb speed, angles) into controls for dynamic soundscape (SoundPlayer). AudioClassifier influences available sound palette based on ambient sounds. Interactive audio shaped by movement/environment.
542	Facial Expression Controlled Servo Puppet	FaceSensor, Servos, NotePlayer	FaceSensor tracks expressions. Controls Servos on puppet (mimics face). NotePlayer adds corresponding sounds (chime=smile). Engaging interactive toy/performance tool.
543	Voice Command Note Sequence Player	VoiceRecognition, NotePlayer, Switch	Dictate note sequences/commands ("play C major scale") via VoiceRecognition. System parses, NotePlayer plays specified notes. Switch toggles instrument sounds/modes. Voice-driven musical sketching/education.
544	Noise Level Regulated Text-to-Speech Volume	NoiseSensor, TextToSpeech, LightSensor	NoiseSensor monitors ambient noise. System auto-adjusts TextToSpeech volume (audible above background). LightSensor provides context (lower volume in dark). Ensures messages heard clearly.
545	Classified Sound Triggered Haptic Alert Patterns	AudioClassifier, Haptic, Button	AudioClassifier identifies sounds (doorbell, phone). Triggers distinct Haptic patterns per sound type. Identify sound source via tactile feedback (hearing loss aid). Button acknowledges alerts.
546	Acceleration Data Visualizer with Lamp Array	Acceleration, Lamp, Text (Lamp as array/multiple)	Acceleration measures X,Y,Z motion. Values mapped to brightness/color of Lamp array segments. Real-time visual representation of acceleration direction/magnitude. Text displays G-force values.
547	Tilt-to-Scroll Text Display Interface	Inclination, Text, Button	Tilt device up/down (Inclination) scrolls text (Text display). Hands-free reading. Button jumps sections/adjusts speed. Accessible text display interface.
548	Orientation-Based Compass Rose Displayed Textually	Orientation, Text, GPS	Orientation determines heading. Displayed via Text (N, S, E, W or degrees). Digital compass. GPS adds heading relative to destination context. Navigation utility.
549	Haptic Metronome Synchronized with Note Player	Haptic, NotePlayer, Knob	Generates steady beat via NotePlayer (click) + Haptic (pulse). Multi-sensory metronome. Knob adjusts tempo. Tactile tempo reference (loud environments, hearing impairment).
550	GPS-Guided Servo Pointing Mechanism	GPS, Servos, Orientation	GPS (current location + target). Orientation (device heading). System calculates direction to target, controls Servos to physically point towards it. Guides antenna, camera, or acts as physical navigation pointer.
551	Presence and Light Activated Security Light	PresenceSensor, LightSensor, Lamp, SoundPlayer	In low light (LightSensor), PresenceSensor activates. If presence detected, Lamp brightens + SoundPlayer warning tone. Energy-efficient security light (activates dark + present). Visual/audible alerts.
552	Movement Intensity Controlled Music Tempo	CameraMovement, SoundPlayer, Knob	CameraMovement analyzes motion speed/intensity. Data controls SoundPlayer music tempo (faster movement=faster music). Knob sets base tempo/sensitivity.
553	ArUco Marker Object Identification with Voice Output	ArUco, TextToSpeech, HandSensor	Object with ArUco marker presented. System identifies (ArUco), TextToSpeech announces name/description. HandSensor pointing gesture could trigger ID. Interactive tool for visually impaired.
554	Gesture Controlled Presentation Slide Navigator	HandSensor, Button, Text (simulating PC control)	Hand gestures (HandSensor: swipe left/right) interpreted as slide navigation commands (next/prev). Button activates/deactivates control. Text displays command recognized. Touchless presentation remote.
555	Full Body Exercise Repetition Counter and Guide	BodySensor, TextToSpeech, Text	BodySensor monitors exercises (squats), tracks posture/movement to count reps. TextToSpeech gives real-time audio feedback ("Good form," "Rep 5"). Text displays count/instructions. Virtual personal trainer.
556	Emotion-Adaptive Music Player via Facial Recognition	FaceSensor, SoundPlayer, Switch	FaceSensor detects expression, infers emotion (happy, sad). SoundPlayer selects/plays music from matching playlists. Switch for manual override/skip tracks. Personalized, emotion-adaptive background music.
557	Voice Activated Note Taking with Text Display	VoiceRecognition, Text, Button	Dictate notes (VoiceRecognition). Words converted to text, displayed (Text). Button saves note/clears display. Simple hands-free method for capturing thoughts/messages.
558	Ambient Noise Level Logger with Text Output	NoiseSensor, Text, GPS	NoiseSensor measures levels periodically. Data + timestamp + GPS location logged/displayed (Text) or saved. Environmental noise monitoring over time/locations.
559	Sound Classification Based Appliance Control (Simulated)	AudioClassifier, Switch, Lamp	AudioClassifier listens for command sounds (double clap, whistle). Recognized command toggles virtual Switch, controls Lamp (simulates appliance). Sound-based control demonstration.
560	Shake-to-Wake Haptic Alarm Clock System	Acceleration, Haptic, TextToSpeech	Alarm time reached, Haptic vibrates. Stops only when Acceleration detects significant shaking. TextToSpeech announces time upon waking. Alarm requiring physical interaction.
561	Tilt-Controlled Servo Maze Game Interface	Inclination, Servos, Haptic	Tilting device (Inclination) controls Servos tilting physical maze board. Guide ball through maze. Haptic feedback for ball hits wall/reaches goal. Tangible skill game.
562	Orientation-Specific Content Triggering Application	Orientation, SoundPlayer, Text	Orientation determines content: Pointing up plays cloud sounds (SoundPlayer) + weather info (Text); pointing down shows ground facts. Interactive exploration of info mapped to orientations.
563	Interactive Lamp Controlled by Knob and Presence	Knob, Lamp, PresenceSensor	User adjusts brightness/color (Knob). Lamp only on when PresenceSensor detects person, off after inactivity. Manual control preferences + energy-saving automation.
564	Text Input Driven Text-to-Speech Message Reader	Text, TextToSpeech, Button	User types message (Text input). Pressing Button triggers TextToSpeech to read entered text aloud. Communication aid for non-speakers or converting notes to audio.
565	GPS-Based Proximity Alert with Haptic Feedback	GPS, Haptic, Text	Approaching predefined GPS POI triggers Haptic alerts intensifying with proximity. Text displays distance/name of point. Navigation or location-based reminder aid.
566	Switch-Activated Servo Lock Mechanism Demo	Switch, Servos, Lamp	Toggling virtual Switch controls Servo position ('locked'/'unlocked'). Lamp provides visual feedback (red=locked, green=unlocked). Simple electronic lock interface demo.
567	Light Level Dependent Audio Guidance System	LightSensor, TextToSpeech, Button	Bright light (LightSensor) = visual instructions. Low light = audio instructions (TextToSpeech). Button repeats current instruction. Adaptive guidance system.
568	Motion Triggered Sound Effect Player for Installations	CameraMovement, SoundPlayer, ArUco	CameraMovement detects motion near specific ArUco markers. SoundPlayer plays unique sound effect associated with that marker. Interactive zones in installations/exhibits with location-specific audio feedback.
569	Gesture Controlled Music Playback Interface	HandSensor, SoundPlayer, Text	Hand gestures control media playback (SoundPlayer): 'thumbs up'=play, 'palm'=pause, 'swipe'=skip. Text displays track/status. Touchless music control.
570	Body Balance Training with Haptic Feedback	BodySensor, Haptic, Acceleration	BodySensor tracks center of gravity/stability. Acceleration detects sways. Balance falters, Haptic gives proportional feedback. Aids balance training (seniors, rehab).
571	Face Detection Activated Personalized Greeting System	FaceSensor, TextToSpeech, PresenceSensor (illustrative)	PresenceSensor detects approach. FaceSensor detects face presence (not ID). Triggers TextToSpeech generic personalized greeting ("Hello there! Welcome."). Friendly interactive system for entryways.
572	Voice Command Lamp Color and Brightness Control	VoiceRecognition, Lamp, Knob	Voice commands ("Set lamp blue," "Increase brightness") control Lamp color/intensity. Knob for manual override/fine-tuning. Flexible lighting control.
573	Ambient Noise Controlled White Noise Generator	NoiseSensor, SoundPlayer, Switch	NoiseSensor measures ambient noise. SoundPlayer generates white noise volume slightly above ambient level (masks distractions). Switch toggles generator on/off.
574	Classified Sound Event Logger with Timestamps	AudioClassifier, Text, GPS	AudioClassifier identifies sounds (speech, horn). Logs event type, timestamp, GPS location to Text display/file. Detailed record of auditory events in environment over time.
575	Impact-Sensing Haptic Feedback for Gaming	Acceleration, Haptic, SoundPlayer	Acceleration detects impacts on controller. Triggers corresponding Haptic feedback (jolt=crash) + synchronized sound effects (SoundPlayer: explosion). Enhances physical immersion/feedback in games.
576	Tilt-Based Speed Control for Note Player Sequence	Inclination, NotePlayer, Button	Tilting device (Inclination) controls playback speed of NotePlayer note sequence. Button starts/stops sequence. Physically interactive tempo manipulation.
577	Orientation-Aware Content Rotation on Display	Orientation, Text, (Implicit Display)	Orientation detects portrait/landscape hold. System auto-adjusts layout/orientation of Text content to match device orientation. Optimal readability.
578	Location-Triggered Servo Action Mechanism	GPS, Servos, TextToSpeech	Entering specific GPS zone triggers Servo action (open latch, wave flag). TextToSpeech announces action/zone entered. Automated location-based tasks or interactive landmarks.
579	Customizable Haptic Feedback Button Interface	Button, Haptic, Knob	Pressing digital Button triggers confirmation Haptic pulse. User customizes intensity/pattern via Knob. Personalization of tactile responses for UI/accessibility.
580	Text Input Controlled Servo Positioning System	Text, Servos, Button	User inputs angle value (Text component). Pressing Button sends value to control Servo position precisely. Numerical input for specific servo states (calibration, robotics).
581	Presence-Detected Automatic Door Opener Simulation	PresenceSensor, Servos, SoundPlayer	PresenceSensor detects approach. Signals Servos to simulate opening door (rotate barriers). SoundPlayer emits 'swoosh' sound effect. Functional demo of automatic door system.
582	Light-Activated Morning Alarm with Gentle Sound	LightSensor, SoundPlayer, TextToSpeech	LightSensor detects morning light, triggers SoundPlayer (gentle wake-up sounds, increasing volume). TextToSpeech announces time/"good morning". Gentle alarm clock.
583	Movement-Based Interactive Light Painting Tool	CameraMovement, Lamp, Switch	CameraMovement tracks motion path. Path controls Lamp color/intensity over time ("light painting"). Switch freezes state or changes modes/colors.
584	ArUco Marker Inventory Scanner with Audio Confirmation	ArUco, TextToSpeech, Haptic	Scan ArUco tag on item. System identifies (ArUco), looks up (simulated), TextToSpeech announces name/stock. Successful scan confirmed by Haptic pulse. Efficient inventory check tool.
585	Gesture Controlled Volume Adjustment System	HandSensor, SoundPlayer, Text (or Lamp)	Hand gestures (HandSensor: raise hand up/down) control SoundPlayer volume. Level displayed numerically (Text) or visually (Lamp brightness). Intuitive touchless volume control.
586	Yoga Pose Correction Using Body Sensor and Audio	BodySensor, TextToSpeech, NotePlayer	BodySensor analyzes pose vs ideal. TextToSpeech gives corrective instructions. Correct alignment rewarded with calming notes (NotePlayer). Real-time feedback for yoga practice.
587	Facial Expression Controlled Text Sentiment Display	FaceSensor, Text, Button	FaceSensor detects expression (happy, sad). System interprets sentiment, displays emoji/word ("Happy") via Text. Button logs detected emotion. Simple emotion tracking/biofeedback display.
588	Voice Command Activated Sound Effect Board	VoiceRecognition, SoundPlayer, Switch	Speak sound effect name ("applause"). VoiceRecognition identifies, triggers SoundPlayer (corresponding audio). Switch enables/disables listening. Voice-activated sound board.
589	Noise-Activated Quiet Zone Visual Alert	NoiseSensor, Lamp, Text	In quiet zone, NoiseSensor monitors levels. Noise exceeds threshold, Lamp changes color (red)/flashes + Text displays "Quiet Please". Immediate visual cue to reduce noise.
590	Sound Classification Triggered Haptic Morse Code	AudioClassifier, Haptic, TextToSpeech	AudioClassifier identifies sound (doorbell). Haptic outputs sound source name in Morse code vibrations. TextToSpeech initially announces sound type (learning aid). Complex tactile information display.
591	Dynamic Haptic Feedback Based on Acceleration Profile	Acceleration, Haptic, Knob	Haptic generates vibrations based on acceleration profile over time (sharp jolt vs sustained). User selects profiles/sensitivities (Knob). Nuanced tactile feedback reflecting physical event types.
592	Tilt-Controlled Musical Chord Player Interface	Inclination, NotePlayer, Text	Tilting device on different axes (Inclination) triggers NotePlayer (different chords: forward=Cmaj, left=Fmaj). Text displays current chord name. Intuitive interface for exploring harmonies.
593	Orientation-Locked Digital Display Feature	Orientation, Switch, Text (Implicit Display)	Activating Switch enables "orientation lock". Text content remains fixed (e.g., portrait) regardless of device rotation. Prevents unwanted screen rotation.

594	GPS-Based Geofencing Alert with Sound and Light	GPS, Lamp, SoundPlayer, Text	Crossing GPS geofence boundary triggers Lamp flash, SoundPlayer alert tone, Text notification ("Exiting Safe Zone"). Multi-modal alerts for location tracking applications.
595	Servo-Actuated Physical Notification System	Servos, Haptic, TextToSpeech (external trigger)	External notification trigger activates Servo (raise flag, tap surface) + Haptic vibration. TextToSpeech optionally announces type. Tangible alerts beyond screen/sound.
596	Interactive Storytelling with Physical Choices via Buttons	TextToSpeech, Button, SoundPlayer	TextToSpeech narrates story. At decision points, user presses Button to choose path. Story continues, possibly with SoundPlayer effects. Simple interactive audio adventure.
597	Hand Gesture Controlled Drone Arming Sequence (Simulation)	HandSensor, Lamp, TextToSpeech	Specific HandSensor gesture sequence required to 'arm' simulated drone. Correct gesture changes Lamp color (red->yellow->green). Success = TextToSpeech "System Armed". Demonstrates gesture security protocols.
598	Body Movement Controlled Audio Panning Effects	BodySensor, SoundPlayer, Orientation	BodySensor tracks lateral movement/lean. Data controls SoundPlayer stereo panning (sound shifts left/right). Orientation refines based on head turn. Immersive audio responding to body position.
