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1: # import libraries
2: import socket
3: import Adafruit_BBIO.GPIO as GPIO
4:
5: #define variables
6: oldband = " "
7:
8: # define GPIO pin aliases
9:
10: # define GPIO pin aliases
11: PIN50 = "P9_12"
12: PIN144 = "P9_18"
13: PIN222 = "P9_24"
14: PIN432 = "P9_30"
15: PIN902 = "P9_31"
16: PIN1296 = "P9_42"
17: PIN2304 = "P8_9"
18: PIN3456 = "P8_15"
19: PIN5760 = "P8_18"
20: PIN10G = "P8_27"
21: PIN24G = "P8_33"
22: PIN47G = "P8_39"
23:
24: #setup and initialize GPIO pins
25: GPIO.setup(PIN50, GPIO.OUT)
26: GPIO.output(PIN50, GPIO.LOW)
27: GPIO.setup(PIN144, GPIO.OUT)
28: GPIO.output(PIN144, GPIO.LOW)
29: GPIO.setup(PIN222, GPIO.OUT)
30: GPIO.output(PIN222, GPIO.LOW)
31: GPIO.setup(PIN432, GPIO.OUT)
32: GPIO.output(PIN432, GPIO.LOW)
33: GPIO.setup(PIN902, GPIO.OUT)
34: GPIO.output(PIN902, GPIO.LOW)
35: GPIO.setup(PIN1296, GPIO.OUT)
36: GPIO.output(PIN1296, GPIO.LOW)
37: GPIO.setup(PIN2304, GPIO.OUT)
38: GPIO.output(PIN2304, GPIO.LOW)
39: GPIO.setup(PIN3456, GPIO.OUT)
40: GPIO.output(PIN3456, GPIO.LOW)
41: GPIO.setup(PIN5760, GPIO.OUT)
42: GPIO.output(PIN5760, GPIO.LOW)
43: GPIO.setup(PIN10G, GPIO.OUT)
44: GPIO.output(PIN10G, GPIO.LOW)
45: GPIO.setup(PIN24G, GPIO.OUT)
46: GPIO.output(PIN24G, GPIO.LOW)
47: GPIO.setup(PIN47G, GPIO.OUT)
48: GPIO.output(PIN47G, GPIO.LOW)
49:
50: # setup ethernet UPD socket and start UDP server
51: port = 13063
52: s = socket.socket(socket.AF_INET, socket.SOCK_DGRAM)
53: s.bind(("",port))
54: print "waiting on port:", port
55:
56: #start loop to receive UDP packets from N1MM
57: while 1:
58:     data, addr = s.recvfrom(1024)
59:
60:     #parse incoming data
61:     str1 = "<RadioNr>1</RadioNr>"
62:     str2 = "<Freq>"
63:     pos1 = data.find(str1)
64:     pos2 = data.find(str2)
65:
66:     #if have valid XML data for N1MM Radio 1 then set band
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67:     if pos1 >= 0:
68:         band = data[pos2+6:pos2+8]
69:
70:         #start band switch code
71:         if band == "50" and band != oldband:
72:             print "found 50"
73:             oldband = "50"
74:             GPIO.output(PIN50, GPIO.HIGH)
75:             GPIO.output(PIN144, GPIO.LOW)
76:             GPIO.output(PIN222, GPIO.LOW)
77:             GPIO.output(PIN432, GPIO.LOW)
78:             GPIO.output(PIN902, GPIO.LOW)
79:             GPIO.output(PIN1296, GPIO.LOW)
80:             GPIO.output(PIN2304, GPIO.LOW)
81:             GPIO.output(PIN3456, GPIO.LOW)
82:             GPIO.output(PIN5760, GPIO.LOW)
83:             GPIO.output(PIN10G, GPIO.LOW)
84:             GPIO.output(PIN24G, GPIO.LOW)
85:             GPIO.output(PIN47G, GPIO.LOW)
86:         elif band == "14" and band != oldband:
87:             print "found 144"
88:             oldband = "14"
89:             GPIO.output(PIN50, GPIO.LOW)
90:             GPIO.output(PIN144, GPIO.HIGH)
91:             GPIO.output(PIN222, GPIO.LOW)
92:             GPIO.output(PIN432, GPIO.LOW)
93:             GPIO.output(PIN902, GPIO.LOW)
94:             GPIO.output(PIN1296, GPIO.LOW)
95:             GPIO.output(PIN2304, GPIO.LOW)
96:             GPIO.output(PIN3456, GPIO.LOW)
97:             GPIO.output(PIN5760, GPIO.LOW)
98:             GPIO.output(PIN10G, GPIO.LOW)
99:             GPIO.output(PIN24G, GPIO.LOW)
