## Microcontroller Projects

1. **Plant Watering System**: Automated plant care.
2. **Home Automation**: Control appliances via phone.
3. **Smart Door Lock**: Biometric or keypad entry.
4. **Weather Station**: Monitor climate data.
5. **Obstacle Avoidance Robot**: Autonomous navigation.
6. **Smart Irrigation**: Automated watering.
7. **Intruder Alert**: Motion-sensor security.
8. **Digital Thermometer**: Display temperature.
9. **Fingerprint Attendance**: Biometric check-in.
10. **Bluetooth Car**: Smartphone-controlled car.

## IoT Projects

11. **Smart Lighting**: Internet-controlled lights.
12. **Energy Meter**: Monitor power use.
13. **Health Monitoring**: Remote health tracking.
14. **Weather Data**: Cloud-connected station.
15. **Air Quality Monitor**: Internet-linked sensor.
16. **Smart Parking**: Real-time parking updates.
17. **Water Quality Monitor**: Internet-based analysis.
18. **Patient Monitoring**: Real-time health data.
19. **Smart Farming**: Optimize agriculture.
20. **Smart Trash Bin**: Notify when full.

## Sensor-Based Projects

21. **Gas Leak Detector**: Alert system.
22. **Alcohol Detector**: Measure levels.
23. **Heart Rate Monitor**: Pulse measurement.
24. **Fire Detector**: Alert for fire.
25. **Proximity Alarm**: Object detection.
26. **Temp & Humidity Monitor**: Environmental data.
27. **Auto Street Light**: Light sensor control.
28. **Motion Alarm**: Motion detection.
29. **Water Level Indicator**: Monitor tank levels.
30. **Smoke Detector**: Alert system.

## Communication Projects

31. **RFID Access**: Secure entry.
32. **GSM Security**: Mobile alerts.

33. **Wireless Notice Board**: Remote messages.
34. **Bluetooth Logger**: Data transmission.
35. **Wireless Power**: Energy transfer.
36. **ZigBee Automation**: Home control.
37. **LoRa Data**: Long-range communication.
38. **NFC Payments**: Secure transactions.
39. **Voice Control**: Operate devices.
40. **Wi-Fi Robot**: Internet-controlled robot.

## Robotics Projects

41. **Line Follower**: Path-tracing robot.
42. **Maze Solver**: Autonomous navigation.
43. **Bluetooth Robot**: Smartphone control.
44. **Humanoid Robot**: Human-like functions.
45. **Swarm Robots**: Collaborative bots.
46. **Gesture Robot**: Hand gesture control.
47. **Voice Robot**: Operate by voice.
48. **Robot Arm**: Programmable tasks.
49. **Delivery Robot**: Autonomous delivery.
50. **Rescue Robot**: Disaster response.

## Embedded Systems

51. **Digital Clock**: Time display.
52. **Traffic Light**: Simulation control.
53. **Smart Mirror**: Info display.
54. **Voting Machine**: Secure voting.
55. **Toll Collection**: RFID system.
56. **Notice Board**: Electronic updates.
57. **Temp-Controlled Fan**: Auto-adjust fan.
58. **Pet Feeder**: Timed food dispensing.
59. **Blind Stick**: Aid with sensors.
60. **Smart Fridge**: Monitor contents.

## Power Electronics

61. **Solar Charger**: Battery charging.
62. **Inverter**: DC to AC conversion.
63. **MPPT Controller**: Solar optimization.
64. **Wireless Power**: Transfer energy.
65. **DC-DC Converter**: Voltage conversion.
66. **Smart Grid**: Power management.
67. **Energy Harvesting**: Generate from environment.

68. **Power Factor Correction**: Electrical efficiency.
69. **EV Charger**: Vehicle charging.
70. **Smart Power Strip**: Controlled outlets.

## Renewable Energy Projects

71. **Solar Tracker**: Optimize panel angle.
72. **Wind Turbine**: Generate power.
73. **Hydroelectric**: Water-based energy.
74. **Piezo Energy**: From vibrations.
75. **Biogas Generator**: Organic waste energy.
76. **Solar Water Heater**: Heat with solar.
77. **Tidal Converter**: Power from tides.
78. **Geothermal**: Earth's heat energy.
79. **Thermoelectric**: Heat to power.
80. **Algae Biofuel**: Fuel from algae.

## Biomedical Projects

81. **Portable ECG**: Heart monitoring.
82. **Glucose Monitor**: Non-invasive check.
83. **Pulse Oximeter**: Oxygen saturation.
84. **Smart Pill Box**: Med reminder.
85. **Hearing Aid**: Sound amplification.
86. **E-Stethoscope**: Enhanced listening.
87. **Body Temp Monitor**: Continuous check.
88. **Health Tracker**: Wearable monitor.
89. **Prosthetic Hand**: Sensor control.
90. **Fall Detection**: Elderly safety.

## Automation Projects

91. **Greenhouse**: Auto climate control.
92. **Hand Sanitizer**: Touch-free dispensing.
93. **Smart Curtain**: Auto open/close.
94. **Pet Door**: RFID control.
95. **Robot Vacuum**: Auto cleaning.
96. **Fish Tank**: Automated care.
97. **Room Light**: Presence-based control.
98. **Smart Garage**: Remote door control.
99. **Voice Appliances**: Operate by voice.
100. **Car Parking**: Automated system.