599	Voice Command Data Entry for Text Fields	VoiceRecognition, Text, Button	Focus on Text input field. Use VoiceRecognition to dictate text. "Next field" command or Button press moves focus. Hands-free form data entry.
600	Acceleration-Based Fall Detection with GPS Text Alert	Acceleration, GPS, Text (SMS/Network Simulation)	Acceleration detects fall pattern (impact + no motion). Retrieves GPS location, sends pre-written alert message + coordinates via Text (simulates SMS/network). Automated emergency alert.
601	Presence-Activated Welcome Message and Light	PresenceSensor, TextToSpeech, Lamp	PresenceSensor detects entry, triggers TextToSpeech (custom welcome) + activates Lamp. Inviting atmosphere (visitors) or personalized smart home entryway.
602	Ambient Light Controlled Musical Note Player	LightSensor, NotePlayer	LightSensor measures brightness, translates level into musical notes (NotePlayer). Auditory representation of changing light conditions (interactive art, environmental sonification).
603	Motion-Triggered Audio Alert System Playback	CameraMovement, SoundPlayer	CameraMovement detects motion, activates SoundPlayer (pre-recorded alert/message). Basic interactive security or trigger for sound effects (escape room, installation).
604	ArUco Marker Physical Object Sorting Robot	ArUco, Servos	ArUco identifies markers on objects. Based on ID, directs Servos to sort/move objects to predefined locations. Demonstrates basic robotic sorting principles (education, automation).
605	Hand Gesture Controlled Synthesized Voice Output	HandSensor, TextToSpeech	Hand gestures (HandSensor) translated into predefined text commands vocalized by TextToSpeech. Non-verbal way to trigger spoken announcements, accessibility commands, control voice systems.
606	Full Body Pose Matching Haptic Feedback	BodySensor, Haptic	BodySensor tracks posture vs. target pose. Successful match triggers Haptic vibration feedback. Engaging system for physical therapy, dance training, fitness games.
607	Facial Expression Controlled Interactive Switch Toggle	FaceSensor, Switch	FaceSensor detects expressions (smile, raised eyebrows), uses detection to toggle virtual/physical Switch on/off. Hands-free control (accessibility) or novel interactive displays reacting to emotion.
608	Noise Level Adjusted Setting Using Knob	NoiseSensor, Knob	NoiseSensor monitors sound level, data adjusts range/sensitivity of virtual Knob interface (fine adjustments easier in quiet). Demonstrates adaptive interfaces.
609	Voice Command Activated Text Display Update	VoiceRecognition, Text	Speak commands/dictate text (VoiceRecognition). Recognized text displayed/updated (Text component). Hands-free notes, message updates, interactive kiosks via voice.
610	Sound Classification Triggered Button Interaction Feedback	AudioClassifier, Button, Haptic	AudioClassifier recognizes sound (clap, snap). Target sound simulates Button press confirmation via Haptic feedback. Unique interaction method using environmental sounds as input.
611	Acceleration-Based Location Aware Information System	Acceleration, GPS, Text	Monitors movement (Acceleration), correlates stops/patterns with GPS location. Predefined condition met (stop at POI), relevant info displayed (Text). Guided tours.
612	Object Tilt Orientation Displayed Visually	Inclination, Orientation, Lamp	Inclination/Orientation measure object tilt/position. Data translated into varying Lamp colors/brightness. Intuitive visual feedback on object alignment (leveling tools, physics demos).
613	Presence and Noise Activated Ambient Lighting	PresenceSensor, NoiseSensor, Lamp	PresenceSensor detects person + NoiseSensor low level = Lamp adjusts to calming color/brightness. Noise increases, light shifts. Gentle feedback on room soundscape.
614	Gesture Controlled Robotic Arm with Button Confirmation	HandSensor, Servos, Button	Control Servos (robotic arm) via hand gestures (HandSensor). Completing task/reaching target requires Button press confirmation. Blends gesture control + explicit input.
615	Light Level and Sound Type Adaptive Music Player	LightSensor, AudioClassifier, SoundPlayer	Adjusts SoundPlayer volume/genre based on conditions: LightSensor dims music in dark; AudioClassifier pauses/lowers if speech detected. Adaptive audio environment.
616	Location-Specific Information Displayed via ArUco Markers	ArUco, GPS, Text	GPS determines general area. ArUco markers at specific POIs trigger detailed info display (Text component) when detected. Highly localized, context-aware info delivery.
617	Posture Correcting Spoken Feedback with Light Cue	BodySensor, TextToSpeech, Lamp	BodySensor detects slouching. TextToSpeech gives reminder ("Sit straight") + Lamp subtle color/brightness change (visual cue). Posture correction tool.
618	Motion Detected Vibrating Alert with Manual Override	CameraMovement, Haptic, Switch	CameraMovement detects motion in restricted area, triggers silent Haptic vibration alert (wearable). User manually deactivates system via Switch. Discreet notification system.
619	Facial Expression Controlled Musical Note Sequencer Knob	FaceSensor, NotePlayer, Knob	Facial expressions (FaceSensor) select musical parameters (scale, instrument). Knob controls pitch/tempo of notes (NotePlayer). Expressive, unconventional music generation interface.
620	Voice Command Tilt-Based Servo Adjustment System	VoiceRecognition, Inclination, Servos	Voice command ("tilt platform"). System uses Inclination data, adjusts Servos controlling platform to reach desired angle. Hands-free adjustments (camera mounts, assistive devices).
621	Ambient Light Responsive Text Display Brightness	LightSensor, Text	LightSensor measures light level, system auto-adjusts Text component brightness on screen. Ensures readability in varying light conditions. Enhances user comfort.
622	ArUco Marker Triggered Sound Effect Player	ArUco, SoundPlayer	Detecting specific ArUco marker triggers corresponding sound effect (SoundPlayer). Enhance storytelling (books), add audio cues (board games), interactive soundscapes.
623	Hand Proximity Controlled Lamp Intensity Adjustment	HandSensor, Lamp	HandSensor detects hand proximity. Closer hand = brighter Lamp (or vice versa). Intuitive, contactless light intensity control (interactive lighting, accessibility).
624	Body Movement Direction Controlling Servo Rotation	BodySensor, Servos	BodySensor tracks body movement direction (lean left/right). Data controls rotation direction/speed of continuous rotation Servos. Intuitive body-based control (robotic platforms, displays).
625	Smile Activated Audio Affirmation Player System	FaceSensor, TextToSpeech	FaceSensor detects persisting smile. TextToSpeech plays positive affirmation/message. Promotes well-being (therapeutic settings, mood-boosting feature).
626	Noise Threshold Triggered Visual Alert Light	NoiseSensor, Lamp	NoiseSensor level exceeds threshold, Lamp illuminates/flashes (red light). Visual warning for excessive noise (libraries, hospitals, industrial settings).
627	Voice Recognition Controlled Servo Positioning System	VoiceRecognition, Servos	Voice commands ("position one ninety degrees"). VoiceRecognition interprets, controls angular position of Servos. Hands-free operation (robotic arms, accessibility devices).
628	Classified Sound Triggered Note Sequence Player	AudioClassifier, NotePlayer	AudioClassifier recognizes sounds (clapping, water). Triggers unique melody/note sequence (NotePlayer). Transforms everyday sounds into musical events (interactive art).
629	Acceleration-Based Haptic Feedback Intensity Control	Acceleration, Haptic	Haptic intensity directly controlled by motion magnitude (Acceleration). Stronger movement = stronger feedback. Intuitive physical responses (motion games, training devices).
630	Tilt-Activated Soundscape Player Using Orientation	Inclination, Orientation, SoundPlayer	Tilting device (Inclination/Orientation) changes parameters of generative soundscape (SoundPlayer: volume, panning, layers). Interactive sonic object responsive to handling.
631	Presence Detected Automatic Switch Activation Timer	PresenceSensor, Switch, Text	PresenceSensor detects person, activates Switch (light/fan) + starts timer (displayed on Text). No presence after duration, Switch deactivates. Energy-saving automation.
632	Location-Based ArUco Marker Hunt Game Audio Cues	ArUco, GPS, SoundPlayer	Outdoor hunt: GPS guides to area. Finding/scanning ArUco marker triggers SoundPlayer (clue, sound effect, confirmation tone). Blends physical exploration + digital guidance.
633	Gesture Controlled Text Input System Display	HandSensor, Text	HandSensor recognizes gesture sequence (finger spelling, swipes). Translated into characters/commands displayed (Text). Alternative input method (accessibility, unique displays).
634	Body Posture Affecting Music Tempo Played	BodySensor, NotePlayer	BodySensor analyzes posture/activity level (still vs active). Data adjusts tempo of melodies/rhythms (NotePlayer). Biofeedback music reflecting physical state (relaxation, fitness).
635	Facial Expression Triggered Servo Movement Interaction	FaceSensor, Servos	Facial expressions (FaceSensor: surprise) trigger predefined Servo movements (object jumps). Emotionally responsive characters, puppets, interactive robotics.
636	Voice Command Controlled Lamp Color Setting	VoiceRecognition, Lamp	Voice commands ("set light blue"). VoiceRecognition processes, adjusts Lamp color/brightness settings. Convenient hands-free ambient lighting control.
637	Specific Sound Recognition Toggles System Switch	AudioClassifier, Switch	AudioClassifier detects particular sound (double clap, specific word). Toggles Switch state. Sound-based activation/deactivation of functions/devices.
638	Motion Intensity Modulated Haptic Feedback Pulse	Acceleration, Haptic	Acceleration intensity modulates Haptic pulse frequency/strength. Real-time tactile feedback proportional to physical forces (impact detection, motion sensing).
639	Device Orientation Controlled Text Scrolling Display	Orientation, Text	Tilting device up/down (Orientation) scrolls Text content. Intuitive motion-based navigation of text/lists without touch.
640	GPS Boundary Alert System Using Sound Player	GPS, SoundPlayer	GPS detects crossing predefined geofence boundary. SoundPlayer emits audible alert/warning message. Asset tracking, safety zones, location-based travel reminders.
641	Presence-Based Servo Activation for Welcoming Gesture	PresenceSensor, Servos	PresenceSensor detects approach, triggers Servos (welcoming gesture: wave flag, open gate). Engaging automated interactive element for entryways/exhibits.
642	Light Level Triggered Text-to-Speech Environment Desc.	LightSensor, TextToSpeech	LightSensor measures brightness. Based on level (bright, dim), TextToSpeech vocalizes corresponding description ("It's very bright"). Auditory environmental context (visually impaired).
643	Movement Direction Controlled Lamp Color Spectrum Shift	CameraMovement, Lamp	CameraMovement detects motion direction. Direction dynamically shifts Lamp color through predefined spectrum. Visually responsive art installations/lighting reacting to activity.
644	ArUco Marker Identified Object Information Display	ArUco, Text	ArUco detects marker on object. System retrieves associated info (name, description), displays via Text component. Interactive product ID, museum labels, educational tools.
645	Hand Gesture Sequence Input Confirmed by Haptic Pulse	HandSensor, Haptic	HandSensor recognizes sequence of predefined gestures. Successful recognition triggers Haptic confirmation vibration. Secure tactile method for command input/unlocking.
646	Body Pose Controlled Knob Value Adjustment	BodySensor, Knob	Aspect of user pose (arm height, torso twist) translated into value controlling virtual Knob interface setting. Unconventional body-based parameter control (games, simulations).
647	Voice Command Volume Control for Note Player	VoiceRecognition, NotePlayer, Knob	Voice commands ("louder," "softer") control NotePlayer volume. Knob visually represents/adjusts level. Combined voice control + visual feedback for audio settings.
648	Sound Classification Triggered Text Instructions Display	AudioClassifier, Text	AudioClassifier identifies task-relevant sounds (tool operating). Triggers Text component to display corresponding instructions/status updates. Interactive tutorials, monitoring via audio cues.
649	Acceleration-Triggered Sound Effect Player System	Acceleration, SoundPlayer	Acceleration detects jolt/impact/shake pattern. Triggers SoundPlayer (related sound effect: crash, swoosh). Auditory feedback for physical interactions (games, simulations).
650	Inclination Controlled Servo Motor Speed Adjustment	Inclination, Servos	Tilt degree (Inclination) controls continuous rotation Servo speed (more tilt = faster rotation). Intuitive analog control for mechanisms (fans, wheels) based on orientation.
651	GPS Location Change Triggered Text-to-Speech Update	GPS, TextToSpeech	As location changes (GPS), TextToSpeech announces new area/street/POI based on map data. Automated audio tour guide or navigation assistant.
652	Presence Detection Logs Entry/Exit Times Textually	PresenceSensor, Text	PresenceSensor detects entry/exit. System logs events with timestamps, displays log via Text component. Simple occupancy monitoring, space usage tracking.
653	Ambient Light Controlled Servo Shutter Mechanism	LightSensor, Servos	LightSensor measures light. If exceeds threshold, Servo closes shutter/blind; opens when dims. Automated light control for installations, prototypes, energy efficiency.
654	Movement Intensity Controlled Haptic Feedback Frequency	CameraMovement, Haptic	CameraMovement quantifies motion speed/amount. Intensity level controls Haptic vibration frequency. Tactile feedback proportional to activity level (sensory substitution, interactive art).
655	ArUco Marker Triggered Specific Note Sequence Playback	ArUco, NotePlayer	Detecting different ArUco markers triggers NotePlayer (unique pre-programmed musical phrases/sequences per marker). Interactive music creation, educational toys (notation), game audio cues.
656	Hand Gesture Controlled Lamp On/Off Toggle Switch	HandSensor, Lamp, Switch	HandSensor recognizes gesture (open palm vs fist). Gesture toggles virtual Switch, controlling Lamp (on/off). Touchless basic lighting control via intuitive hand movements.
657	Body Posture Mismatch Triggering Haptic Warning Signal	BodySensor, Haptic, Text	BodySensor compares pose to reference. Deviation triggers Haptic warning vibration + Text message suggesting correction. Aids posture training or workplace safety monitoring.
658	Facial Expression Modulated Text-to-Speech Emotional Tone	FaceSensor, TextToSpeech	FaceSensor detects expression (happy, neutral). Emotion influences TextToSpeech voice tone/style when reading text. More expressive/engaging voice output (interactive characters).
659	Noise Level Controlling Text Display Size Adjustment	NoiseSensor, Text	NoiseSensor measures noise level. As environment gets louder, system increases Text component font size. Enhances readability amidst distractions (public info systems).
660	Voice Command Confirmation via Haptic Feedback Pulse	VoiceRecognition, Haptic	VoiceRecognition processes command successfully, Haptic provides brief vibration confirmation. Ensures command received/understood (useful in noisy environments, non-visual confirmation).
