QSX-PE

February-March 2016

A wifi antenna's view of the PE beachfront - from the Radisson Blu Hotel

This Newsletter is published by the Port Elizabeth Amateur Radio Society
P.O. Box 10402, LINTON GRANGE, 6015

Editing by Christopher ZS2AAW

QSX-PE - Newsletter for the discerning Radio Ham

Download QSX-PE from www.zs2pe.co.za/Newsletter/Newsletter.htm
or www.commco.co.za/pears.htm

PEARS Monthly Meeting

Tuesday 15th of March, 7:30 pm

Scott Rollo – Supporting Five Dutch tourists' motorcycle trip through Africa

at the Italian Sporting Club, 17 Harold Road, Charlo.

DIARY OF EVENTS	
6 February	Herald Mountainbike Race
7 February	Herald Cycle Race
28 February	Antenna Day @ Londt Park 10h00 with bring & braai
10 April	Ironman event

Logbook of the World - Registration

Dave ZS2DH

I recently went the LOOOOOONG way around to register on Logbook Of The World so I can start collecting DX entities towards the DXCC award. This involved snail mail documents to the USA! Now the documents needed were my radio licence and "a government form of ID with your name on" - a copy of my driver's licence.

This cost me just over R50 in postage because I chickened out and took the cheaper option! The website clearly states that they will not accept emailed correspondence of any sort and that snail mail is the only option for people outside the US. I noted this in the opening line of my email, but explained the situation and asked them to please consider another alternative as many South African's would have the same problem.

A few days later I get an email from Geoff Levey ZS6C telling me I can simply send (email) scans of my licence and drivers licence to him as he has a contact at LOTW and can save a lot of trouble registering.

So if anyone would like to register for LOTW, simply email a scan/photo of your ICASA licence and a copy/photo of your SA ID to Geoff on glevey@gmail.com Geoff does not charge for the service, so it is hassle and cost free! The process also only takes a few days. Geoff asked if we could perhaps mention this service in our magazine as he is trying to get more South African hams onto LOTW.

Many thanks
D

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Radio Amateur Examination Classes to commence

Donovan ZS2DL

- Classes Commence: Thursday 17 March 2016 at 19:00
- Venue for this Class: Shop 3, Sherwood Centre, Kei Street, Sherwood, Port Elizabeth
- You do not need to bring anything to this class. All class notes and revision material will be provided to you. The Course will then run for 10 weeks, once a week for an hour and a half on a Thursday Evening. AT 19:00
- The Exam is currently scheduled to be written on 26 May 2016.
- PLEASE NOTE: This will be the last course offered on the old Curriculum.
- The Fees are as Follows:
    - R500 for the course payable at the first class.
    - The Fee for the exam, ICASA licence and SARL membership is R450 at present and is payable directly to the SARL upon registration for the exam.

Donovan
ZS2DL
zs2dl@hamradio.co.za

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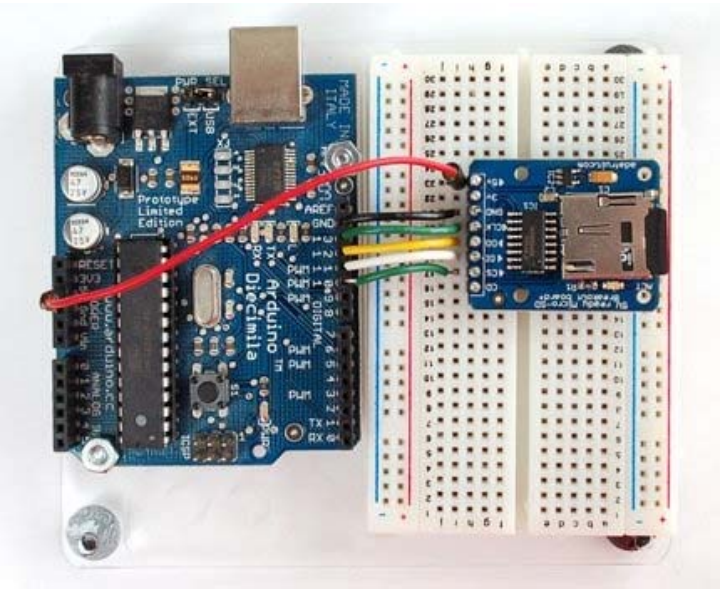
Building the Basic Energy Monitor continued: Part 3 - Adding an SD card and Real Time Clock module (RTC)

