



With advances in technology, there is a constant demand for improvement in standard of living, security and energy efficiency. Every building be it residential, commercial or industrial runs on some or the other form of energy, thus there is a need to reduce and optimize this energy consumption. Efficient energy management not only reduces consumption but also reduces energy costs.

Sciencetech 6205SB IoT Enabled Smart Building training setup is specially designed to help understand the concept of smart buildings and how various sensors can be deployed and their data can be used to generate events and trigger alarms. Sciencetech smart building comes with various sensors. The data from these sensors can be used to generate various events like switching on and off lights, triggering an alarm, providing access to a user using RFID tags and readers. This product helps explore various aspects of smart building intended to optimize energy usage and security.

Applications



Hospitals



Buildings



Offices



Banks



Factories



Universities

Features

- Platform to learn, explore, and develop IoT skills.
- Three floors with six blocks table top building structure.
- Each block of building with LED lights.
- Arduino software compatible hardware.
- LPG gas, smoke, fire, PIR, temperature, humidity, and CO₂ sensors.
- RFID module for access control application.
- Touch switch panel with 4 power sockets and bulb intensity control output.
- Wi-Fi camera interface.
- Battery smart sensor gateway for sensor connectivity.
- USB and zigbee connectivity for personal computer (PC) interface.
- Wi-Fi connectivity for cloud interface.
- Sensor gateway with color LCD display.
- Buzzer and input/output switch for testing.
- Wi-Fi connectivity and android app for field testing.
- Software to view sensor's real time graph analysis on PC and mobile.
- 10 din sockets for sensors and actuators interface.
- On board charging and protection circuit for battery.
- Signal test points and switch fault.
- Inbuilt voltmeter and ammeter.
- Compact tabletop ergonomic design.
- Ready experimental details.
- User friendly, self explanatory system.

Scope of Learning

- Understanding of arduino IDE software.

Interfacing of :

- Wi-Fi and zigbee module.
- ESP8266 for online cloud interfacing.
- LED blink program.
- ACD and UART programs.

Implementation of:

- Color LCD.
- RFID control application.
- Python program to collect data and upload on cloud.

Testing and understanding of:

- Motion sensor.
- Temperature and humidity sensor.
- CO₂ sensor.
- LPG, fire and smoke sensor.

Design and develop:

- Smart building automation programs.
- Light control applications.
- Program to configure events and alarms.