661	Sound Classification Triggered Servo Action Response	AudioClassifier, Servos	AudioClassifier identifies sounds (bark, doorbell). Triggers Servos pre-programmed action (close pet door, display sign). Simple automated responses to audio cues (home automation).
662	Acceleration Magnitude Controlled Note Pitch Variation	Acceleration, NotePlayer	Acceleration magnitude (how hard device shaken) controls NotePlayer pitch (stronger move = higher/lower pitch). Simple motion-based musical instrument/sound toy.
663	Inclination Data Used to Adjust Lamp Color Mix	Inclination, Lamp	Tilt angle on X/Y axes (Inclination) controls mix of two primary colors (Lamp: X=Red, Y=Blue). Blend colors interactively by tilting device. Intuitive ambient lighting controller.
664	Orientation Sensor Guiding Servo-Controlled Pointer Display	Orientation, Servos, Text	Orientation determines pointing direction. Data controls Servos attached to pointer, aligning it. Text displays info about pointed-at item (based on spatial data).
665	GPS Location Triggered Haptic Navigation Pulse Cue	GPS, Haptic	Approaching GPS waypoint/turn triggers distinct Haptic patterns (pulse left/right). Directional cues without visual/audio feedback (navigation aid).
666	Presence Activated Knob for Timed Access Control	PresenceSensor, Knob, Switch	PresenceSensor detects user, enables Knob. User turns Knob to specific position within time limit to activate Switch (unlock). Timed interaction layer for presence activation.
667	Light Sensitive Button Activation Threshold Adjustment	LightSensor, Button, Text	LightSensor measures light. System adjusts virtual Button activation sensitivity threshold (firmer press in bright light). Current threshold displayed (Text). Adaptive button response.
668	Movement Direction Controlled Sound Panning Effect Player	CameraMovement, SoundPlayer	CameraMovement detects motion direction (left/right). Data controls SoundPlayer stereo panning. Sound appears to move in response to visual motion (immersive installations).
669	ArUco Marker Sequence Unlocks Text Message Display	ArUco, Text, SoundPlayer	Present specific ArUco marker sequence. Correct sequence recognition (ArUco) displays hidden message (Text) + success chime (SoundPlayer). Simple puzzle/escape room element.
670	Hand Gesture Controlled Note Player Pitch Bend	HandSensor, NotePlayer	While note plays (NotePlayer), hand gestures (HandSensor: move hand up/down) control real-time pitch bend. Expressive musical control similar to pitch wheel via gestures.
671	Body Pose Controls Servo-Actuated Marionette Puppet	BodySensor, Servos	BodySensor tracks user joint positions (elbows, knees). Data mapped to control Servos on marionette puppet limbs. Puppet mimics user movements in real-time (entertainment, storytelling).
672	Facial Expression Changes Lamp Color Mood Lighting	FaceSensor, Lamp	FaceSensor detects dominant expression (happy, sad). System changes Lamp color to reflect detected mood (yellow=happy, blue=sad). Interactive mood lighting responding to emotion.
673	Noise Level Displayed as Text Warning Message	NoiseSensor, Text, Lamp	NoiseSensor monitors levels. Exceeding threshold displays warning message (Text: "Noise level high!") + Lamp flash (yellow/red). Visual alert for workplace safety/classroom management.
674	Voice Recognition Command Selects SoundPlayer Playlist	VoiceRecognition, SoundPlayer, Text	Voice commands ("Play relaxing music"). VoiceRecognition selects/plays corresponding tracks (SoundPlayer). Text displays current track name. Voice-controlled music experience.
675	Audio Event Classification Triggers Haptic Confirmation Feedback	AudioClassifier, Haptic	AudioClassifier detects specific brief sounds (clap, snap). Triggers immediate Haptic vibration feedback confirming sound registration. Precise sound-triggered interactions/accessibility feedback.
676	Acceleration Data Controls Text Font Size Dynamically	Acceleration, Text	Acceleration magnitude dynamically adjusts Text component font size (more vigorous move = larger size temporarily). Playful text effects or emphasizing info during motion.
677	Device Inclination Controls Virtual Knob Rotation Display	Inclination, Knob, Text	Tilting device (Inclination) controls rotation of virtual Knob graphic. Current knob value shown via Text component. Motion-based input method for adjusting settings visually.
678	Orientation Sensor Data Logs Device Position History	Orientation, Text, GPS	Periodically logs device Orientation (pitch, yaw, roll) + GPS coordinates. History displayed/stored via Text component. Track equipment movement/alignment or analyze motion patterns.
679	GPS Proximity Alert Triggers Text-to-Speech Reminder Message	GPS, TextToSpeech	GPS detects user near specific location (grocery store). TextToSpeech plays relevant reminder ("Don't forget milk"). Location-aware automated reminders.
680	Presence Sensor Enables Servo-Controlled Lid Opening Mechanism	PresenceSensor, Servos, Button	PresenceSensor detects approach. User presses Button to activate Servos opening container lid. Semi-automated interactive opening mechanism requiring confirmation.
681	Light Intensity Controlled Haptic Feedback Pattern Variation	LightSensor, Haptic	LightSensor measures light intensity. Determines Haptic vibration pattern/rhythm. Translates visual brightness into tactile sensation (light awareness for visually impaired).
682	Camera Movement Speed Adjusts Note Player Tempo	CameraMovement, NotePlayer	CameraMovement estimates average motion speed. Speed value adjusts NotePlayer music/note tempo (faster speed=faster tempo). Soundscape adapting to activity level.
683	ArUco Marker Position Controls Servo Arm Angle	ArUco, Servos, Text	ArUco detects marker position (X-coordinate). Position controls angular Servo angle. Adjust robot arm/pointer by physically moving marker. Current angle displayed (Text).
684	Hand Gesture Sequence Controls Text-to-Speech Phrase Selection	HandSensor, TextToSpeech, Text	HandSensor recognizes gesture sequence. Valid sequence triggers TextToSpeech (corresponding predefined phrase). Recognized sequence displayed (Text). Complex communication via gestures.
685	Body Balance Measured by Sensor Controls Haptic Feedback	BodySensor, Haptic, Orientation	BodySensor (+ Orientation) assesses balance/stability. Deviations trigger proportional Haptic feedback. Real-time tactile cues to maintain balance (therapy, fitness, VR).
686	Facial Expression Selects Note Player Instrument Sound	FaceSensor, NotePlayer, Button	Facial expressions (FaceSensor: smile=piano) select NotePlayer instrument sound. User presses Button to play note with selected instrument. Emotionally expressive sound choice interface.
687	Loud Noise Event Triggers Servo Protective Action	NoiseSensor, Servos, SoundPlayer	NoiseSensor detects sudden loud noise over high threshold. Triggers Servos (protective action: close cover) + SoundPlayer warning sound. Automated safety response system.
688	Voice Command Controlled Haptic Pattern Playback Selection	VoiceRecognition, Haptic, Text	Voice commands ("Pulse alert") select/play corresponding Haptic pattern. Pattern name displayed (Text). Voice control over tactile feedback modes.
689	Sound Classification Selects Lamp Color Scheme Preset	AudioClassifier, Lamp	AudioClassifier identifies sound type (music, speech). Lamp switches to predefined color scheme associated with type (dynamic=music, calm white=silence). Adaptive ambient lighting.
690	Acceleration Spikes Trigger Note Player Sound Bursts	Acceleration, NotePlayer, Haptic	Sharp acceleration spikes trigger NotePlayer (short sound bursts/percussive hits) + corresponding Haptic pulses. Physical impacts generate synchronized audiovisual/tactile responses.
691	Inclination Controls SoundPlayer Playback Speed Adjustment	Inclination, SoundPlayer	Tilting device forward/backward (Inclination) controls SoundPlayer playback speed (forward=faster, backward=slower). Intuitive motion-based audio scrubbing/rate adjustment.
692	Orientation Data Determines Text-to-Speech Directional Cues Output	Orientation, TextToSpeech, GPS	Using GPS + Orientation (heading), TextToSpeech provides relative navigational cues ("Turn slightly right ahead"). More intuitive guidance than cardinal directions.

693	GPS Zone Entry/Exit Triggers Servo Action Event	GPS, Servos, Text	Entering/exiting GPS geofence triggers Servos specific action (raise flag, dispense item). Zone status displayed (Text). Location-based automated physical actions.
694	Presence Detected Light Activation with Knob Dimmer	PresenceSensor, Lamp, Knob	PresenceSensor activates Lamp on entry. User uses Knob to manually adjust brightness level. Combines automated on/off + manual intensity tuning.
695	Light Level Affects ArUco Marker Detection Sensitivity	LightSensor, ArUco, Text	LightSensor measures light. System adjusts ArUco detection parameters for optimal performance. Status info ("Low light compensation active") displayed (Text). Awareness during scanning.
696	Motion Detected Servo Sweep with Sound Cue	CameraMovement, Servos, SoundPlayer	CameraMovement detects motion, triggers Servo sweep (scanning motion). Accompanied by subtle sweeping sound (SoundPlayer). Interactive element signaling noticed movement.
697	Hand Proximity Controls Note Player Volume Intensity	HandSensor, NotePlayer, Lamp	Hand distance (HandSensor) controls NotePlayer volume (closer=louder). Lamp brightens proportionally. Theremin-like interface controlling sound intensity + visual brightness.
698	Body Movement Speed Controls Lamp Flicker Rate	BodySensor, Lamp, Acceleration	BodySensor + Acceleration estimate activity level/speed. Value controls Lamp flicker rate (faster pulsing with vigorous movement). Dynamic visual feedback reflecting exertion/energy.
699	Facial Expression Triggered Text Sentiment Display Update	FaceSensor, Text, SoundPlayer	FaceSensor analyzes expression for sentiment (positive, negative). Sentiment displayed (Text: "Mood: Positive") + brief corresponding sound cue (SoundPlayer: chime). Emotional feedback.
700	Voice Command Sets Timer Displayed with Text Component	VoiceRecognition, Text, Haptic	Voice command ("Set timer 5 minutes"). System displays countdown (Text). Haptic pulse when timer expires. Hands-free timer with visual/tactile alerts.
701	Hand Gesture Controlled Light Color Change	HandSensor, Lamp	HandSensor interprets gesture/position. Lamp changes color/brightness in response. Touchless, intuitive interface for adjusting light (art, calming spaces, accessibility).
702	Movement-Triggered Alarm with Button Reset Feature	CameraMovement, Lamp, SoundPlayer, Button	CameraMovement detects motion, triggers flashing red Lamp + alert SoundPlayer. Button stops alert/resets system. Simple interactive security demo (visual, audio, manual response).
703	Voice Activated Storyteller with Ambient Light Sync	VoiceRecognition, TextToSpeech, LightSensor, Lamp	Voice command ("Tell story") triggers VoiceRecognition. TextToSpeech narrates. LightSensor monitors brightness, adjusts Lamp color/intensity for atmosphere (dim=night stories). Dynamically enhances immersive storytelling.
704	Interactive ArUco Marker Pet Feeder Actuator	ArUco, Servos, Button	ArUco detects marker on specific pet bowl. User presses Button, activates Servo to dispense food. Automates customized feeding for multiple pets.
705	Posture Correcting Haptic Feedback Chair Monitor	BodySensor, Haptic, Switch	BodySensor monitors sitting posture. Detects slouching, triggers Haptic vibration reminder. User toggles feature on/off via Switch. Personalized ergonomic feature.
706	Environmental Noise Level Reactive Kinetic Art	NoiseSensor, Lamp, Servos	NoiseSensor measures sound level. Lamp dynamically changes color spectrum (blue=quiet, red=loud). Servos subtly move installation elements. Living visual representation of environment's soundscape.
707	Facial Expression Driven Musical Note Generator Toy	FaceSensor, NotePlayer	FaceSensor detects expressions (smile, frown). Recognized expression mapped to specific musical note/melody played by NotePlayer. Generate tunes/effects interactively via expression changes.
708	Presence-Activated Welcome Message and Illumination System	PresenceSensor, TextToSpeech, Lamp	PresenceSensor detects entry, triggers TextToSpeech welcome + Lamp illuminates/changes color. Automated, responsive, inviting entryway experience (homes, offices).
709	Tilt-Controlled Digital Knob Value Adjustment Interface	Inclination, Knob, Text	Inclination measures tilt angle. Tilt directly controls virtual Knob position/value. Current setting displayed (Text component). Intuitively adjust parameters by tilting device.
710	Location-Based Audio Guide with Sound Classification Muting	GPS, AudioClassifier, SoundPlayer	GPS tracks location. Entering predefined zones plays relevant audio clips (SoundPlayer). AudioClassifier monitors ambient sounds, can mute guide if loud external noises interfere. Ensures clarity.
711	Acceleration-Based Haptic Feedback Gaming Immersion Device	Acceleration, Haptic	Acceleration detects sharp movements/impacts (shakes, taps). Triggers corresponding synchronized Haptic vibrations. Enhances player immersion by translating virtual events into tangible sensations.
712	Interactive Sound Classification Learning Game Station	AudioClassifier, Text, Button, SoundPlayer	AudioClassifier identifies sounds (dog bark, typing) using YAMNet. Classification label displayed (Text). Button triggers SoundPlayer (mimic sound / provide info). Engaging educational tool.
713	Orientation-Sensing Interactive 3D Model Turntable Viewer	Orientation, Servos	Orientation tracks device rotation/position. Data controls pan/tilt Servos connected to platform holding object. Rotating controller rotates object correspondingly. Intuitive physical examination from various angles.
714	Voice Command Servo-Operated Smart Window Blinds	VoiceRecognition, Servos, LightSensor	Voice commands ("open blinds halfway") interpreted (VoiceRecognition). Instructs positional Servos on blinds. LightSensor provides feedback (enabling "adjust for less glare" command). Responsive home automation.
715	Hand Gesture Controlled Virtual Musical Instrument Player	HandSensor, NotePlayer	HandSensor tracks gestures (pointing, fist, swipe). Mapped to distinct musical notes/chords/parameters played by NotePlayer. "Conduct" music or control sounds via intuitive hand movements.
716	Smart Ambient Lighting System with Manual Override	LightSensor, Lamp, Switch	LightSensor measures light, communicates with Lamp to auto-adjust brightness (maintains consistent level). Switch allows manual override or system off.
717	Interactive Fitness Trainer with Body Tracking Feedback	BodySensor, TextToSpeech, SoundPlayer	BodySensor tracks movements/posture during exercises. TextToSpeech provides real-time corrective feedback ("Lower hips"). SoundPlayer plays music/motivational cues. Guided workout experience.
718	ArUco Marker Based Object Identification Learning Game	ArUco, Text, TextToSpeech, Button	Objects tagged with ArUco markers. Camera detects marker, identifies object, displays name (Text). Button triggers TextToSpeech (pronounce name / fun fact). Interactive educational game.