## Control Systems

101. **PID Controller**: Stability control.
102. **Temp Control**: Maintain set point.
103. **Motor Speed**: Adjust motor RPM.
104. **Robot Arm**: Precision movement.
105. **Drone Stabilization**: Steady flight.
106. **Inverted Pendulum**: Balance control.
107. **Servo Control**: Positioning system.
108. **Voltage Regulator**: Stable output.
109. **Liquid Level**: Tank monitoring.
110. **Auto Braking**: Car safety.

## Renewable Energy

111. **Solar Pump**: Water pumping.
112. **Wind Energy**: Electrical conversion.
113. **Solar Fan**: Powered by solar.
114. **Energy Monitoring**: Track renewable output.
115. **Solar Vehicle**: Sun-powered transport.
116. **Wind Efficiency**: Optimize design.
117. **Energy Storage**: Store renewable energy.
118. **Off-Grid Solar**: Independent system.
119. **Charging Station**: Solar-powered.
120. **Smart Solar Grid**: Integrate power.

## Security Projects

121. **Home Security**: Comprehensive system.
122. **Face Recognition**: Secure lock.
123. **Biometric Safe**: Fingerprint access.
124. **Surveillance**: Remote monitoring.
125. **RFID Security**: Secure entry.
126. **Voice Security**: Recognize commands.
127. **Motion Camera**: Activates on movement.
128. **Intruder Alert**: Unauthorized detection.
129. **Smart Lock**: Phone-controlled.
130. **Data Storage**: Encrypt files.

## Audio Projects

131. **Bluetooth Speaker**: Wireless sound.
132. **Audio Equalizer**: Adjust sound.
133. **FM Transmitter**: Broadcast signal.
134. **Audio Amp**: Boost audio.
135. **Noise Cancelling**: Reduce background.

136. **Voice Changer**: Modify sounds.
137. **Sound Recorder**: Digital recording.
138. **Sound Meter**: Measure intensity.
139. **Surround Sound**: Multi-channel audio.
140. **Smart Speaker**: Voice-activated.

## Display Projects

141. **LED Matrix**: Programmable lights.
142. **Digital Billboard**: Electronic ads.
143. **Scrolling Text**: LED messages.
144. **E-Paper**: Low power display.
145. **OLED Display**: High-quality screen.
146. **Touchscreen**: Interactive control.
147. **Clock Display**: Digital time.
148. **Smart Mirror**: Info display.
149. **VR Display**: Virtual reality.
150. **Interactive Board**: Classroom tool.

## Analog Projects

151. **Synthesizer**: Music creation.
152. **Function Generator**: Waveform creation.
153. **Signal Processor**: Audio processing.
154. **Analog Clock**: Mechanical time.
155. **Oscilloscope**: Visualize signals.
156. **Radio Receiver**: Analog radio.
157. **Multimeter**: Measure parameters.
158. **Thermocouple Amp**: Boost signals.
159. **Analog Filter**: Signal filtering.
160. **Voltage Regulator**: Stable output.

## Wireless Projects

161. **Wi-Fi Booster**: Signal range.
162. **Data Logger**: Remote data.
163. **Power Transmission**: Wireless energy.
164. **Sensor Network**: Wireless sensors.
165. **Audio Transmitter**: Send sound.
166. **Wireless Charger**: No wires.
167. **Bluetooth Beacon**: Proximity sensing.
168. **Home Automation**: Wireless control.
169. **Security Camera**: Wireless monitoring.
170. **Weather Station**: Remote data.

## Advanced Projects

171. **AI Robot**: Smart functions.
172. **Traffic Management**: AI control.
173. **Autonomous Drone**: Self-navigation.
174. **IoT & ML**: Data analysis.
175. **Blockchain Voting**: Secure elections.
176. **AR Display**: Augmented reality.
177. **Image Recognition**: AI detection.
178. **Quantum Crypto**: Secure communication.
179. **Neural Network**: Learning system.
180. **Brain Interface**: Mind control.

## Miscellaneous Projects

181. **Electronic Dice**: Random numbers.
182. **Chess Board**: Electronic game.
183. **Digital Piano**: Electronic music.
184. **Pet Toy**: Interactive play.
185. **Solar Gadget**: Sun-powered device.
186. **Electronic Diary**: Digital notes.
187. **Voice Light**: Control by voice.
188. **Smart Wallet**: Track via phone.
189. **Portable Charger**: Mobile power.
190. **Smart Thermostat**: Climate control.

## Fun Projects

191. **LED Floor**: Interactive dance.
192. **Digital Jukebox**: Music player.
193. **Laser Harp**: Music with light.
194. **DIY Drone**: Build and fly.
195. **Electronic Drums**: Play music.
196. **Robot Dog**: Robotic pet.
197. **DIY VR**: Custom headset.
198. **Light Show**: Program lights.
199. **Puzzle Game**: Electronic challenge.
200. **Smartwatch**: Custom wearable.