Software window



```

140 switch (stage) {
141   case 0: // your hand is on the sensor
142     // = analogRead(A0); // 0, 1023, 0, 5000}
143     digitalWrite(LED1, HIGH);
144     // = digitalRead(D1);
145     // = analogRead(A0); // 0, 1023, 0, 5000}
146     digitalWrite(LED2, HIGH);
147     // = digitalRead(D2);
148     // = analogRead(A1); // 0, 1023, 0, 5000}
149     digitalWrite(LED3, HIGH);
150     // = digitalRead(D3);
151     // = analogRead(A2); // 0, 1023, 0, 5000}
152     digitalWrite(LED4, HIGH);
153     // = digitalRead(D4);
154     // = analogRead(A3); // 0, 1023, 0, 5000}
155     digitalWrite(LED5, HIGH);
156     // = digitalRead(D5);
157     // = analogRead(A4); // 0, 1023, 0, 5000}
158     digitalWrite(LED6, HIGH);
159     // = digitalRead(D6);
160     // = analogRead(A5); // 0, 1023, 0, 5000}
161     digitalWrite(LED7, HIGH);
162     // = digitalRead(D7);
163     // = analogRead(A6); // 0, 1023, 0, 5000}
164     digitalWrite(LED8, HIGH);
165     // = digitalRead(D8);
166     // = analogRead(A7); // 0, 1023, 0, 5000}
167     digitalWrite(LED9, HIGH);
168     // = digitalRead(D9);
169     // = analogRead(A8); // 0, 1023, 0, 5000}
170     digitalWrite(LED10, HIGH);
171     // = digitalRead(D10);
172     // = analogRead(A9); // 0, 1023, 0, 5000}
173     digitalWrite(LED11, HIGH);
174     // = digitalRead(D11);
175     // = analogRead(A10); // 0, 1023, 0, 5000}
176     digitalWrite(LED12, HIGH);
177     // = digitalRead(D12);
178     // = analogRead(A11); // 0, 1023, 0, 5000}
179     digitalWrite(LED13, HIGH);
180     // = digitalRead(D13);
181     // = analogRead(A12); // 0, 1023, 0, 5000}
182     digitalWrite(LED14, HIGH);
183     // = digitalRead(D14);
184     // = analogRead(A13); // 0, 1023, 0, 5000}
185     digitalWrite(LED15, HIGH);
186     // = digitalRead(D15);
187     // = analogRead(A14); // 0, 1023, 0, 5000}
188     digitalWrite(LED16, HIGH);
189     // = digitalRead(D16);
190     // = analogRead(A15); // 0, 1023, 0, 5000}
191     digitalWrite(LED17, HIGH);
192     // = digitalRead(D17);
193     // = analogRead(A16); // 0, 1023, 0, 5000}
194     digitalWrite(LED18, HIGH);
195     // = digitalRead(D18);
196     // = analogRead(A17); // 0, 1023, 0, 5000}
197     digitalWrite(LED19, HIGH);
198     // = digitalRead(D19);
199     // = analogRead(A18); // 0, 1023, 0, 5000}
200     digitalWrite(LED20, HIGH);
201     // = digitalRead(D20);
202     // = analogRead(A19); // 0, 1023, 0, 5000}
203     digitalWrite(LED21, HIGH);
204     // = digitalRead(D21);
205     // = analogRead(A20); // 0, 1023, 0, 5000}
206     digitalWrite(LED22, HIGH);
207     // = digitalRead(D22);
208     // = analogRead(A21); // 0, 1023, 0, 5000}
209     digitalWrite(LED23, HIGH);
210     // = digitalRead(D23);
211     // = analogRead(A22); // 0, 1023, 0, 5000}
212     digitalWrite(LED24, HIGH);
213     // = digitalRead(D24);
214     // = analogRead(A23); // 0, 1023, 0, 5000}
215     digitalWrite(LED25, HIGH);
216     // = digitalRead(D25);
217     // = analogRead(A24); // 0, 1023, 0, 5000}
218     digitalWrite(LED26, HIGH);
219     // = digitalRead(D26);
220     // = analogRead(A25); // 0, 1023, 0, 5000}
221     digitalWrite(LED27, HIGH);
222     // = digitalRead(D27);
223     // = analogRead(A26); // 0, 1023, 0, 5000}
224     digitalWrite(LED28, HIGH);
225     // = digitalRead(D28);
226     // = analogRead(A27); // 0, 1023, 0, 5000}
227     digitalWrite(LED29, HIGH);