719	Noise-Activated Calming Soundscape Generator Device	NoiseSensor, SoundPlayer, Knob	NoiseSensor detects loud noises over threshold (adjustable via Knob). Triggers SoundPlayer (calming sounds: nature, music) for short duration. Mitigates startling effect (noise-sensitive environments).
720	Facial Expression Controlled Dynamic Ambient Mood Lamp	FaceSensor, Lamp	FaceSensor analyzes expression (happy, sad) using MediaPipe. Detected expression mapped to specific Lamp color palettes/brightness/patterns. Ambient lighting visually reflects perceived mood interactively.
721	Presence-Detection Security Alert with Discreet Notification	PresenceSensor, Haptic, Text	PresenceSensor detects unexpected presence. Triggers silent Haptic vibration alert (paired device). Discreet message displayed (Text: "Presence Detected - Zone 3").
722	Movement Direction Controlled Stereo Sound Panning Effect	CameraMovement, SoundPlayer	CameraMovement detects motion direction (left/right). Data dynamically controls SoundPlayer audio panning (left/right balance). Sound appears to move in sync with visual motion.
723	Inclination-Based Musical Note Pitch Bending Controller	Inclination, NotePlayer	While note sustained (NotePlayer), Inclination measures tilt angle. Real-time tilt data smoothly bends sustained note pitch up/down (like whammy bar).
724	GPS Zone-Triggered Haptic Landmark Awareness Navigator	GPS, Haptic	GPS tracks location. Entering predefined geofenced zones (POIs, landmarks) triggers distinct Haptic vibration patterns. Non-visual tactile alert to nearby significant locations during navigation.
725	Acceleration-Triggered Dynamic Sound Effects Toy Box	Acceleration, SoundPlayer	Acceleration detects motion changes (shake, tap, throw). Each distinct profile triggers corresponding fun sound effect (SoundPlayer: rattle, boing, swoosh). Simple responsive toy reacting to handling.
726	Orientation Controlled Panoramic Viewer with Servo Panning	Orientation, Servos, ArUco	ArUco marker indicates panorama reference. Orientation detects controller rotation. Rotation data controls pan/tilt Servos (move camera / adjust virtual viewpoint). Intuitive exploration.
727	Gesture and Voice Combination Biometric Lock System	HandSensor, VoiceRecognition, Servos, TextToSpeech	Requires HandSensor gesture sequence + VoiceRecognition passphrase verification. Both validated = TextToSpeech confirms access + Servos operate lock. Two-factor authentication.
728	Interactive Exergame with Body Tracking and Audiovisuals	BodySensor, SoundPlayer, Lamp, Button	BodySensor tracks movements for game actions (dodge, jump). SoundPlayer provides audio cues/music/feedback. Lamp flashes signal game events (points, warnings). Button starts levels/confirms actions.
729	Smart Room Environment Optimization Based on Occupancy	PresenceSensor, LightSensor, NoiseSensor, Lamp, TextToSpeech	Detects presence (PresenceSensor), checks conditions (LightSensor, NoiseSensor). Auto-adjusts Lamp brightness. TextToSpeech suggests actions ("Environment noisy...") if disruptive. Personalized comfortable environment.
730	Facial Expression Passive Mood Logging Application Diary	FaceSensor, Text, Button	FaceSensor passively monitors/detects dominant expression. Pressing Button logs detected mood category ("Happy," "Neutral") + timestamp to file/display (Text). Simple mood tracking diary.
731	Movement-Based Generative Musical Instrument Performance Tool	CameraMovement, NotePlayer, Lamp	CameraMovement (speed, magnitude, direction) triggers notes/chords (NotePlayer: faster=higher/louder). Direction influences note selection/scale. Lamp provides synchronized visual feedback.
732	Sound Classification Triggered Contextual Information Display	AudioClassifier, Text, TextToSpeech	AudioClassifier identifies predefined sounds (doorbell, smoke alarm). Displays relevant info/alert (Text: "Doorbell detected") + optionally TextToSpeech announcement.
733	Tilt-Sensitive Haptic Feedback Puzzle Box Mechanism	Inclination, Haptic, Servos	Inclination detects box orientation. Tilting in specific sequences required. Haptic gives clues/confirmations for correct moves. Servos unlock internal mechanisms upon completion.
734	Location-Aware Voice Reminder Playback System Assistant	GPS, VoiceRecognition, TextToSpeech, Button	Record voice reminder (VoiceRecognition) + tag location (Button press at spot). GPS detects user entering tagged zone later, TextToSpeech plays reminder. Context-aware assistance.
735	Acceleration-Controlled Simple Servo Robot Arm Mimicry	Acceleration, Servos	Acceleration sensors on user arm detect movement dynamics. Data translated into commands for Servos controlling simple robot arm, attempting to mimic user movements. Basic teleoperation demo.
736	Interactive ArUco Marker Story Blocks Construction Set	ArUco, SoundPlayer, Text	Children place ArUco-marked blocks (story elements: character, setting). ArUco identifies block, plays corresponding sounds (SoundPlayer), displays related text (Text). Tangible story construction.
737	Hand Gesture Controlled Virtual Volume Knob Adjustment	HandSensor, Knob, Text	Hand gestures (rotate imaginary dial, pinch) mapped to control virtual Knob value. Current setting displayed (Text). Visual feedback for gesture-based parameter adjustment.
738	Body Posture Driven Adaptive Ambient Soundscape System	BodySensor, SoundPlayer, LightSensor	BodySensor monitors posture (attentive vs relaxed). Data adjusts SoundPlayer ambient soundscape characteristics (complex/stimulating vs simple/calming). LightSensor influences volume/mix.
739	Voice Command Smart Light Switch with Color Control	VoiceRecognition, Lamp, Switch	Voice commands ("Turn light on," "Set blue") control Lamp state/color/brightness via VoiceRecognition. Physical Switch provides manual override.
740	Presence-Detected Automatic Door Opening Simulation Model	PresenceSensor, Servos, SoundPlayer	PresenceSensor detects approach, signals Servos to simulate door opening (rotate barrier). SoundPlayer plays corresponding effect ('swoosh', chime).
741	Facial Expression Triggered Automated Photo Booth Capture	FaceSensor, Button, SoundPlayer, Lamp	FaceSensor detects target expression (smile, wink). Triggers countdown sound (SoundPlayer), flash (Lamp), initiates capture (implied). Button for manual captures.
742	Environmental Sound Event Logging with GPS Timestamps	AudioClassifier, GPS, Text	AudioClassifier identifies sounds (sirens, construction). Logs event type, timestamp, GPS location. Log reviewable/displayed (Text).
743	Orientation-Based Tilt Maze Game with Haptic Walls	Orientation, Haptic, Text	Tilt device (Orientation) controls virtual marble in maze (displayed via Text). Marble hits wall, Haptic vibrates. Enhances interaction/immersion.
744	Movement-Activated Information Kiosk Screen Wake-Up Feature	CameraMovement, Text, Button	Kiosk screen dim/off. CameraMovement detects approach, activates main display (Text shows content) + highlights 'Start' Button. Energy saving + readiness.
745	Ambient Noise Level Controlled Servo Fan Speed Simulation	NoiseSensor, Servos, Knob	NoiseSensor measures noise level. Level proportionally controls continuous rotation Servo speed (simulates fan: louder=faster). Knob sets base speed/sensitivity.
746	Tilt-to-Scroll Hands-Free Text Document Reader Aid	Inclination, Text, Switch	Tilting device (Inclination) scrolls text up/down (Text display). Switch toggles feature/adjusts speed. Hands-free, ergonomic reading aid.
747	Acceleration-Based Motion Gesture Command Recognition System	Acceleration, TextToSpeech, Haptic	Acceleration sensor trained for specific motion patterns (flick, circle). Recognized patterns interpreted as commands (next track), confirmed by TextToSpeech + Haptic pulse.
748	Interactive ArUco Marker Cube Face Orientation Puzzle	ArUco, Orientation, NotePlayer, Lamp	ArUco identifies face towards camera; Orientation determines cube rotation. Combined data used in puzzle requiring specific faces/orientations. NotePlayer/Lamp provide feedback.
749	Hand Gesture Controlled Remote Servo Pointing Device	HandSensor, Servos	HandSensor tracks 3D hand/finger position/orientation. Data controls pan/tilt Servos attached to laser/camera. Intuitive remote aiming via natural hand movements.
750	Smart Exercise Mat with Real-Time Posture Feedback	BodySensor, Haptic, Text	BodySensor in mat tracks pose/weight distribution. Incorrect posture/imbalance triggers targeted Haptic vibration in specific zones. Text displays corrective tips.
751	Multimodal Voice Assistant with Screen Display Output	VoiceRecognition, TextToSpeech, Text, Button	Interact via voice (VoiceRecognition). Assistant responds (TextToSpeech) + displays visual info (weather, lists) on screen (Text). Button initiates listening/confirms actions.
752	Ambient Light Level Triggered Automatic Blind Adjuster	LightSensor, Servos, Switch	LightSensor measures light. If exceeds upper/drops below lower threshold, signals Servos to adjust blinds/curtains. Switch disables automatic function for manual control.
753	Presence-Based Automated Energy Saving Room Controller Hub	PresenceSensor, Lamp, Switch, NoiseSensor	Room unoccupied (PresenceSensor) for period, auto turns off Lamp (via Switch logic) + other devices. NoiseSensor verifies silence before power down. Optimizes energy based on occupancy/activity.
754	Facial Expression Controlled Physical Avatar Puppeteering Robot	FaceSensor, Servos	FaceSensor tracks landmarks/expressions (mouth open, eyebrow raise). Data translated into commands for multiple Servos on physical puppet/animatronic face, mimicking expressions dynamically.
755	Critical Sound Classification Based Accessibility Alert Device	AudioClassifier, Lamp, Haptic	For hearing impaired: AudioClassifier identifies critical sounds (smoke alarm, doorbell). Triggers highly visible flashing Lamp + strong distinct Haptic vibration patterns.
756	Interactive Music Sequencer Using Tangible ArUco Blocks	ArUco, NotePlayer, Knob, Button	Arrange ArUco-tagged blocks on sequence/grid. Each marker = note/instrument/pattern (NotePlayer). Knob controls tempo; Button starts/stops playback. Tangible music creation.
757	Movement and Acceleration Based Light Painting Art Tool	CameraMovement, Lamp, Button, Acceleration	Lamp color/intensity controlled by speed (Acceleration) & direction (CameraMovement) of device movement. Hold Button to "paint" light trails (long exposure photos/ephemeral effect). Interactive kinetic art tool.
758	Tilt-Controlled Single-Switch Text Input Character Selector	Inclination, Text, Button	Tilting device (Inclination) left/right cycles focus through characters (Text display). Tilt forward/backward switches sets (lowercase/uppercase). Button selects highlighted character. Single-switch style text input.
759	GPS-Triggered Automated Historical Site Audio Narration Tour	GPS, TextToSpeech, Text	GPS detects proximity to predefined POIs. TextToSpeech auto narrates relevant history/stories. Text component displays related titles/images. Automated audio tour guide.
760	Adjustable Haptic Metronome for Silent Music Practice	Haptic, Knob, Button	Haptic generates timed rhythmic vibration pulses (silent metronome). Knob adjusts tempo (BPM, feedback via knob/text). Button starts/stops beat sequence. Discreet timing aid for musicians.
761	Orientation-Sensing Immersive Flight Simulator Yoke Controller	Orientation, Button, Haptic	Orientation translates device tilt/rotation (pitch/roll/yaw) into flight controls. Buttons for auxiliary functions (throttle). Haptic feedback simulates engine rumble/turbulence. Engaging physical controller.
762	Voice and Gesture Controlled Hands-Free Kitchen Recipe Assistant	VoiceRecognition, TextToSpeech, Text, HandSensor	Navigate recipes via voice commands (VoiceRecognition: "Next step"). TextToSpeech reads instructions; Text displays current step. HandSensor allows touchless navigation (air swipe) when hands busy/messy.
763	Interactive Anatomy Model with ArUco Label Identification	ArUco, TextToSpeech, Lamp	ArUco markers on anatomical model parts. Pointing camera triggers TextToSpeech (announce part name/description). Lamp illuminates corresponding physical area on model.
764	Hand Gesture Controlled Multi-Servo Robotic Arm Manipulator	HandSensor, Servos, Button	Hand gestures (fist=grab, open=release, pointing=direction) interpreted as commands for multi-Servo robotic arm. Button confirms actions/switches modes. Intuitive control for simple pick/place tasks.
765	Gamified Posture Training Exercise with Visual/Audio Feedback	BodySensor, Lamp, Text, SoundPlayer	BodySensor tracks posture vs target. Lamp changes color dynamically (green=correct, red=poor). SoundPlayer adds encouraging chimes/alert tones. Gamifies posture training process.
766	Smart Alarm Clock with Gradual Light and Sound Wakeup	LightSensor, Lamp, SoundPlayer, Knob	Lamp simulates sunrise (gradual brightening before alarm, adapting to LightSensor). SoundPlayer plays gentle escalating sounds at wake-up time. Knob sets alarm time/customizes profiles.
767	Presence-Activated Museum Exhibit Audio Description Player System	PresenceSensor, SoundPlayer, Text	Visitor stands stationary near exhibit (PresenceSensor). Auto triggers SoundPlayer (audio description/commentary). Text displays title/artist. Enhances accessibility/engagement.
768	Face Tracking Camera Mount with Automatic Servo Adjustment	FaceSensor, Servos, Switch	FaceSensor detects face position. Controls pan/tilt Servos holding camera to keep face centered. Switch toggles auto-tracking on/off.
769	Public Noise Pollution Monitor with Visual Lamp Indicator	NoiseSensor, Lamp, Text	NoiseSensor monitors ambient level. Lamp changes color based on thresholds (green=quiet, yellow=moderate, red=loud), Text displays decibel reading/category. Intuitive visual noise indicator.
770	Movement-Sensitive Interactive Floor Projection Game System	CameraMovement, SoundPlayer, Lamp (as projector)	CameraMovement (overhead) detects user motion on projected floor graphics (Lamp as source). Interaction (stepping on keys) triggers sounds (SoundPlayer) / visual changes.
771	Hand Position and Voice Controlled Theremin-Style Instrument	AudioClassifier, NotePlayer, HandSensor	HandSensor (position) controls volume/pitch of NotePlayer (Theremin-like). AudioClassifier analyzes vocal input (humming) to alter timbre/add effects.
772	GPS Guided Urban Tour Navigator with Haptic Directions	GPS, Haptic, TextToSpeech	GPS tracks location on tour route. Haptic gives directional vibration cues (pulse left=turn left). TextToSpeech provides spoken directions/POI info. Multi-sensory navigation aid.