Les ZS2VA

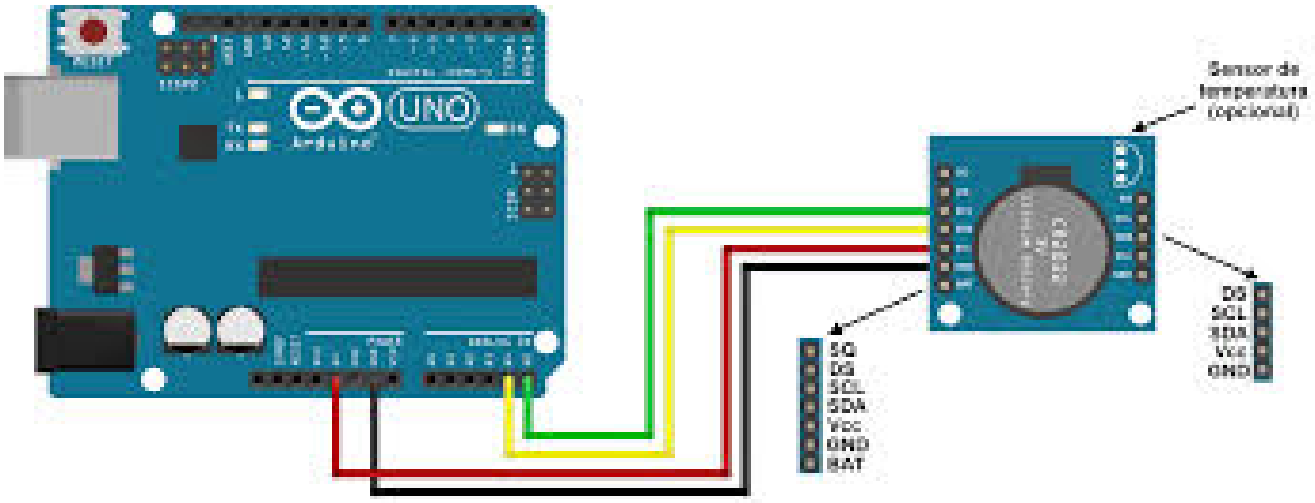
Using an SD card for data logging.



The addition of an SD card for logging allows you to save the data for evaluation or printing at a later stage. The saved format is a csv file (comma separated value) which can be read into an excel file to display or print the data.
The arduino library for use with the SD card is available in the library folder of the Arduino IDE and the library for the RTC is on the Arduino website. To use the SD card you will also need the "SPI" library from the Arduino IDE folder.

The SPI is a 3 wire data interface protocol used by many of these small add on shields. It allows multiple boards to use the same interface and selection is done by calling the address of the respective board.

Real Time Clock shield for dating files etc.



The RTC module requires the “Wire” interface to be included in the sketch. This can be found in the library folder of the Arduino IDE.

Once you have connected the SD card and RTC shield to your board, download one of the many examples contained in the respective libraries to check your wiring and familiarise yourself with the workings of these great little boards.

You can obtain them from Hobbytronics or various suppliers on the internet. Price should be around R30.00 for the RTC module and R50.00 for the SD card module, excluding the card, which does not need to be greater than 4Gb.

I will make the complete sketch available at a later stage, but for anyone desperate to complete the project, you can contact me via email or on 650.

Next month, I will show the construction of my own unit and later, how to add an LCD display for real time monitoring.

Good luck and enjoy the project.

Les
ZS2VA

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Results of the PEARS National VHF & UHF CONTEST 2016

Mike Bosch, ZS2FM

Although the weather conditions were not very favourable in some parts of the country, nevertheless, at least 33 logs were submitted reflecting around seven hundred contacts, a lot more than last year. Divisions 2, 4, 5, 6 and V5 participated in the contest on the five VHF/UHF bands and for the first time used all six categories. This year the field stations triumphed from their high sites. The old problem still persists and that is the reluctance of many participants to make the effort to submit log sheets.

GRAND OVERALL ANALOGUE WINNER:

Winner:	ZS2VDL, Terrence van der Linden	– 82 075 points.
1st Runner-up:	ZS2BO, Allan Bowles	– 70 021 points.
2nd Runner-up:	ZR2T, Alex Gogos	– 56 784 points.

Longest distance on Analogue (A).

144 MHz: ZS2ABB, Terry Flanagan & ZS5DJ, Dave Jones – 569 km.

GRAND OVERALL DIGITAL WINNER:

Winner:	ZS2ACP, Andre Botes	– 24 112 points.
1st Runner-up:	ZS5LEE, Lee Hanegraaf	– 7 980 points.
2nd Runner-up:	ZS2BK, Andre van Deventer	– 6192 points.

Longest distance on Digital (D).