228     // = digitalRead(D29);
229     // = analogRead(A28); // 0, 1023, 0, 5000}
230     digitalWrite(LED30, HIGH);
231     // = digitalRead(D30);
232     // = analogRead(A29); // 0, 1023, 0, 5000}
233     digitalWrite(LED31, HIGH);
234     // = digitalRead(D31);
235     // = analogRead(A30); // 0, 1023, 0, 5000}
236     digitalWrite(LED32, HIGH);
237     // = digitalRead(D32);
238     // = analogRead(A31); // 0, 1023, 0, 5000}
239     digitalWrite(LED33, HIGH);
240     // = digitalRead(D33);
241     // = analogRead(A32); // 0, 1023, 0, 5000}
242     digitalWrite(LED34, HIGH);
243     // = digitalRead(D34);
244     // = analogRead(A33); // 0, 1023, 0, 5000}
245     digitalWrite(LED35, HIGH);
246     // = digitalRead(D35);
247     // = analogRead(A34); // 0, 1023, 0, 5000}
248     digitalWrite(LED36, HIGH);
249     // = digitalRead(D36);
250     // = analogRead(A35); // 0, 1023, 0, 5000}
251     digitalWrite(LED37, HIGH);
252     // = digitalRead(D37);
253     // = analogRead(A36); // 0, 1023, 0, 5000}
254     digitalWrite(LED38, HIGH);
255     // = digitalRead(D38);
256     // = analogRead(A37); // 0, 1023, 0, 5000}
257     digitalWrite(LED39, HIGH);
258     // = digitalRead(D39);
259     // = analogRead(A38); // 0, 1023, 0, 5000}
260     digitalWrite(LED40, HIGH);
261     // = digitalRead(D40);
262     // = analogRead(A39); // 0, 1023, 0, 5000}
263     digitalWrite(LED41, HIGH);
264     // = digitalRead(D41);
265     // = analogRead(A40); // 0, 1023, 0, 5000}
266     digitalWrite(LED42, HIGH);
267     // = digitalRead(D42);
268     // = analogRead(A41); // 0, 1023, 0, 5000}
269     digitalWrite(LED43, HIGH);
270     // = digitalRead(D43);
271     // = analogRead(A42); // 0, 1023, 0, 5000}
272     digitalWrite(LED44, HIGH);
273     // = digitalRead(D44);
274     // = analogRead(A43); // 0, 1023, 0, 5000}
275     digitalWrite(LED45, HIGH);
276     // = digitalRead(D45);
277     // = analogRead(A44); // 0, 1023, 0, 5000}
278     digitalWrite(LED46, HIGH);
279     // = digitalRead(D46);
280     // = analogRead(A45); // 0, 1023, 0, 5000}
281     digitalWrite(LED47, HIGH);
282     // = digitalRead(D47);
283     // = analogRead(A46); // 0, 1023, 0, 5000}
284     digitalWrite(LED48, HIGH);
285     // = digitalRead(D48);
286     // = analogRead(A47); // 0, 1023, 0, 5000}
287     digitalWrite(LED49, HIGH);
288     // = digitalRead(D49);
289     // = analogRead(A48); // 0, 1023, 0, 5000}
290     digitalWrite(LED50, HIGH);
291     // = digitalRead(D50);
292     // = analogRead(A49); // 0, 1023, 0, 5000}
293     digitalWrite(LED51, HIGH);
294     // = digitalRead(D51);
295     // = analogRead(A50); // 0, 1023, 0, 5000}
296     digitalWrite(LED52, HIGH);
297     // = digitalRead(D52);
298     // = analogRead(A51); // 0, 1023, 0, 5000}
299     digitalWrite(LED53, HIGH);
300     // = digitalRead(D53);
301     // = analogRead(A52); // 0, 1023, 0, 5000}
302     digitalWrite(LED54, HIGH);
303     // = digitalRead(D54);
304     // = analogRead(A53); // 0, 1023, 0, 5000}
305     digitalWrite(LED55, HIGH);
306     // = digitalRead(D55);
307     // = analogRead(A54); // 0, 1023, 0, 5000}
308     digitalWrite(LED56, HIGH);
309     // = digitalRead(D56);
310     // = analogRead(A55); // 0, 1023, 0, 5000}
311     digitalWrite(LED57, HIGH);
312     // = digitalRead(D57);
313     // = analogRead(A56); // 0, 1023, 0, 5000}
314     digitalWrite(LED58, HIGH);
315     // = digitalRead(D58);