773	Acceleration-Based Tap Sensitive Virtual Drum Machine Pad	Acceleration, SoundPlayer, Button	Tapping/striking device detected (Acceleration). Intensity/location/pattern maps to different drum sounds (SoundPlayer: kick, snare). Button switches kits/records.
774	Orientation Controlled Physical Puzzle Piece Rotator Mechanism	Orientation, Servos, Lamp	Rotating controller (Orientation) controls Servos rotating physical game piece. Lamp indicates when piece reaches correct target orientation for puzzle.
775	Tilt-Activated Fall Detection and Safety Alert System	Inclination, Haptic, TextToSpeech, Button	Inclination monitors for sudden tilt changes (fall). Initiates countdown timer. No Button press to cancel = triggers Haptic alert + TextToSpeech call for help/emergency contact.
776	Interactive Storytelling Driven by Voice and Facial Expression	VoiceRecognition, FaceSensor, TextToSpeech, Text	Narrative via TextToSpeech/Text display. User influences plot via spoken commands (VoiceRecognition) or recognized facial expressions (FaceSensor). Multimodal story control.
777	ArUco Marker Object Tracking Mobile Robot Follower Demo	ArUco, Servos, CameraMovement	Robot uses ArUco to identify target marker. Uses CameraMovement/marker analysis to adjust wheel Servos, attempting to follow marked object autonomously.
778	Hand Gesture Controlled Wireless Presentation Slide Navigator	HandSensor, Text, Haptic	Hand gestures (swipe left/right) interpreted as commands (prev/next slide). Controls presentation software. Text confirms command. Haptic discreetly confirms gesture recognition.
779	Physical Therapy Exercise Monitor with Form Correction & Rep Counter	BodySensor, Text, NotePlayer, Button	BodySensor tracks movements vs template, counts reps. Text displays instructions/count. NotePlayer gives timing cues / form signals (correct/incorrect). Button resets/advances routine.
780	Light-Sensitive Automated Pet Door Curtain Controller with Presence Override	LightSensor, Servos, PresenceSensor	Servos open/close pet door curtain based on light level (LightSensor: open=morning, close=night). PresenceSensor near door overrides schedule, opens curtain for approaching pet.
781	Smart Office Noise Level Monitoring and Indicator Sign	NoiseSensor, Text, Lamp, Switch	NoiseSensor monitors level. Text displays messages ("Quiet Zone") when thresholds exceeded. Lamp changes color (green->yellow->red). Switch adjusts sensitivity/activates quiet hours.
782	Facial Expression Based Music Playlist Mood Recommendation Engine	FaceSensor, SoundPlayer, Text	FaceSensor infers mood (happy, calm). System selects/plays suitable music playlist (SoundPlayer). Text displays detected mood/selected playlist title.
783	Real-Time Interactive Sound Wave Visualization Lamp Display Art	AudioClassifier, Lamp, Knob	AudioClassifier analyzes sound features (frequency, amplitude). Data dynamically controls Lamp color (frequency), brightness (amplitude), patterns. Visual representation of soundscape. Knob adjusts sensitivity.
784	Movement-Activated Security Camera Recording Trigger & Warning	CameraMovement, Servos, TextToSpeech	CameraMovement detects motion in secured area. Triggers simulated recording (indicator light), commands Servos (pan/tilt camera towards motion), issues TextToSpeech audible warning.
785	GPS-Based Geofencing Child Safety Alert Notification System	GPS, Haptic, SoundPlayer, Text	GPS monitors child location vs safe zones (geofences). Crossing boundary triggers alerts on parent device: Haptic vibration, SoundPlayer alarm, Text notification (location).
786	Tilt-Controlled Servo Balancing Platform Physical Skill Game	Inclination, Servos, Acceleration	Tilting controller (Inclination) controls Servos adjusting physical platform angle. Goal: keep object (with Acceleration sensor?) balanced on platform. Physical skill/balance game.
787	Interactive Haptic Feedback Enhanced Storytelling Experience Device	Haptic, Text, Button, SoundPlayer	Story displayed (Text). Keywords/events trigger corresponding Haptic effects (rumble=thunder). Button advances story. SoundPlayer adds ambient sounds. Multi-sensory narrative.
788	Orientation and GPS Based Star Gazing Celestial Pointer Aid	Orientation, GPS, Text, Lamp	Uses Orientation + GPS/time to calculate direction of celestial objects. Text identifies object aimed at. Lamp projects faint beam/crosshair to aid locating.
789	Voice Controlled Centralized Smart Home Hub Management Interface	VoiceRecognition, Lamp, Switch, Text, SoundPlayer	Voice commands manage devices: toggle Switches, control Lamp state, stream audio (SoundPlayer), display status (Text). Central multimodal hub.
790	ArUco Marker Guided Step-by-Step Product Assembly Assistant	ArUco, TextToSpeech, Lamp, Servos	ArUco recognizes part/step marker. TextToSpeech gives context-aware instructions. Lamp highlights target location. Servos rotate 3D model/diagram. Assembly guidance.
791	Hand Gesture and Orientation Based Drone Flight Simulator Control	HandSensor, Orientation, Haptic	Hand gestures (HandSensor) for primary commands (throttle, direction). Orientation (tilt) for attitude (pitch/roll). Haptic simulates motor vibrations/wind. Immersive drone sim control.

792	Biofeedback Relaxation Trainer Using Body Sensor Monitoring	BodySensor, TextToSpeech, SoundPlayer, Lamp	BodySensor monitors indicators (posture stability, stillness). TextToSpeech guides relaxation. SoundPlayer/Lamp adapt (volume down, soothing colors) as user shows relaxation signs.
793	Ambient Light Adaptive Smart Display Brightness Controller	LightSensor, Text, Knob	LightSensor measures room light. Auto-adjusts display brightness (Text visibility/simulated) for comfort/eye strain/energy saving. Knob sets base level/manual override.
794	Presence and Movement Activated Interactive Public Sound Installation	PresenceSensor, SoundPlayer, CameraMovement	PresenceSensor detects people, SoundPlayer plays base soundscape. CameraMovement analyzes collective motion (density, speed), dynamically modulates soundscape (layers, tempo, effects). Audience behavior shapes artwork.
795	Facial Expression Controlled Video Game Character Input Method	FaceSensor, Button, SoundPlayer	Facial expressions (surprise=jump, wink=use item) trigger game character actions. Button for basic movement. SoundPlayer provides game audio/feedback.
796	Noise-Responsive Classroom 'Traffic Light' Attention Level Monitor	NoiseSensor, Lamp, Switch	NoiseSensor monitors classroom noise. Lamp acts as traffic light indicator (Green=OK, Yellow=Warning, Red=Too loud). Switch adjusts sensitivity/disables feedback.
797	Accessible Sound Identification Quiz Game for Visually Impaired Users	AudioClassifier, TextToSpeech, Button, Haptic	System plays sounds (AudioClassifier/files). User identifies (selects from TextToSpeech choices via Buttons). TextToSpeech gives instructions/results. Haptic confirms correct/incorrect.
798	Movement-Enhanced Interactive Shadow Puppet Theater Performance System	CameraMovement, Lamp, SoundPlayer, BodySensor	BodySensor tracks puppeteer movements behind screen (Lamp source). CameraMovement analyzes shadow motion intensity/patterns. Dynamically triggers narrative sound effects/music (SoundPlayer). Enhances show expressiveness.
799	GPS Location-Tagged Voice Memo Field Notes Recorder Application	GPS, VoiceRecognition, Text, Button	Record voice notes (VoiceRecognition) via Button press. Each memo auto-tagged with GPS coordinates + timestamp. Review notes later (displayed via Text + map data?). Field research/journaling tool.
800	Tilt-Controlled Robotic Arm Precision Obstacle Course Navigator Game	Inclination, Servos, Haptic, ArUco	Navigate multi-Servo robot arm through obstacle course via controller tilt (Inclination). Haptic feedback on collision. ArUco markers designate start/checkpoints/target. Physical skill game.
801	Presence-Activated Welcome Message Speaker	PresenceSensor, TextToSpeech	PresenceSensor detects entry, triggers TextToSpeech (pre-programmed welcome). Automated friendly interaction (entrances, exhibits, smart home). Responsive to presence without direct input.
802	Ambient Light Controlled Musical Note Player	LightSensor, NotePlayer	LightSensor measures brightness, level modulates NotePlayer pitch/volume. Musical notes change with light. Ambient soundscape reflecting lighting (therapeutic settings, art installations).
803	ArUco Marker Guided Servo Pointer System	ArUco, Servos	System scans for ArUco markers. Identifying designated marker, calculates position, commands servo to physically point towards it. Guide users, highlight items, assist sorting.
804	Body Pose Triggered Sound Effect Player	BodySensor, SoundPlayer	BodySensor tracks posture/movements. Specific pose (arms raised, jump) triggers SoundPlayer (corresponding sound effect). Interactive games, fitness apps (pose confirms exercise), performance art (body language generates sound).
805	Facial Smile Detected Haptic Feedback Device	FaceSensor, Haptic	FaceSensor detects smile, activates Haptic gentle vibration pulse. Biofeedback (mood monitoring), interactive installations (reward positive expression), assistive tech (subtle confirmation cues).
806	Noise Level Responsive Ambient Lamp Dimmer	NoiseSensor, Lamp	NoiseSensor measures sound level, data controls Lamp brightness/color intensity (quiet=soft glow, noisy=brighten/change color). Visual feedback on noise levels (libraries, offices).
807	Voice Command Recognition and Text Display	VoiceRecognition, Text	Speak commands/dictation (VoiceRecognition processes, converts to text). Text displayed via Text component. Hands-free operation, notes, command confirmation, accessibility.
808	Specific Sound Detection and Spoken Alert	AudioClassifier, TextToSpeech	AudioClassifier listens for sounds (YAMNet: smoke alarm, bark, cry). Detected target sound prompts TextToSpeech relevant alert message. Enhance situational awareness, accessibility alerts, environment monitoring.
809	Device Shake Activated Sound Effect Generator	Acceleration, SoundPlayer	Acceleration detects vigorous shake. Triggers SoundPlayer (predefined sound effect: rattle, chime). Interactive toys, motion-controlled game inputs, physical feedback mechanism.
810	Tilt-Controlled Servo Angle Adjustment Mechanism	Inclination, Servos	Inclination measures tilt angle. Real-time angle data directly controls angular servo position. Tilt device to adjust servo angle. Intuitive control (robotic arms, camera mounts).
811	Device Orientation Based Musical Chord Player	Orientation, NotePlayer	Orientation determines rotation (up, down, left tilt). Different orientations trigger NotePlayer (specific notes/chords). Rotate device to explore harmonic space interactively. Creative expression/educational tool.
812	Simple On/Off Switch Controlled Lamp	Switch, Lamp	Toggling physical/digital Switch directly controls Lamp state (on/off). Basic, familiar interface for light control. Demonstrates input-output linkage.
813	Knob Controlled Numerical Value Text Display	Knob, Text	Turning Knob translates position into numerical value, continuously updated/displayed (Text component). Intuitive analog-style control for setting parameters/levels.
814	GPS Coordinate Triggered Location Announcement System	GPS, TextToSpeech	GPS monitors location. Entering predefined coordinates/zones triggers TextToSpeech (announce location name/info). Automated tour guides, location-aware reminders, accessibility navigation.
815	Button Press Activated Haptic Feedback Confirmation	Button, Haptic	Pressing physical/digital Button triggers immediate brief Haptic vibration. Tactile confirmation of successful input detection. Enhances UX (noisy environments, visual impairment).
816	Low-Light Presence Detection Automated Lamp Activation	PresenceSensor, LightSensor, Lamp	Lamp activates only if PresenceSensor detects person AND LightSensor indicates low brightness. Energy-efficient automatic lighting (activates only when needed). Hallways/security.
817	ArUco Marker Scan Information Text Display	ArUco, Text	Point camera at ArUco marker. ArUco identifies ID, retrieves associated info, displays (Text component). Context-specific info (museums, education, inventory) without complex recognition.
818	Hand Gesture Controlled Musical Note Interface	HandSensor, NotePlayer	HandSensor tracks gestures (open palm, fist). Recognized gesture triggers NotePlayer (distinct note/sequence). Touchless musical interface via gestures (art, education, therapy).
819	Body Posture Reflective Color-Changing Lamp	BodySensor, Lamp	BodySensor monitors posture (slouching vs upright). Data dynamically changes Lamp color/brightness (good=green, slouching=red). Real-time visual feedback for ergonomics/mindfulness.
820	Facial Expression Triggered Conversational Prompt System	FaceSensor, TextToSpeech	FaceSensor detects expression (surprise, confusion). Triggers TextToSpeech contextual question/comment ("What caught your eye?"). Fosters interaction (robots, assistants, user reaction gauge).
821	Loud Noise Detected Vibrating Alert Device	NoiseSensor, Haptic	NoiseSensor monitors sound. Noise exceeds threshold (slam, alarm), activates strong Haptic vibration alert. Non-auditory notification (loud environments, hearing impaired).
822	Voice Command Controlled Servo Motor Operation	VoiceRecognition, Servos	Speak commands ("open," "rotate left"). VoiceRecognition processes, translates to signals controlling servo movements. Hands-free operation of simple robotic mechanisms.
823	Music Detection Responsive Pulsating Light Display	AudioClassifier, Lamp	AudioClassifier identifies music presence (YAMNet). Controls Lamp to pulse gently (possibly changing color/brightness in basic rhythm). Simple visualizer reacting to music presence.
824	Acceleration Force Measurement Textual Display Unit	Acceleration, Text	Acceleration measures G-forces (X,Y,Z). Values displayed numerically (Text component). Physics experiments, vehicle monitoring, sports tech (quantitative force data).
825	Device Tilt Angle Based Lamp Color Gradient	Inclination, Lamp	Tilt angle (Inclination) mapped to control Lamp color gradient (tilt forward=blue shift, backward=red shift). Intuitive visual representation of orientation via changing light colors.
826	Device Rotation Controlled Spatial Audio Player	Orientation, SoundPlayer	Orientation tracks rotation. Data manipulates SoundPlayer audio (stereo panning, soundscape layers). Rotating device changes audio sound, simulating spatial effects (games, VR).
827	Switch Activated Servo Movement Sequence Controller	Switch, Servos	Flipping Switch 'on' triggers predefined servo movement sequence (sweep, open/close). 'Off' stops/returns to default. Simple binary control initiates complex physical actions.
828	Knob Controlled Audio Playback Volume Adjuster	Knob, SoundPlayer	Turning Knob rotational position mapped to control SoundPlayer volume level. Familiar analog-style interface for adjusting sound volume smoothly.
829	Geographical Zone Based Lamp Color Indicator	GPS, Lamp	GPS tracks location vs predefined zones. Lamp changes color based on current zone (blue=park, green=safe zone, red=restricted). Simple visual location context.