100:            GPIO.output(PIN47G, GPIO.LOW)
101:        elif band == "22" and band != oldband:
102:            print "found 222"
103:            oldband = "22"
104:            GPIO.output(PIN50, GPIO.LOW)
105:            GPIO.output(PIN144, GPIO.LOW)
106:            GPIO.output(PIN222, GPIO.HIGH)
107:            GPIO.output(PIN432, GPIO.LOW)
108:            GPIO.output(PIN902, GPIO.LOW)
109:            GPIO.output(PIN1296, GPIO.LOW)
110:            GPIO.output(PIN2304, GPIO.LOW)
111:            GPIO.output(PIN3456, GPIO.LOW)
112:            GPIO.output(PIN5760, GPIO.LOW)
113:            GPIO.output(PIN10G, GPIO.LOW)
114:            GPIO.output(PIN24G, GPIO.LOW)
115:            GPIO.output(PIN47G, GPIO.LOW)
116:        elif band == "43" and band != oldband:
117:            print "found 432"
118:            oldband = "43"
119:            GPIO.output(PIN50, GPIO.LOW)
120:            GPIO.output(PIN144, GPIO.LOW)
121:            GPIO.output(PIN222, GPIO.LOW)
122:            GPIO.output(PIN432, GPIO.HIGH)
123:            GPIO.output(PIN902, GPIO.LOW)
124:            GPIO.output(PIN1296, GPIO.LOW)
125:            GPIO.output(PIN2304, GPIO.LOW)
126:            GPIO.output(PIN3456, GPIO.LOW)
127:            GPIO.output(PIN5760, GPIO.LOW)
128:            GPIO.output(PIN10G, GPIO.LOW)
129:            GPIO.output(PIN24G, GPIO.LOW)
130:            GPIO.output(PIN47G, GPIO.LOW)
131:        elif band == "90" and band != oldband:
132:            print "found 902"
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133:         oldband = "90"
134:         GPIO.output(PIN50, GPIO.LOW)
135:         GPIO.output(PIN144, GPIO.LOW)
136:         GPIO.output(PIN222, GPIO.LOW)
137:         GPIO.output(PIN432, GPIO.LOW)
138:         GPIO.output(PIN902, GPIO.HIGH)
139:         GPIO.output(PIN1296, GPIO.LOW)
140:         GPIO.output(PIN2304, GPIO.LOW)
141:         GPIO.output(PIN3456, GPIO.LOW)
142:         GPIO.output(PIN5760, GPIO.LOW)
143:         GPIO.output(PIN10G, GPIO.LOW)
144:         GPIO.output(PIN24G, GPIO.LOW)
145:         GPIO.output(PIN47G, GPIO.LOW)
146:     elif band == "12" and band != oldband:
147:         print "found 1296"
148:         oldband = "12"
149:         GPIO.output(PIN50, GPIO.LOW)
150:         GPIO.output(PIN144, GPIO.LOW)
151:         GPIO.output(PIN222, GPIO.LOW)
152:         GPIO.output(PIN432, GPIO.LOW)
153:         GPIO.output(PIN902, GPIO.LOW)
154:         GPIO.output(PIN1296, GPIO.HIGH)
155:         GPIO.output(PIN2304, GPIO.LOW)
156:         GPIO.output(PIN3456, GPIO.LOW)
157:         GPIO.output(PIN5760, GPIO.LOW)
158:         GPIO.output(PIN10G, GPIO.LOW)
159:         GPIO.output(PIN24G, GPIO.LOW)
160:         GPIO.output(PIN47G, GPIO.LOW)
161:     elif band == "23" and band != oldband:
162:         print "found 2304"
163:         oldband = "23"
164:         GPIO.output(PIN50, GPIO.LOW)
165:         GPIO.output(PIN144, GPIO.LOW)
166:         GPIO.output(PIN222, GPIO.LOW)
167:         GPIO.output(PIN432, GPIO.LOW)
168:         GPIO.output(PIN902, GPIO.LOW)
169:         GPIO.output(PIN1296, GPIO.LOW)
170:         GPIO.output(PIN2304, GPIO.HIGH)
171:         GPIO.output(PIN3456, GPIO.LOW)
172:         GPIO.output(PIN5760, GPIO.LOW)
173:         GPIO.output(PIN10G, GPIO.LOW)
174:         GPIO.output(PIN24G, GPIO.LOW)