316     // = analogRead(A57); // 0, 1023, 0, 5000}
317     digitalWrite(LED59, HIGH);
318     // = digitalRead(D59);
319     // = analogRead(A58); // 0, 1023, 0, 5000}
320     digitalWrite(LED60, HIGH);
321     // = digitalRead(D60);
322     // = analogRead(A59); // 0, 1023, 0, 5000}
323     digitalWrite(LED61, HIGH);
324     // = digitalRead(D61);
325     // = analogRead(A60); // 0, 1023, 0, 5000}
326     digitalWrite(LED62, HIGH);
327     // = digitalRead(D62);
328     // = analogRead(A61); // 0, 1023, 0, 5000}
329     digitalWrite(LED63, HIGH);
330     // = digitalRead(D63);
331     // = analogRead(A62); // 0, 1023, 0, 5000}
332     digitalWrite(LED64, HIGH);
333     // = digitalRead(D64);
334     // = analogRead(A63); // 0, 1023, 0, 5000}
335     digitalWrite(LED65, HIGH);
336     // = digitalRead(D65);
337     // = analogRead(A64); // 0, 1023, 0, 5000}
338     digitalWrite(LED66, HIGH);
339     // = digitalRead(D66);
340     // = analogRead(A65); // 0, 1023, 0, 5000}
341     digitalWrite(LED67, HIGH);
342     // = digitalRead(D67);
343     // = analogRead(A66); // 0, 1023, 0, 5000}
344     digitalWrite(LED68, HIGH);
345     // = digitalRead(D68);
346     // = analogRead(A67); // 0, 1023, 0, 5000}
347     digitalWrite(LED69, HIGH);
348     // = digitalRead(D69);
349     // = analogRead(A68); // 0, 1023, 0, 5000}
350     digitalWrite(LED70, HIGH);
351     // = digitalRead(D70);
352     // = analogRead(A69); // 0, 1023, 0, 5000}
353     digitalWrite(LED71, HIGH);
354     // = digitalRead(D71);
355     // = analogRead(A70); // 0, 1023, 0, 5000}
356     digitalWrite(LED72, HIGH);
357     // = digitalRead(D72);
358     // = analogRead(A71); // 0, 1023, 0, 5000}
359     digitalWrite(LED73, HIGH);
360     // = digitalRead(D73);
361     // = analogRead(A72); // 0, 1023, 0, 5000}
362     digitalWrite(LED74, HIGH);
363     // = digitalRead(D74);
364     // = analogRead(A73); // 0, 1023, 0, 5000}
365     digitalWrite(LED75, HIGH);
366     // = digitalRead(D75);
367     // = analogRead(A74); // 0, 1023, 0, 5000}
368     digitalWrite(LED76, HIGH);
369     // = digitalRead(D76);
370     // = analogRead(A75); // 0, 1023, 0, 5000}
371     digitalWrite(LED77, HIGH);
372     // = digitalRead(D77);
373     // = analogRead(A76); // 0, 1023, 0, 5000}
374     digitalWrite(LED78, HIGH);
375     // = digitalRead(D78);
376     // = analogRead(A77); // 0, 1023, 0, 5000}
377     digitalWrite(LED79, HIGH);
378     // = digitalRead(D79);
379     // = analogRead(A78); // 0, 1023, 0, 5000}
380     digitalWrite(LED80, HIGH);
381     // = digitalRead(D80);
382     // = analogRead(A79); // 0, 1023, 0, 5000}
383     digitalWrite(LED81, HIGH);
384     // = digitalRead(D81);
385     // = analogRead(A80); // 0, 1023, 0, 5000}
386     digitalWrite(LED82, HIGH);
387     // = digitalRead(D82);
388     // = analogRead(A81); // 0, 1023, 0, 5000}
389     digitalWrite(LED83, HIGH);
390     // = digitalRead(D83);
391     // = analogRead(A82); // 0, 1023, 0, 5000}
392     digitalWrite(LED84, HIGH);
393     // = digitalRead(D84);
394     // = analogRead(A83); // 0, 1023, 0, 5000}
395     digitalWrite(LED85, HIGH);
396     // = digitalRead(D85);
397     // = analogRead(A84); // 0, 1023, 0, 5000}
398     digitalWrite(LED86, HIGH);
399     // = digitalRead(D86);
400     // = analogRead(A85); // 0, 1023, 0, 5000}
401     digitalWrite(LED87, HIGH);
402     // = digitalRead(D87);
403     // = analogRead(A86); // 0, 1023, 0, 5000}