830	Button Press Triggered System Status Announcement	Button, TextToSpeech	Pressing Button gathers status info (time, battery), TextToSpeech announces information verbally. Quick updates/status check without screen viewing (accessibility, diagnostics).
831	Presence Near Marker Triggered Object Information Speaker	PresenceSensor, ArUco, TextToSpeech	PresenceSensor detects user presence near ArUco marker (identified by ArUco). Triggers TextToSpeech (info associated with marker). Interactive exhibits activating automatically on approach.
832	Dim Light Face Detection Gentle Illumination System	LightSensor, FaceSensor, Lamp	If environment dim (LightSensor), FaceSensor detects face. Lamp activates with soft, warm light towards user. Gentle facial illumination for communication in dark settings.
833	Fast Motion Detected Pulsing Haptic Alert System	CameraMovement, Haptic	CameraMovement detects significant/rapid motion. Triggers distinct pulsing Haptic vibration pattern. Proximity alert, security notification, game feedback for quick movements.
834	Hand Gesture Controlled Servo Gripper Actuation	HandSensor, Servos	Hand gestures (open palm vs closed fist) interpreted as commands controlling servo gripper (open/close). Intuitive touchless control of robotic manipulator.
835	User Movement Speed Controlled Music Tempo Player	BodySensor, NotePlayer	BodySensor tracks movement speed/intensity (walk vs run). Data dynamically controls NotePlayer tempo. Interactive music experience where activity level influences music pace.
836	Yawning Detection Gentle Lullaby Sound Player	FaceSensor, SoundPlayer	FaceSensor detects facial landmarks indicative of yawning. Triggers SoundPlayer (short gentle lullaby/calming sound). Smart nursery monitors, relaxation apps, empathetic response system.
837	Real-Time Ambient Noise Level Text Display	NoiseSensor, Text	NoiseSensor measures ambient noise level. Real-time value formatted/displayed numerically/graphically (Text component). Simple sound level meter (monitoring, classroom management).
838	Voice Activated Light with Spoken Confirmation Feedback	VoiceRecognition, Lamp, TextToSpeech	Speak command ("Turn light on"). VoiceRecognition processes, activates Lamp. TextToSpeech provides verbal confirmation ("Okay, turning light on"). Closed-loop voice control with clear feedback.
839	Specific Sound Pattern Unique Vibration Feedback System	AudioClassifier, Haptic	AudioClassifier identifies predefined sound events (doorbell chime, knock). Triggers unique Haptic vibration pattern per sound. Distinguish auditory events via distinct tactile feedback (hearing impaired).
840	Sudden Impact Detection Servo Safety Lock Mechanism	Acceleration, Servos	Acceleration detects high-magnitude spike (impact/drop). Immediately commands Servo safety action (engage lock/brace). Protective casing, impact-triggered safety response demo.
841	Current Device Tilt Angle Numerical Text Display	Inclination, Text	Inclination measures current tilt angles (X,Y,Z). Values continuously updated/displayed numerically (Text component). Digital inclinometer/level (calibration, physics).
842	Target Orientation Match Haptic Confirmation Buzz	Orientation, Haptic	Orientation tracks device vs predefined target orientation. Matching target within tolerance triggers confirming Haptic buzz/vibration. Spatial navigation, calibration, puzzle games.
843	Switch Controlled Simple Melody Start/Stop Player	Switch, NotePlayer	Flipping Switch 'on' triggers NotePlayer (predefined simple melody). 'Off' stops playback. Straightforward binary control for basic musical output (toys, notifications).
844	Knob Controlled Smooth Lamp Hue Adjustment Interface	Knob, Lamp	Turning Knob rotational position mapped across color spectrum (hue value). Dynamically adjusts Lamp color. Smooth continuous color selection via analog-style control.
845	Location-Based Audio Guide Player System	GPS, SoundPlayer	GPS monitors location. Entering predefined zones triggers SoundPlayer (corresponding audio files: info/commentary). Location-aware audio tour guide (museums, cities).
846	Button Press Initiated Servo Movement Sequence	Button, Servos	Pressing Button triggers predefined sequence of Servo movements (sweep and return, coordinated actions). Simple input method activates complex mechanical behaviors.
847	Typed Text to Spoken Word Output System	Text, TextToSpeech	User inputs text (Text component). Entered text string processed/spoken aloud (TextToSpeech). Basic text-to-speech interface (communication aids, reading assistance).
848	Presence and Noise Triggered Warning Lamp System	PresenceSensor, NoiseSensor, Lamp	Activates warning Lamp (flashing red) only if PresenceSensor detects person AND NoiseSensor measures noise above threshold. Indicates potential hazard/disruption based on combined conditions.
849	Pointing Gesture at Marker Triggered Audio Information	HandSensor, ArUco, TextToSpeech	HandSensor detects pointing gesture + ArUco identifies targeted marker. Triggers TextToSpeech (info associated with identified marker). Intuitive way to request details about labeled objects.
850	Pose and Movement Combination Triggered Celebration Sound	BodySensor, CameraMovement, SoundPlayer	Requires specific pose (BodySensor) + simultaneous specific movement (CameraMovement: jump). Precise combination detected triggers celebratory sound (SoundPlayer). Complex gesture recognition (games).
851	Attentive Face Triggered Voice Dictation Display	FaceSensor, VoiceRecognition, Text	FaceSensor detects attentive face towards device. Only then enables VoiceRecognition for dictation. Recognized speech converted to text, displayed (Text). Context-aware dictation system.
852	Ambient Light and Noise Level Spoken Summary Report	LightSensor, NoiseSensor, TextToSpeech	Periodically/on-demand, checks brightness (LightSensor) & noise level (NoiseSensor). Synthesizes info into spoken summary ("Environment bright and moderately noisy") via TextToSpeech. Quick environmental assessment.
853	Sound Classification with GPS Location Logging Textual Output	AudioClassifier, GPS, Text	AudioClassifier identifies sounds ("siren," "construction noise"). Records sound type + GPS coordinates. Log entry (sound type + location) displayed/appended (Text output). Environmental sound mapping tool.
854	Fall Detection Alert via Acceleration and Tilt Sensors with Haptics	Acceleration, Inclination, Haptic	Monitors for fall pattern: Acceleration spike (impact) + significant Inclination change (vertical to horizontal). Triggers urgent strong Haptic vibration alert. Personal fall detector device.
855	Orientation Controlled Servo Shadow Puppet Theater Lamp	Orientation, Servos, Lamp	Device Orientation controls positions of two Servos manipulating cutout shapes. Lamp projects light past shapes, creating moving shadow puppets controlled by tilting/rotating device. Novel interactive storytelling/art tool.
856	Presence and Smile Detection Servo Treat Dispenser	PresenceSensor, FaceSensor, Servos	PresenceSensor detects nearby user. FaceSensor monitors for smile. Detecting smile commands Servo (open door, rotate platform) to dispense treat/reward. Positive reinforcement interaction mechanism.
857	Motion Near Specific Marker Triggered Object Sound Effect	CameraMovement, ArUco, SoundPlayer	ArUco identifies specific locations/objects marked with tags. CameraMovement detects motion physically close to identified marker. SoundPlayer plays audio clip associated with that marker. Contextual audio cues based on activity near tagged items.
858	Combined Hand Gesture and Voice Command Confirmation System	HandSensor, VoiceRecognition, TextToSpeech	Critical actions require dual confirmation: specific HandSensor gesture (thumbs-up) + simultaneous spoken command (VoiceRecognition: "Confirm"). Both inputs received = system proceeds + TextToSpeech feedback. Enhances safety/intent verification.
859	Posture Tracking During GPS Monitored Walk Textual Feedback	BodySensor, GPS, Text	While user moves (GPS tracking), BodySensor monitors posture (spine alignment). Real-time feedback or summary report on Text display, correlating posture quality with walk/run segments. Aids ergonomic awareness during outdoor activity.
860	Noise Type Differentiation Lamp Indicator System	NoiseSensor, AudioClassifier, Lamp	NoiseSensor gauges volume; AudioClassifier identifies sound type. Controls Lamp to indicate both: high general noise=yellow lamp (NoiseSensor); if identified as alarm (AudioClassifier)=flashing red lamp. Nuanced visual environmental feedback.
861	Light-Dependent Switch Activation for Servo Control	LightSensor, Switch, Servos	Switch controlling Servos is conditional on light level (LightSensor). Switch activates servo (open blind) only if sufficient daylight detected. Prevents nighttime operation or allows different behavior based on context.
862	Tilt-Guidance Musical Feedback System with Knob Target Setting	Inclination, Knob, NotePlayer	User sets target tilt angle (Knob). Tilting device, Inclination measures current angle. NotePlayer gives auditory feedback (pitch indicates proximity to target angle). Guides user precisely towards desired orientation using sound.
863	Save and Recall Device Orientation with Haptic Confirmation	Orientation, Button, Haptic	User presses Button to save current device Orientation. Later, when device returns to saved orientation (within tolerance), Haptic confirms match. Resetting position or spatial memory tasks.
864	GPS Coordinate Display with Text Input Destination Navigation Sounds	Text, GPS, SoundPlayer	Text displays current GPS coordinates. User inputs destination (Text input). System tracks progress (GPS), provides simple navigational cues (proximity alerts, tones) via SoundPlayer (simulated navigation).
865	Presence-Activated Hand Gesture Theremin Instrument	PresenceSensor, HandSensor, NotePlayer	Activates only when PresenceSensor detects user. HandSensor tracks hand position/gestures, controls NotePlayer pitch/volume (Theremin-like). Hand movements create continuous tones. Expressive interactive sound installation.
866	ArUco Marker Pose Matching Game with Lamp Feedback	ArUco, BodySensor, Lamp	User stands on ArUco-marked mat. Attempts target pose (verified by BodySensor). Correct pose held over marker lights up Lamp (green). Simple interactive game (location + action).
867	Sad Face and Crying Sound Detection Comforting Response System	FaceSensor, AudioClassifier, TextToSpeech	Monitors distress signals: FaceSensor (sad/crying expression) + AudioClassifier (crying sounds). Both indicators suggest distress, TextToSpeech delivers comforting phrases/offers assistance. Companion robots/mental health monitoring.
868	Simultaneous Motion and Loud Noise Urgent Haptic Alert	CameraMovement, NoiseSensor, Haptic	Triggers alert only when high motion (CameraMovement) AND loud noise (NoiseSensor) occur simultaneously (significant event: fall, collision). Triggers strong urgent Haptic vibration pattern.
869	Voice Query for Current Location GPS Address Display	VoiceRecognition, GPS, Text	User asks "Where am I?" (VoiceRecognition). System fetches GPS coordinates. Converts coordinates to street address/place name (external lookup?), displays result (Text output).
870	Motion-Based Object Sound Simulator Using Multi-Sensor Input	Acceleration, Orientation, SoundPlayer	Simulates object sound based on handling. Shaking (Acceleration)=rattling sounds. Orientation determines sound variation (different if shaken upside down). Realistic/complex motion-based audio feedback.
871	Tilt-Constrained Switch Operation with Haptic Feedback	Inclination, Switch, Haptic	Switch active only if device held within specific tilt range (Inclination). Flipping switch while correctly oriented proceeds action + Haptic confirmation. Prevents accidental operation unless held properly.
872	Knob-Based List Selection with Text Display and Spoken Confirmation	Knob, Text, TextToSpeech	List displayed (Text). Turn Knob to scroll/highlight options. Select option (button press?), system confirms by speaking chosen option name (TextToSpeech). Multimodal feedback for menu navigation.
873	Button Press GPS Location Logging with Servo Marker Drop	Button, GPS, Servos	Press Button, system logs current GPS coordinates. Simultaneously commands Servo (release physical marker/flag). Field research, surveying, physical waypoint marking.
874	Dark Environment Hand Proximity Guidance Haptic Pulse System	LightSensor, HandSensor, Haptic	In low light (LightSensor), HandSensor scans for hand proximity. As hand approaches target point, Haptic pulses increase frequency/intensity. Non-visual guidance towards control in darkness.
875	Object Marker Scan with Facial Reaction Modulated Music Player	ArUco, FaceSensor, NotePlayer	Identify object (ArUco marker). Gauge user facial reaction (FaceSensor: happy, neutral). Emotion modulates NotePlayer music characteristics (tempo, mode). Responsive soundtrack reflecting user engagement.
876	Ergonomic Score Display Based on Body Posture and Arm Tilt Lamp	BodySensor, Inclination, Lamp	Assesses ergonomics: BodySensor (posture) + Inclination (arm sensor position). Fused into score, visually represented by Lamp color/brightness. Real-time feedback (typing, assembly).
877	Motion-Triggered Voice Password Servo Lock System	CameraMovement, VoiceRecognition, Servos	CameraMovement detects approach. Triggers prompt for password. VoiceRecognition listens for correct spoken password. Correct password = commands Servo to unlock mechanism.
878	Sound Source Classification with Simulated Directional Audio Output	AudioClassifier, Orientation, SoundPlayer	AudioClassifier identifies sound (bird song). Based on device Orientation (relative to sources), SoundPlayer plays sound with simulated directionality (louder left/right channel). Indicates inferred sound source direction.
879	Button-Triggered Ambient Noise Level Announcement System	NoiseSensor, Button, TextToSpeech	Press Button. System measures ambient noise (NoiseSensor), categorizes (quiet, loud), TextToSpeech announces finding ("Current noise level is loud"). Check environmental conditions on demand.
880	High-G Event Logging with GPS Coordinates Text Display	Acceleration, GPS, Text	Acceleration monitors for significant G-force events (>2G: pothole, impact). Logs event time, peak acceleration, GPS coordinates. Displays info (Text output) for review/analysis.
881	Switch Enabled Orientation Control for Dual Servo Robot Arm	Switch, Orientation, Servos	Switch enables/disables mode. When 'on', device Orientation (tilt/rotation) controls angles of two Servos (robot arm/pan-tilt). When 'off', servos fixed/neutral. Intuitive physical control on demand.
882	Multi-Sensory Knob Control with Haptic and Audio Feedback	Knob, Haptic, NotePlayer	Turning Knob adjusts parameter + provides multi-sensory feedback: Haptic vibration intensity changes with position; NotePlayer emits corresponding varying pitch tones. Rich engaging control reinforcing value.
883	Interactive Exhibit Marker Information Display with Illumination	PresenceSensor, ArUco, Lamp, Text	PresenceSensor detects visitor approach. System scans for ArUco marker on artifact. Identifying marker illuminates object (Lamp) + displays detailed info (Text). Engaging interactive museum display.
884	Low-Light Motion Detection Verbal Warning System	LightSensor, CameraMovement, TextToSpeech	If LightSensor indicates darkness AND CameraMovement detects motion, triggers TextToSpeech verbal warning ("Warning: Motion detected in dark"). Deters intruders/alerts occupants.