175:         GPIO.output(PIN47G, GPIO.LOW)
176:     elif band == "34" and band != oldband:
177:         print "found 3456"
178:         oldband = "34"
179:         GPIO.output(PIN50, GPIO.LOW)
180:         GPIO.output(PIN144, GPIO.LOW)
181:         GPIO.output(PIN222, GPIO.LOW)
182:         GPIO.output(PIN432, GPIO.LOW)
183:         GPIO.output(PIN902, GPIO.LOW)
184:         GPIO.output(PIN1296, GPIO.LOW)
185:         GPIO.output(PIN2304, GPIO.LOW)
186:         GPIO.output(PIN3456, GPIO.HIGH)
187:         GPIO.output(PIN5760, GPIO.LOW)
188:         GPIO.output(PIN10G, GPIO.LOW)
189:         GPIO.output(PIN24G, GPIO.LOW)
190:         GPIO.output(PIN47G, GPIO.LOW)
191:     elif band == "57" and band != oldband:
192:         print "found 5760"
193:         oldband = "57"
194:         GPIO.output(PIN50, GPIO.LOW)
195:         GPIO.output(PIN144, GPIO.LOW)
196:         GPIO.output(PIN222, GPIO.LOW)
197:         GPIO.output(PIN432, GPIO.LOW)
198:         GPIO.output(PIN902, GPIO.LOW)
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199:         GPIO.output(PIN1296, GPIO.LOW)
200:         GPIO.output(PIN2304, GPIO.LOW)
201:         GPIO.output(PIN3456, GPIO.LOW)
202:         GPIO.output(PIN5760, GPIO.HIGH)
203:         GPIO.output(PIN10G, GPIO.LOW)
204:         GPIO.output(PIN24G, GPIO.LOW)
205:         GPIO.output(PIN47G, GPIO.LOW)
206:     elif band == "10" and band != oldband:
207:         print "found 10 GHz"
208:         oldband = "10"
209:         GPIO.output(PIN50, GPIO.LOW)
210:         GPIO.output(PIN144, GPIO.LOW)
211:         GPIO.output(PIN222, GPIO.LOW)
212:         GPIO.output(PIN432, GPIO.LOW)
213:         GPIO.output(PIN902, GPIO.LOW)
214:         GPIO.output(PIN1296, GPIO.LOW)
215:         GPIO.output(PIN2304, GPIO.LOW)
216:         GPIO.output(PIN3456, GPIO.LOW)
217:         GPIO.output(PIN5760, GPIO.LOW)
218:         GPIO.output(PIN10G, GPIO.HIGH)
219:         GPIO.output(PIN24G, GPIO.LOW)
220:         GPIO.output(PIN47G, GPIO.LOW)
221:     elif band == "24" and band != oldband:
222:         print "found 24 GHz"
223:         oldband = "24"
224:         GPIO.output(PIN50, GPIO.LOW)
225:         GPIO.output(PIN144, GPIO.LOW)
226:         GPIO.output(PIN222, GPIO.LOW)
227:         GPIO.output(PIN432, GPIO.LOW)
228:         GPIO.output(PIN902, GPIO.LOW)
229:         GPIO.output(PIN1296, GPIO.LOW)
230:         GPIO.output(PIN2304, GPIO.LOW)
231:         GPIO.output(PIN3456, GPIO.LOW)
232:         GPIO.output(PIN5760, GPIO.LOW)
233:         GPIO.output(PIN10G, GPIO.LOW)
234:         GPIO.output(PIN24G, GPIO.HIGH)
235:         GPIO.output(PIN47G, GPIO.LOW)
236:     elif band == "47" and band != oldband:
237:         print "found 47 GHz"
238:         oldband = "47"
239:         GPIO.output(PIN50, GPIO.LOW)
240:         GPIO.output(PIN144, GPIO.LOW)
241:         GPIO.output(PIN222, GPIO.LOW)
242:         GPIO.output(PIN432, GPIO.LOW)
243:         GPIO.output(PIN902, GPIO.LOW)
244:         GPIO.output(PIN1296, GPIO.LOW)
245:         GPIO.output(PIN2304, GPIO.LOW)
246:         GPIO.output(PIN3456, GPIO.LOW)
247:         GPIO.output(PIN5760, GPIO.LOW)
248:         GPIO.output(PIN10G, GPIO.LOW)
249:         GPIO.output(PIN24G, GPIO.LOW)
250:         GPIO.output(PIN47G, GPIO.HIGH)
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