404     digitalWrite(LED88, HIGH);
405     // = digitalRead(D88);
406     // = analogRead(A87); // 0, 1023, 0, 5000}
407     digitalWrite(LED89, HIGH);
408     // = digitalRead(D89);
409     // = analogRead(A88); // 0, 1023, 0, 5000}
410     digitalWrite(LED90, HIGH);
411     // = digitalRead(D90);
412     // = analogRead(A89); // 0, 1023, 0, 5000}
413     digitalWrite(LED91, HIGH);
414     // = digitalRead(D91);
415     // = analogRead(A90); // 0, 1023, 0, 5000}
416     digitalWrite(LED92, HIGH);
417     // = digitalRead(D92);
418     // = analogRead(A91); // 0, 1023, 0, 5000}
419     digitalWrite(LED93, HIGH);
420     // = digitalRead(D93);
421     // = analogRead(A92); // 0, 1023, 0, 5000}
422     digitalWrite(LED94, HIGH);
423     // = digitalRead(D94);
424     // = analogRead(A93); // 0, 1023, 0, 5000}
425     digitalWrite(LED95, HIGH);
426     // = digitalRead(D95);
427     // = analogRead(A94); // 0, 1023, 0, 5000}
428     digitalWrite(LED96, HIGH);
429     // = digitalRead(D96);
430     // = analogRead(A95); // 0, 1023, 0, 5000}
431     digitalWrite(LED97, HIGH);
432     // = digitalRead(D97);
433     // = analogRead(A96); // 0, 1023, 0, 5000}
434     digitalWrite(LED98, HIGH);
435     // = digitalRead(D98);
436     // = analogRead(A97); // 0, 1023, 0, 5000}
437     digitalWrite(LED99, HIGH);
438     // = digitalRead(D99);
439     // = analogRead(A98); // 0, 1023, 0, 5000}
440     digitalWrite(LED100, HIGH);
441     // = digitalRead(D100);
442     // = analogRead(A99); // 0, 1023, 0, 5000}
443     digitalWrite(LED101, HIGH);
444     // = digitalRead(D101);
445     // = analogRead(A100); // 0, 1023, 0, 5000}
446     digitalWrite(LED102, HIGH);
447     // = digitalRead(D102);
448     // = analogRead(A101); // 0, 1023, 0, 5000}
449     digitalWrite(LED103, HIGH);
450     // = digitalRead(D103);
451     // = analogRead(A102); // 0, 1023, 0, 5000}
452     digitalWrite(LED104, HIGH);
453     // = digitalRead(D104);
454     // = analogRead(A103); // 0, 1023, 0, 5000}
455     digitalWrite(LED105, HIGH);
456     // = digitalRead(D105);
457     // = analogRead(A104); // 0, 1023, 0, 5000}
458     digitalWrite(LED106, HIGH);
459     // = digitalRead(D106);
460     // = analogRead(A105); // 0, 1023, 0, 5000}
461     digitalWrite(LED107, HIGH);
462     // = digitalRead(D107);
463     // = analogRead(A106); // 0, 1023, 0, 5000}
464     digitalWrite(LED108, HIGH);
465     // = digitalRead(D108);
466     // = analogRead(A107); // 0, 1023, 0, 5000}
467     digitalWrite(LED109, HIGH);
468     // = digitalRead(D109);
469     // = analogRead(A108); // 0, 1023, 0, 5000}
470     digitalWrite(LED110, HIGH);
471     // = digitalRead(D110);
472     // = analogRead(A109); // 0, 1023, 0, 5000}
473     digitalWrite(LED111, HIGH);
474     // = digitalRead(D111);
475     // = analogRead(A110); // 0, 1023, 0, 5000}
476     digitalWrite(LED112, HIGH);
477     // = digitalRead(D112);
478     // = analogRead(A111); // 0, 1023, 0, 5000}
479     digitalWrite(LED113, HIGH);
480     // = digitalRead(D113);
481     // = analogRead(A112); // 0, 1023, 0, 5000}
482     digitalWrite(LED114, HIGH);
483     // = digitalRead(D114);
484     // = analogRead(A113); // 0, 1023, 0, 5000}
485     digitalWrite(LED115, HIGH);
486     // = digitalRead(D115);
487     // = analogRead(A114); // 0, 1023, 0, 5000}
488     digitalWrite(LED116, HIGH);
489     // = digitalRead(D116);