885	Combined Hand Gesture and Body Pose Rewarding Sound Player	HandSensor, BodySensor, SoundPlayer	Requires specific HandSensor gesture + simultaneous BodySensor pose (peace sign + one leg balance). Correct combined action recognized triggers SoundPlayer reward chime. Advanced games/therapy.
886	Frowning in Noisy Environment Calming Haptic Pulse Delivery	FaceSensor, NoiseSensor, Haptic	If FaceSensor detects frown (stress?) AND NoiseSensor indicates noisy environment (stressor?), system provides gentle rhythmic Haptic pulse (calming/mindfulness reminder).
887	Speech vs. Sound Differentiation Textual Log System	VoiceRecognition, AudioClassifier, Text	Processes input via VoiceRecognition (speech) + AudioClassifier (other sounds). Outputs differentiating messages (Text: "Speech detected: [text]" or "Sound detected: [type]"). Insight into auditory environment.
888	Complex Motion-Based Soundscape Generator Multi-Sensor Input	Acceleration, Inclination, Orientation, SoundPlayer	Creates dynamic soundscape controlled by movement: Acceleration=intensity/volume; Inclination=pitch/filter; Orientation=panning/layers (SoundPlayer). Highly expressive interactive audio via nuanced motion.
889	GPS Zone Tracking Mode with Visual Lamp Indicator Status	GPS, Switch, Lamp	User flips Switch to enter 'tracking mode'. GPS monitors location vs home/safe zone. Lamp gives visual status: blinking green=inside zone, red=outside, yellow=GPS lost. Easy location status indicator.
890	Servo Selection and Precise Position Control Knob Interface	Button, Knob, Servos	Press Button to select target servo. Turn Knob for fine-grained angular position adjustment of selected servo. Detailed manual control over mechanical components.

891	Text Display with Synchronized Speech and Haptic Emphasis Feedback	Text, TextToSpeech, Haptic	Important info displayed (Text) + read aloud (TextToSpeech). Haptic provides synchronized vibrations (pulse keywords, subtle texture during speech). Enhances focus/comprehension, accessible feedback.
892	Presence and Face Recognition Greeting with Facial Illumination System	PresenceSensor, FaceSensor, TextToSpeech, Lamp	PresenceSensor detects approach. FaceSensor detects face looking at system. TextToSpeech delivers greeting (generic/personalized?). Lamp provides soft focused illumination on user face. Welcoming focal point.
893	Gesture-Targeted Marker Action Confirmation Sound and Servo Actuation	ArUco, HandSensor, Servos, SoundPlayer	User points specific gesture (HandSensor) at ArUco-marked object. System identifies marker (ArUco), verifies gesture. If match command ('dispense' at 'dispenser'), activates Servo + confirmation SoundPlayer tone. Targeted deliberate action.
894	Body Tilt and Device Orientation Harmonic Music Generator	BodySensor, Orientation, NotePlayer	Musical interface: Body tilt (BodySensor: torso angle) + device Orientation (3D) mapped to different musical parameters (root note, chord type) via NotePlayer. Generates complex harmonies via intuitive whole-body/device movements.
895	Motion and Specific Sound Event Combined Alert Textual and Haptic Output	CameraMovement, AudioClassifier, Text, Haptic	Detects simultaneous events: CameraMovement motion + AudioClassifier critical sound ("glass breaking"). Displays urgent alert message (Text) + triggers distinct strong Haptic pulse pattern. Immediate attention required.
896	Voice Command Timer Setting with Knob Adjustment Spoken Confirmation	VoiceRecognition, Knob, TextToSpeech	Voice command initiates timer setting ("Set timer"). User sets duration (Knob, optional Text display). Adjustment stops, TextToSpeech confirms setting ("Timer set for 5 minutes"). Blends voice initiation + analog control + audio feedback.
897	Environmental Light Noise GPS Data Logger Text Display	LightSensor, NoiseSensor, GPS, Text	Mobile environmental monitor: Periodically logs light level (LightSensor), noise level (NoiseSensor), GPS coordinates. Data (timestamp, light, noise, location) stored/displayed (Text output). Environmental studies/tracking.
898	Impact-Triggered Servo Deployment with Arming Button Haptic Feedback	Acceleration, Button, Servos, Haptic	User arms system (Button). Acceleration monitors for high G-force impact. Threshold exceeded = commands Servo deployment (airbag, shield) + strong Haptic confirmation feedback.
899	Interactive Storytelling Controlled by Hand Gestures and Voice	HandSensor, VoiceRecognition, TextToSpeech, SoundPlayer	Story via TextToSpeech. User choices via Hand Gestures (wave left/right) or VoiceRecognition commands ("Go into cave"). Story branches, continues (TextToSpeech) + potentially SoundPlayer effects. Engaging multimodal interactive narrative.
900	Physical Therapy Exercise Guidance Pose Sensor Audio Feedback Servo Resistance	BodySensor, TextToSpeech, Servos, NotePlayer	TextToSpeech gives exercise instructions. BodySensor monitors pose vs target. NotePlayer gives real-time feedback (pitch=joint angle). Servo adjusts resistance band tension based on progress/phase. Guided therapy + active feedback + adaptive resistance.
901	Gesture-Controlled Musical Note Player Interface	HandSensor, NotePlayer	HandSensor detects gestures (pointing, fist), translates into commands for NotePlayer. Play notes/melodies interactively via gestures. Non-contact instrument (education, entertainment).
902	Presence-Activated Ambient Soundscape Player System	PresenceSensor, SoundPlayer	PresenceSensor detects entry (compares view to baseline). Triggers SoundPlayer (pre-selected ambient soundscape: nature, music). Welcoming atmosphere activates automatically when needed.
903	Environmental Light Level Reactive Lamp Adjustment	LightSensor, Lamp	LightSensor measures ambient brightness. Lamp auto-adjusts brightness/color temp (brightens=dim, warms=evening). Responsive, comfortable lighting (smart home, workspace).
904	Motion Direction Indicator Using Servo Pointer	CameraMovement, Servos	CameraMovement detects motion magnitude/direction. Data controls angular Servo, making physical pointer pivot towards detected motion. Simple visual cue (interactive displays, security feedback).
905	Object Identification Announcer Using ArUco Markers	ArUco, TextToSpeech	Place ArUco-tagged object in view. ArUco identifies ID, looks up info (name/description). TextToSpeech announces info aloud. Interactive learning tool or accessibility aid.
906	Posture Correctness Feedback Via Haptic Buzz	BodySensor, Haptic	BodySensor tracks posture landmarks. Detects slouching/deviation from correct pose, triggers gentle Haptic vibration reminder. Ergonomic health application.
907	Facial Expression Controlled Music Mood Player	FaceSensor, SoundPlayer	FaceSensor analyzes expressions, detects emotions (happy, sad). Selects/plays music from corresponding mood category via SoundPlayer. Adaptive music experience reacting to apparent emotional state.
908	Ambient Noise Level Visualizer Light Bar	NoiseSensor, Lamp	NoiseSensor monitors sound level. Level mapped to control Lamp brightness/color (brighter/redder=louder). Intuitive visual feedback (libraries, offices, hospitals).
909	Voice Command Execution Confirmation Speaker Output	VoiceRecognition, TextToSpeech	User speaks command (VoiceRecognition). System processes command, TextToSpeech verbally confirms action taken ("Turning on light"). Clear feedback for voice control.
910	Sound Classification Triggered Information Display Screen	AudioClassifier, Text	AudioClassifier identifies sounds (YAMNet: doorbell, bark, alarm). Relevant sound classified, system displays corresponding message (Text component). Alerts/info for hearing-impaired/monitoring.
911	Device Shake Intensity Controlled Sound Pitch	Acceleration, NotePlayer	Acceleration measures shake force/direction. Shake intensity controls NotePlayer sound pitch. Simple motion-reactive digital instrument/sound toy.
912	Tilt Angle Controlled Servo Arm Position	Inclination, Servos	Inclination measures tilt angle (X, Y axes). Angle data mapped to control angular Servo position. Tilting device moves servo arm proportionally. Intuitive physical control (demos, robotics).
913	Device Orientation Based Information Text Display	Orientation, Text	Orientation determines position (portrait, landscape, face-up). Text component displays different relevant info/layouts based on orientation. Context-aware displays adapting to handling.
914	Manual Switch Activated Haptic Feedback Pulse	Switch, Haptic	Toggling physical/digital Switch triggers short Haptic vibration. Tactile confirmation of registered input. Enhances UX for control panels/interactive devices.
915	Button Press Triggered Specific Sound Effect	Button, SoundPlayer	Pressing designated Button triggers SoundPlayer (specific pre-assigned effect: 'confirm' chime, 'cancel' buzz). Clear auditory feedback for user actions (kiosks, exhibits).
916	Knob Adjustment Controlled Lamp Color Spectrum	Knob, Lamp	Knob rotational position mapped across color spectrum (Hue value). Adjusting knob smoothly changes Lamp color in real-time. Intuitive analog control for mood lighting/color selection.
917	GPS Location Based Spoken Landmark Announcer	GPS, TextToSpeech	GPS tracks location. Entering predefined geofenced area (landmark/POI) triggers TextToSpeech (announce name/facts). Location-aware audio tour guide application.
918	Hand Proximity Activated Servo Door Opener	HandSensor, Servos	HandSensor detects hand presence/proximity. Hand within close range activates Servo (open small door/lever). Demonstrates touchless actuation.
919	Presence and Light Dependent Automated Blinds	PresenceSensor, LightSensor, Servos	If room occupied (PresenceSensor) AND sunlight bright (LightSensor), commands Servos to tilt/close blinds. Automated environmental control for comfort/energy efficiency.
920	Voice Command Controlled Servo Mechanism Action	VoiceRecognition, Servos	Speak command ("Open gate"). VoiceRecognition identifies command, activates appropriate Servo (positional or continuous rotation). Voice control for simple robotic tasks/accessibility.
921	Motion-Triggered Audio Alert Classified Sound	CameraMovement, AudioClassifier, SoundPlayer	CameraMovement detects motion, triggers AudioClassifier listening. If AudioClassifier identifies specific concerning sound (breaking glass) after motion, SoundPlayer loud alarm tone. Smarter security system correlating events.
922	ArUco Marker Specific Sound Effect Player	ArUco, SoundPlayer	Present marker to camera. ArUco identifies, triggers SoundPlayer (sound uniquely associated with marker: animal sound for animal card). Interactive educational games/exhibits.
923	Body Pose Matched Musical Chord Player	BodySensor, NotePlayer	BodySensor tracks pose vs predefined library. Successfully holding target pose (T-pose) triggers NotePlayer (corresponding musical chord). Turns physical movement into musical performance/therapy exercise.
924	Facial Expression Driven Lamp Color Mood	FaceSensor, Lamp	FaceSensor detects expression (happy, neutral). Sets Lamp color accordingly (yellow=happy, blue=neutral). Simple ambient display visually reflecting detected mood.
925	Noise-Activated Text Warning Message Display	NoiseSensor, Text	NoiseSensor monitors level. Noise exceeds threshold for period, system displays warning message (Text: "Environment too loud"). Noise level awareness (libraries, offices).
926	Spoken Number Input for Knob Value Setting	VoiceRecognition, Knob	Speak number ("Set level seventy-five"). VoiceRecognition extracts number. System sets digital Knob value programmatically (updating visual). Hands-free parameter setting.
927	Sound Type Identification with Haptic Feedback	AudioClassifier, Haptic	AudioClassifier identifies sound types (speech, music). Detecting specific category triggers distinct Haptic vibration pattern. Non-visual alert to specific sounds (hearing impaired, attention guidance).
928	Device Acceleration Controlled Lamp Flicker Effect	Acceleration, Lamp	Acceleration magnitude modulates Lamp brightness rapidly (flicker effect intensifies with stronger movement). Simulate flickering torch or visualize motion intensity.
929	Tilt-Based Text Scrolling Interface Navigation	Inclination, Text	Inclination detects forward/backward tilt. Angle controls scrolling speed/direction of text (Text component). Tilt forward=scroll down. Motion-based interface for reading.
930	Orientation-Specific Soundscape Player Selection	Orientation, SoundPlayer	Orientation (upright, sideways, face-up) determines which ambient soundscape SoundPlayer plays (birdsong=face-up, underwater=face-down). Simple context-aware audio experience via positioning.
931	Switch-Controlled Servo Toggle Lock Mechanism	Switch, Servos	Toggling Switch 'on' moves angular Servo to 'locked' position (90 deg); 'off' moves to 'unlocked' (0 deg). Simple electronic lock mechanism demo.
932	Button Press Sequence Dependent Note Melody	Button, NotePlayer	User presses sequence of Buttons (each=note). System records sequence, plays back corresponding melody (NotePlayer). Simple composition interface or memory game.
933	Knob Controlled Text-to-Speech Rate Adjustment	Knob, TextToSpeech	Adjust Knob, system reads value, maps to TextToSpeech speaking rate parameter. Turning knob increases/decreases speech speed. Customize playback speed (accessibility, preference).
934	GPS Proximity Alert via Lamp Flashing Signal	GPS, Lamp	GPS detects device within predefined radius of coordinates (POI, restricted zone). Triggers Lamp to flash specific color (red). Clear visual alert based on geographic proximity.
935	Presence-Triggered Personalized Greeting Voice Output	PresenceSensor, FaceSensor, TextToSpeech	PresenceSensor detects approach. FaceSensor detects face presence (not ID). TextToSpeech delivers generic friendly greeting ("Hello there!"). Welcoming interactive kiosk/entrance.
936	Light Level Adjusted Audio Playback Volume Control	LightSensor, SoundPlayer	LightSensor measures light. System auto-adjusts SoundPlayer volume (lower in dark/quiet, raise in bright). Adaptive audio levels for public installations/background music.
937	Movement Direction Controlled Lamp Color Shift	CameraMovement, Lamp	CameraMovement detects motion direction (left-right, up-down). Maps directions to different colors. Lamp changes color representing detected direction. Interactive visual effect.
938	ArUco Marker Triggered Servo Action Sequence	ArUco, Servos	Detecting specific ArUco marker ID initiates predefined Servo action sequence (Marker A=rotate 90 deg/back; Marker B=continuous rotation 3s). Marker-based control of simple robotic behaviors.
939	Hand Gesture Controlled Text Display Selection	HandSensor, Text	HandSensor recognizes gestures (open palm, fist). Each gesture corresponds to predefined message/screen. Gesture detected updates Text component display. Navigate info using hand signals (kiosks).
940	Body Pose Guided Lamp Color Feedback System	BodySensor, Lamp	BodySensor tracks pose vs target (yoga). Lamp gives real-time feedback via color (green=correct, yellow=minor deviation, red=error). Guides user visually towards correct pattern.
941	Voice Controlled Lamp Brightness Adjustment Command	VoiceRecognition, Lamp	Speak commands ("Lamp brighter," "Dim light"). VoiceRecognition processes, adjusts Lamp brightness accordingly. Hands-free lighting intensity control.
942	Classified Sound Triggered Haptic Alert Pattern	AudioClassifier, Haptic	AudioClassifier identifies sounds (phone ringing, microwave). Triggers unique Haptic vibration pattern per sound type. Distinguish sound events via tactile feedback (hearing impaired).
943	Device Tilt Controlled Musical Note Selection	Inclination, NotePlayer	Tilt angle (Inclination) mapped to musical scale. Tilting device plays different notes (NotePlayer) corresponding to angle. Simple motion-based musical instrument.
944	Orientation Change Triggered Text-to-Speech Message	Orientation, TextToSpeech	Orientation sensor detects significant change (portrait to landscape). TextToSpeech announces new orientation or context message ("Screen rotated"). Auditory feedback on device status.
945	Interactive Button Controlled Servo Positioning Game	Button, Servos, Lamp	Lamp color indicates target position. User presses 'left'/'right' Buttons to move angular Servo incrementally. Goal: reach target (Lamp turns green). Simple skill game.
946	Knob Rotation Speed Controlled Haptic Intensity	Knob, Haptic	System monitors Knob rotation speed. Speed value controls Haptic intensity/frequency (faster rotation = stronger/faster buzz). Direct tactile feedback loop tied to manipulation speed.
947	GPS Location Based Dynamic Text Information	GPS, Text	GPS updates location. System fetches relevant contextual info (street name, POIs, distance to destination), displays dynamically (Text component). Location-aware info for navigation/discovery.
948	Presence-Detected Automatic Text Welcome Message Display	PresenceSensor, Text	PresenceSensor detects entry after absence. System auto displays welcome message/instructions (Text component). Informational kiosks, reception areas upon approach.
949	Ambient Light Controlled Note Player Tempo Adjustment	LightSensor, NotePlayer	LightSensor measures brightness. Level adjusts NotePlayer note sequence tempo (brighter=faster, dimmer=slower). Ambient music subtly adapting to lighting environment.
950	Movement Intensity Controlled Haptic Feedback Strength	CameraMovement, Haptic	CameraMovement detects motion, estimates magnitude/speed. Intensity mapped to Haptic vibration strength (gentle move=soft vibration, rapid=strong pulse). Tactile feedback proportional to detected activity.
951	GPS Location Change Triggered Text-to-Speech Update	GPS, TextToSpeech	As location changes (GPS), TextToSpeech announces new area/street/POI based on map data. Automated audio tour guide or navigation assistant.
952	Presence Detection Logs Entry/Exit Times Textually	PresenceSensor, Text	PresenceSensor detects entry/exit; logs events with timestamps, displays log (Text component). Simple occupancy monitoring, space usage tracking.
953	Ambient Light Controlled Servo Shutter Mechanism	LightSensor, Servos	LightSensor measures light; if exceeds threshold, Servo closes shutter/blind, opens when dims. Automated light control (installations, prototypes, energy efficiency).
954	Movement Intensity Controlled Haptic Feedback Frequency	CameraMovement, Haptic	CameraMovement quantifies motion speed/amount; intensity controls Haptic vibration frequency. Tactile feedback proportional to activity level (sensory substitution, interactive art).
955	ArUco Marker Triggered Specific Note Sequence Playback	ArUco, NotePlayer	Different ArUco markers trigger NotePlayer (unique pre-programmed musical phrases/sequences per marker). Interactive music creation, educational toys, game audio cues.
956	Hand Gesture Controlled Lamp On/Off Toggle Switch	HandSensor, Lamp, Switch	HandSensor recognizes gesture (open palm vs fist); toggles virtual Switch, controlling Lamp (on/off). Touchless basic lighting control via intuitive hand movements.
957	Body Posture Mismatch Triggering Haptic Warning Signal	BodySensor, Haptic, Text	BodySensor compares pose to reference; deviation triggers Haptic warning vibration + Text message suggesting correction. Aids posture training or workplace safety monitoring.
958	Facial Expression Modulated Text-to-Speech Emotional Tone	FaceSensor, TextToSpeech	FaceSensor detects expression (happy, neutral); emotion influences TextToSpeech voice tone/style. More expressive/engaging voice output (interactive characters).
959	Noise Level Controlling Text Display Size Adjustment	NoiseSensor, Text	NoiseSensor measures noise level; as environment gets louder, system increases Text component font size. Enhances readability amidst distractions (public info systems).
960	Voice Command Confirmation via Haptic Feedback Pulse	VoiceRecognition, Haptic	VoiceRecognition processes command successfully, Haptic provides brief vibration confirmation. Ensures command received/understood (noisy environments, non-visual confirmation).
961	Sound Classification Triggered Servo Action Response	AudioClassifier, Servos	AudioClassifier identifies sounds (bark, doorbell); triggers Servos pre-programmed action (close pet door, display sign). Simple automated responses to audio cues (home automation).
962	Acceleration Magnitude Controlled Note Pitch Variation	Acceleration, NotePlayer	Acceleration magnitude (how hard device shaken) controls NotePlayer pitch (stronger move = higher/lower pitch). Simple motion-based musical instrument/sound toy.
963	Inclination Data Used to Adjust Lamp Color Mix	Inclination, Lamp	Tilt angle on X/Y axes (Inclination) controls mix of two primary colors (Lamp: X=Red, Y=Blue). Blend colors interactively by tilting device. Intuitive ambient lighting controller.
964	Orientation Sensor Guiding Servo-Controlled Pointer Display	Orientation, Servos, Text	Orientation determines pointing direction; controls Servos attached to pointer, aligning it. Text displays info about pointed-at item (based on spatial data).
965	GPS Location Triggered Haptic Navigation Pulse Cue	GPS, Haptic	Approaching GPS waypoint/turn triggers distinct Haptic patterns (pulse left/right). Directional cues without visual/audio feedback (navigation aid).
966	Presence Activated Knob for Timed Access Control	PresenceSensor, Knob, Switch	PresenceSensor detects user, enables Knob. User turns Knob to specific position within time limit to activate Switch (unlock). Timed interaction layer for presence activation.
967	Light Sensitive Button Activation Threshold Adjustment	LightSensor, Button, Text	LightSensor measures light; system adjusts virtual Button activation sensitivity threshold (firmer press in bright light). Current threshold displayed (Text). Adaptive button response.
968	Movement Direction Controlled Sound Panning Effect Player	CameraMovement, SoundPlayer	CameraMovement detects motion direction (left/right); data controls SoundPlayer stereo panning. Sound appears to move in response to visual motion (immersive installations).
969	ArUco Marker Sequence Unlocks Text Message Display	ArUco, Text, SoundPlayer	Present specific ArUco marker sequence. Correct sequence recognition (ArUco) displays hidden message (Text) + success chime (SoundPlayer). Simple puzzle/escape room element.
970	Hand Gesture Controlled Note Player Pitch Bend	HandSensor, NotePlayer	While note playing (NotePlayer), hand gestures (HandSensor: move hand up/down) control real-time pitch bend. Expressive musical control similar to pitch wheel via gestures.
971	Body Pose Controls Servo-Actuated Marionette Puppet	BodySensor, Servos	BodySensor tracks user joint positions (elbows, knees); data mapped to control multiple Servos on marionette puppet limbs. Puppet mimics user movements in real-time (entertainment).
972	Facial Expression Changes Lamp Color Mood Lighting	FaceSensor, Lamp	FaceSensor detects dominant expression (happy, sad); system changes Lamp color to reflect detected mood (yellow=happy, blue=sad). Interactive mood lighting responding to emotion.
973	Noise Level Displayed as Text Warning Message	NoiseSensor, Text, Lamp	NoiseSensor monitors levels; if exceeds threshold, Text displays warning ("Noise level high!") + Lamp might flash yellow/red. Visual alert for workplace safety/classroom management.
974	Voice Recognition Command Selects SoundPlayer Playlist	VoiceRecognition, SoundPlayer, Text	Voice commands ("Play relaxing music"). VoiceRecognition selects/plays corresponding tracks (SoundPlayer). Text displays current track name. Voice-controlled music experience.
975	Audio Event Classification Triggers Haptic Confirmation Feedback	AudioClassifier, Haptic	AudioClassifier detects specific brief sounds (clap, snap); triggers immediate Haptic vibration feedback confirming sound registration. Precise sound-triggered interactions/accessibility feedback.
976	Acceleration Data Controls Text Font Size Dynamically	Acceleration, Text	Acceleration magnitude dynamically adjusts Text component font size (more vigorous move = larger size temporarily). Playful text effects or emphasizing info during motion.
977	Device Inclination Controls Virtual Knob Rotation Display	Inclination, Knob, Text	Tilting device (Inclination) controls rotation of virtual Knob graphic; current value shown via Text component. Motion-based input method for adjusting settings visually.
978	Orientation Sensor Data Logs Device Position History	Orientation, Text, GPS	Periodically logs device Orientation (pitch, yaw, roll) + GPS coordinates; history displayed/stored via Text component. Track equipment movement/alignment or analyze motion patterns.
979	GPS Proximity Alert Triggers Text-to-Speech Reminder Message	GPS, TextToSpeech	GPS detects user near specific location (store); TextToSpeech plays relevant reminder ("Don't forget milk"). Location-aware automated reminders.
980	Presence Sensor Enables Servo-Controlled Lid Opening Mechanism	PresenceSensor, Servos, Button	PresenceSensor detects approach; user presses Button to activate Servos opening container lid. Semi-automated interactive opening mechanism requiring confirmation.
981	Light Intensity Controlled Haptic Feedback Pattern Variation	LightSensor, Haptic	LightSensor measures light intensity; determines Haptic vibration pattern/rhythm. Translates visual brightness into tactile sensation (light awareness for visually impaired).
982	Camera Movement Speed Adjusts Note Player Tempo	CameraMovement, NotePlayer	CameraMovement estimates average motion speed; speed value dynamically adjusts NotePlayer music/note tempo. Soundscape speeds up with activity, slows in stillness.
983	ArUco Marker Position Controls Servo Arm Angle	ArUco, Servos, Text	ArUco detects marker position (X-coordinate); position controls angular Servo angle. Adjust robot arm/pointer by physically moving marker. Current angle displayed (Text).
984	Hand Gesture Sequence Controls Text-to-Speech Phrase Selection	HandSensor, TextToSpeech, Text	HandSensor recognizes gesture sequence; valid sequence triggers TextToSpeech (corresponding predefined phrase). Recognized sequence displayed (Text). Complex communication via gestures.
985	Body Balance Measured by Sensor Controls Haptic Feedback	BodySensor, Haptic, Orientation	BodySensor (+ Orientation) assesses balance/stability; deviations trigger proportional Haptic feedback. Real-time tactile cues to maintain balance (therapy, fitness, VR).
986	Facial Expression Selects Note Player Instrument Sound	FaceSensor, NotePlayer, Button	Facial expressions (FaceSensor: smile=piano) select NotePlayer instrument sound. User presses Button to play note with selected instrument. Emotionally expressive sound choice interface.
987	Loud Noise Event Triggers Servo Protective Action	NoiseSensor, Servos, SoundPlayer	NoiseSensor detects sudden loud noise over high threshold; triggers Servos (protective action: close cover) + SoundPlayer warning sound. Automated safety response system.
988	Voice Command Controlled Haptic Pattern Playback Selection	VoiceRecognition, Haptic, Text	Voice commands ("Pulse alert") select/play corresponding Haptic pattern; pattern name displayed (Text). Voice control over tactile feedback modes.
989	Sound Classification Selects Lamp Color Scheme Preset	AudioClassifier, Lamp	AudioClassifier identifies sound type (music, speech); Lamp switches to predefined color scheme associated with type (dynamic=music, calm white=silence). Adaptive ambient lighting.

990	Acceleration Spikes Trigger Note Player Sound Bursts	Acceleration, NotePlayer, Haptic	Sharp acceleration spikes trigger NotePlayer (short sound bursts/percussive hits) + corresponding Haptic pulses. Physical impacts generate synchronized audiovisual/tactile responses.
991	Inclination Controls SoundPlayer Playback Speed Adjustment	Inclination, SoundPlayer	Tilting device forward/backward (Inclination) controls SoundPlayer playback speed (forward=faster, backward=slower). Intuitive motion-based audio scrubbing/rate adjustment.
992	Orientation Data Determines Text-to-Speech Directional Cues Output	Orientation, TextToSpeech, GPS	Using GPS + Orientation (heading), TextToSpeech provides relative navigational cues ("Turn slightly right ahead"). More intuitive guidance than cardinal directions.
993	GPS Zone Entry/Exit Triggers Servo Action Event	GPS, Servos, Text	Entering/exiting GPS geofence triggers Servos specific action (raise flag, dispense item); zone status displayed (Text). Location-based automated physical actions.
994	Presence Detected Light Activation with Knob Dimmer	PresenceSensor, Lamp, Knob	PresenceSensor activates Lamp on entry; user uses Knob to manually adjust brightness level. Combines automated on/off + manual intensity tuning.
995	Light Level Affects ArUco Marker Detection Sensitivity	LightSensor, ArUco, Text	LightSensor measures light; system adjusts ArUco detection parameters for optimal performance. Status info ("Low light compensation active") displayed (Text). Awareness during scanning.
996	Motion Detected Servo Sweep with Sound Cue	CameraMovement, Servos, SoundPlayer	CameraMovement detects motion, triggers Servo sweep (scanning motion) + subtle sweeping sound (SoundPlayer). Interactive element signaling noticed movement.
997	Hand Proximity Controls Note Player Volume Intensity	HandSensor, NotePlayer, Lamp	Hand distance (HandSensor) controls NotePlayer volume (closer=louder); Lamp brightens proportionally. Theremin-like interface controlling sound intensity + visual brightness.
998	Body Movement Speed Controls Lamp Flicker Rate	BodySensor, Lamp, Acceleration	BodySensor + Acceleration estimate activity level/speed; value controls Lamp flicker rate (faster pulsing with vigorous movement). Dynamic visual feedback reflecting exertion/energy.
999	Facial Expression Triggered Text Sentiment Display Update	FaceSensor, Text, SoundPlayer	FaceSensor analyzes expression for sentiment (positive, negative); sentiment displayed (Text: "Mood: Positive") + brief corresponding sound cue (SoundPlayer: chime). Emotional feedback.
1000	Voice Command Sets Timer Displayed with Text Component	VoiceRecognition, Text, Haptic	Voice command ("Set timer 5 minutes"). System displays countdown (Text). Haptic pulse when timer expires. Hands-free timer with visual/tactile alerts.