490     // = analogRead(A115); // 0, 1023, 0, 5000}
491     digitalWrite(LED117, HIGH);
492     // = digitalRead(D117);
493     // = analogRead(A116); // 0, 1023, 0, 5000}
494     digitalWrite(LED118, HIGH);
495     // = digitalRead(D118);
496     // = analogRead(A117); // 0, 1023, 0, 5000}
497     digitalWrite(LED119, HIGH);
498     // = digitalRead(D119);
499     // = analogRead(A118); // 0, 1023, 0, 5000}
500     digitalWrite(LED120, HIGH);
501     // = digitalRead(D120);
502     // = analogRead(A119); // 0, 1023, 0, 5000}
503     digitalWrite(LED121, HIGH);
504     // = digitalRead(D121);
505     // = analogRead(A120); // 0, 1023, 0, 5000}
506     digitalWrite(LED122, HIGH);
507     // = digitalRead(D122);
508     // = analogRead(A121); // 0, 1023, 0, 5000}
509     digitalWrite(LED123, HIGH);
510     // = digitalRead(D123);
511     // = analogRead(A122); // 0, 1023, 0, 5000}
512     digitalWrite(LED124, HIGH);
513     // = digitalRead(D124);
514     // = analogRead(A123); // 0, 1023, 0, 5000}
515     digitalWrite(LED125, HIGH);
516     // = digitalRead(D125);
517     // = analogRead(A124); // 0, 1023, 0, 5000}
518     digitalWrite(LED126, HIGH);
519     // = digitalRead(D126);
520     // = analogRead(A125); // 0, 1023, 0, 5000}
521     digitalWrite(LED127, HIGH);
522     // = digitalRead(D127);
523     // = analogRead(A126); // 0, 1023, 0, 5000}
524     digitalWrite(LED128, HIGH);
525     // = digitalRead(D128);
526     // = analogRead(A127); // 0, 1023, 0, 5000}
527     digitalWrite(LED129, HIGH);
528     // = digitalRead(D129);
529     // = analogRead(A128); // 0, 1023, 0, 5000}
530     digitalWrite(LED130, HIGH);
531     // = digitalRead(D130);
532     // = analogRead(A129); // 0, 1023, 0, 5000}
533     digitalWrite(LED131, HIGH);
534     // = digitalRead(D131);
535     // = analogRead(A130); // 0, 1023, 0, 5000}
536     digitalWrite(LED132, HIGH);
537     // = digitalRead(D132);
538     // = analogRead(A131); // 0, 1023, 0, 5000}
539     digitalWrite(LED133, HIGH);
540     // = digitalRead(D133);
541     // = analogRead(A132); // 0, 1023, 0, 5000}
542     digitalWrite(LED134, HIGH);
543     // = digitalRead(D134);
544     // = analogRead(A133); // 0, 1023, 0, 5000}
545     digitalWrite(LED135, HIGH);
546     // = digitalRead(D135);
547     // = analogRead(A134); // 0, 1023, 0, 5000}
548     digitalWrite(LED136, HIGH);
549     // = digitalRead(D136);
550     // = analogRead(A135); // 0, 1023, 0, 5000}
551     digitalWrite(LED137, HIGH);
552     // = digitalRead(D137);
553     // = analogRead(A136); // 0, 1023, 0, 5000}
554     digitalWrite(LED138, HIGH);
555     // = digitalRead(D138);
556     // = analogRead(A137); // 0, 1023, 0, 5000}
557     digitalWrite(LED139, HIGH);
558     // = digitalRead(D139);
559     // = analogRead(A138); // 0, 1023, 0, 5000}
560     digitalWrite(LED140, HIGH);
561     // = digitalRead(D140);
562     // = analogRead(A139); // 0, 1023, 0, 5000}
563     digitalWrite(LED141, HIGH);
564     // = digitalRead(D141);
565     // = analogRead(A140); // 0, 1023, 0, 5000}
566     digitalWrite(LED142, HIGH);
567     // = digitalRead(D142);
568     // = analogRead(A141); // 0, 1023, 0, 5000}
569     digitalWrite(LED143, HIGH);
570     // = digitalRead(D143);
571     // = analogRead(A142); // 0, 1023, 0, 5000}
572     digitalWrite(LED144, HIGH);
573     // = digitalRead(D144);
574     // = analogRead(A143); // 0, 1023, 0, 5000}
575     digitalWrite(LED145, HIGH);
576     // = digitalRead(D145);
577     // = analogRead(A144); // 0, 1023, 0, 5000}
578     digitalWrite(LED146, HIGH);
579     // = digitalRead(D146);
580     // = analogRead(A145); // 0, 1023, 0, 5000}
581     digitalWrite(LED147, HIGH);
582     // = digitalRead(D147);
583     // = analogRead(A146); // 0, 1023, 0, 5000}
584     digitalWrite(LED148, HIGH);
585     // = digitalRead(D148);
586     // = analogRead(A147); // 0, 1023, 0, 5000}
587     digitalWrite(LED149, HIGH);
588     // = digitalRead(D149);
589     // = analogRead(A148); // 0, 1023, 0, 5000}
590     digitalWrite(LED150, HIGH);
591     // = digitalRead(D150);
592     // = analogRead(A149); // 0, 1023, 0, 5000}
593     digitalWrite(LED151, HIGH);
594     // = digitalRead(D151);
595     // = analogRead(A150); // 0, 1023, 0, 5000}
596     digitalWrite(LED152, HIGH);
597     // = digitalRead(D152);
598     // = analogRead(A151); // 0, 1023, 0, 5000}
599     digitalWrite(LED153, HIGH);
600     // = digitalRead(D153);
601     // = analogRead(A152); // 0, 1023, 0, 5000}
602     digitalWrite(LED154, HIGH);
603     // = digitalRead(D154);
604     // = analogRead(A153); // 0, 1023, 0, 5000}
605     digitalWrite(LED155, HIGH);
606     // = digitalRead(D155);
607     // = analogRead(A154); // 0, 1023, 0, 5000}
608     digitalWrite(LED156, HIGH);
609     // = digitalRead(D156);
610     // = analogRead(A155); // 0, 1023, 0, 5000}
611     digitalWrite(LED157, HIGH);
612     // = digitalRead(D157);
613     // = analogRead(A156); // 0, 1023, 0, 5000}
614     digitalWrite(LED158, HIGH);
615     // = digitalRead(D158);
616     // = analogRead(A157); // 0, 1023, 0, 5000}
617     digitalWrite(LED159, HIGH);
618     // = digitalRead(D159);
619     // = analogRead(A158); // 0, 1023, 0, 5000}
620     digitalWrite(LED160, HIGH);
621     // = digitalRead(D160);
622     // = analogRead(A159); // 0, 1023, 0, 5000}
623     digitalWrite(LED161, HIGH);
624     // = digitalRead(D161);
625     // = analogRead(A160); // 0, 1023, 0, 5000}
626     digitalWrite(LED162, HIGH);
627     // = digitalRead(D162);
628     // = analogRead(A161); // 0, 1023, 0, 5000}
629     digitalWrite(LED163, HIGH);
630     // = digitalRead(D163);
631     // = analogRead(A162); // 0, 1023, 0, 5000}
632     digitalWrite(LED164, HIGH);
633     // = digitalRead(D164);
634     // = analogRead(A163); // 0, 1023, 0, 5000}
635     digitalWrite(LED165, HIGH);
636     // = digitalRead(D165);
637     // = analogRead(A164); // 0, 1023, 0, 5000}
638     digitalWrite(LED166, HIGH);
639     // = digitalRead(D166);
640     // = analogRead(A165); // 0, 1023, 0, 5000}
641     digitalWrite(LED167, HIGH);
642     // = digitalRead(D167);
643     // = analogRead(A166); // 0, 1023, 0, 5000}
644     digitalWrite(LED168, HIGH);
645     // = digitalRead(D168);
646     // = analogRead(A167); // 0, 1023, 0, 5000}
647     digitalWrite(LED169, HIGH);
648     // = digitalRead(D169);
649     // = analogRead(A168); // 0, 1023, 0, 5000}
650     digitalWrite(LED170, HIGH);
651     // = digitalRead(D170);
652     // = analogRead(A169); // 0, 1023, 0, 5000}
653     digitalWrite(LED171, HIGH);
654     // = digitalRead(D171);
655     // = analogRead(A170); // 0, 1023, 0, 5000}
656     digitalWrite(LED172, HIGH);
657     // = digitalRead(D172);
658     // = analogRead(A171); // 0, 1023, 0, 5000}
659     digitalWrite(LED173, HIGH);
660     // = digitalRead(D173);
661     // = analogRead(A172); // 0, 1023, 0, 5000}
662     digitalWrite(LED174, HIGH);
663     // = digitalRead(D174);
664     // = analogRead(A173); // 0, 1023, 0, 5000}
665     digitalWrite(LED175, HIGH);
666     // = digitalRead(D175);
667     // = analogRead(A174); // 0, 1023, 0, 5000}
668     digitalWrite(LED176, HIGH);
669     // = digitalRead(D176);
670     // = analogRead(A175); // 0, 1023, 0, 5000}
671     digitalWrite(LED177, HIGH);
672     // = digitalRead(D177);
673     // = analogRead(A176); // 0, 1023, 0, 5000}
674     digitalWrite(LED178, HIGH);
675     // = digitalRead(D178);
676     // = analogRead(A177); // 0, 1023, 0, 5000}
677     digitalWrite(LED179, HIGH);
678     // = digitalRead(D179);
679     // = analogRead(A178); // 0, 1023, 0, 5000}
680     digitalWrite(LED180, HIGH);
681     // = digitalRead(D180);
682     // = analogRead(A179); // 0, 1023, 0, 5000}
683     digitalWrite(LED181, HIGH);
684     // = digitalRead(D181);
685     // = analogRead(A180); // 0, 1023, 0, 5000}
686     digitalWrite(LED182, HIGH);
687     // = digitalRead(D182);
688     // = analogRead(A181); // 0, 1023, 0, 5000}
689     digitalWrite(LED183, HIGH);
690     // = digitalRead(D183);
691     // = analogRead(A182); // 0, 1023, 0, 5000}
692     digitalWrite(LED184, HIGH);
693     // = digitalRead(D184);
694     // = analogRead(A183); // 0, 1023, 0, 5000}
695     digitalWrite(LED185, HIGH);
696     // = digitalRead(D185);
697     // = analogRead(A184); // 0, 1023, 0, 5000}
698     digitalWrite(LED186, HIGH);
699     // = digitalRead(D186);
700     // = analogRead(A185); // 0, 1023, 0, 5000}
701     digitalWrite(LED187, HIGH);
702     // = digitalRead(D187);
703     // = analogRead(A186); // 0, 1023, 0, 5000}
704     digitalWrite(LED188, HIGH);
705     // = digitalRead(D188);
706     // = analogRead(A187); // 0, 1023, 0, 5000}
707     digitalWrite(LED189, HIGH);
708     // = digitalRead(D189);
709     // = analogRead(A188); // 0, 1023, 0, 5000}
710     digitalWrite(LED190, HIGH);
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```

Technical Specifications

Microcontroller	: ATmega2560
Sensors and actuator connector	: 10 nos.
Digital I/O pins	: 34 nos.
Analog input pins	: 16 nos.
UART	: 2 nos.
I2C	: 1 no.
Switch faults	: 30 nos.
Test points	: 30 nos.
Power supplies	: 5V and 3.3V
Variable potentiometer	: 1 no (10k)
Switches	: 3 nos.
Digital voltmeter and ammeter	: 0 - 25V/10A
Buzzer and LED	: 1 no. each
Color LCD	: 1.77 inch
Battery	: 3.7V/4400mAh
USB	: 2.0
Clock speed	: 16 MHz
Wi-Fi module	: 1 no. (2.4GHz)
Zigbee transceiver	: 2 nos. (2.4GHz/63mW)
Flash memory	: 256 kb of which 8 kb used by boot loader
SRAM	: 8 kb
EEPROM	: 4 kb
Node operating voltage	: 5V DC
Camera	: Wi-Fi IP camera
Touch panel	: 4 switches, 1 regulator
RFID module with 5 cards	: 125 KHz
LPG gas sensor	: MQ06
Smoke sensor	: MQ135
Fire sensor	: TTL
PIR sensor	: TTL

Temperature sensor	: 0-100 degree celsius
Humidity sensor	: 0-100 %RH
CO ₂ sensor	: 0-2000ppm
Interconnection for modules	: 2 mm patch cords and FRC cables
Power Supply	: 110V - 260V AC, 50/60Hz
Weight	: 3.5kg (approximately)
Operating conditions	: 0-40°C, 85% RH

Package contains

(in nos.)

- Sciencetech smart sensor gateway 1
- Sciencetech 6205SB smart building structure 1
- Wi-Fi IP camera 1
- Power adapter for camera 1
- Ethernet cable 1
- DIN connector cable 8
- USB xbee receiver 1
- RFID cards 5
- Mains power cord 1
- USB cable 1
- Patch cord 5

Smart sensor gateway