50 MHz:	V51PJ, Pieter Jacobs & ZS2ACP, Andre Botes – 1 086 km.
70 MHz:	V51PJ, Pieter Jacobs & ZS2ACP, Andre Botes – 1 086 km.
144 MHz:	V51PJ Pieter Jacobs & ZS2BK, Andre van Deventer – 1 083 km.

DIVISIONAL ANALOGUE WINNERS:

Division 1:	No logs received this year.
Division 2:	ZS2VDL, Terence van der Linden – 82 075 points.
Division 4:	ZS4A, Rickus De Lange – 46 344 points
Division 5:	ZS5DJ, Dave Jones – 15 300 points.
Division 6:	ZS6CBQ, Carl Minne – 42,007 points.

LIMITED CATEGORY:

Winner: ZS2NF, Barry Nugent – 2 460 points.

ROVER CATEGORY:

Winner:	ZS2DH/R, Dave Higgs	– 14 949 points.
Runner-up:	ZS2G/R, Andrew Gray	– 5 858 points

144.400 MHz & 145.500 MHz FM DIVISIONAL CATEGORY:

Winner: Grant Randall, ZS2GT – 70 points [also the winner of a Yagi antenna prize donated by Ken Victor, ZS2OC for the Divisional 2 winner of the FM Category]

Runner-up: Imo Ferreira, ZS2FF – 30 points.

TOTAL POINTS SCORED FROM ALL 33 LOGS:

(A) 82 075 – ZS2VDL, Terence van der Linden – Field. (Olifantskop).
(A) 70 021 – ZS2BO, Allan Bowles – Field. (Olifantskop).
(A) 56 784 – ZR2T, Alex Gogos – Field. (Zuurberg).
(A) 46 344 – ZS4A, Rickus De Lange – Base. (Bethlehem).
(A) 42 007 – ZS6CBQ, Carl Minne – Base. (Krugersdorp).
(A) 34 764 – ZS2ZA, Andre Potgieter – Field. (Grahamstown).
(D) 24 112 – ZS2ACP, Andre Botes – Base. (Port Elizabeth)
(A) 22 430 – ZR6AUI/4, Christo Greyling – Field. (Near Heilbron)
(A) 15 300 – ZS5DJ, Dave Jones – Base. (Ramsgate)
(A) 14 949 – ZS2DH/R, Dave Higgs – Rover. (Port Elizabeth)
(A) 12 530 – ZS2ABB, Terry Flanagan – Base. (Port Elizabeth)
(A) 11 652 – ZS2U, Al Akers – Base. (Port Elizabeth)
(A) 10 650 – ZS6BUN, Dick Coates – Base. (Edenvale).
(D) 07 992 – ZS6BUN, Dick Coates – Base. (Edenvale
(A) 07 980 – ZS4N, Nico Oelofse – Base. (Bloemfontein).
(A) 06 585 – ZS2ABZ, Bill Hodges – Base. (Port Elizabeth)
(D) 06 192 – ZS2BK, Andre van Deventer – Base. (Port Elizabeth).
(A) 06 102 – ZS2AH, John Bryson – Base. (East London).
(A) 05 858 – ZS2G/R, Andrew Gray – Rover. (Port Elizabeth).
(A) 05 604 – ZR4MF, Michael Folkey – Base. (Bloemfontein).
(D) 05 320 – ZS5LEE, Lee Hanegraaf – Base. (Durban).
(A) 04 920 – ZS2NF, Barry Nugent – Limited. (Uniondale).
(D) 04 338 – V51PJ, Pieter Jacobs – Base. (Rosh Pinah, Namibia).
(A) 04 206 – ZS2MG/R, Michael Gooden – Rover. (Port Elizabeth).
(A) 04 112 – ZS2ABF, Peter Tottle – Base. (East London).
(A) 03 556 – ZS6SVJ, Stephen van Jaarsveld – Base. (Pretoria).
(A) 03 024 – ZS2EC, Theunis Potgieter – Base. (Port Elizabeth).
(A) 02 960 – ZS2NB, Nick Basson – Base. (East London).
(A) 01 314 – ZS5LEE, Lee Hanegraaf – Base. (Durban).
(A) 01 113 – ZS6STN, Club station (Sandton). Operated by Marius Snyman, ZR6MS.
(D) 00 427 – ZS5HV, Hugo van Zyl – Base. (Scottburgh).
(A) 00 070 – ZS2GT, Grant Randall – FM Category. (Port Elizabeth).
(A) 00 030 – ZS2FF, Imo Ferreira – FM category. (Port Elizabeth).

PEARS would like to express their sincere thanks to all those who sent in logs and hopefully enjoyed the contest. See you next year!

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What is an Arduino?

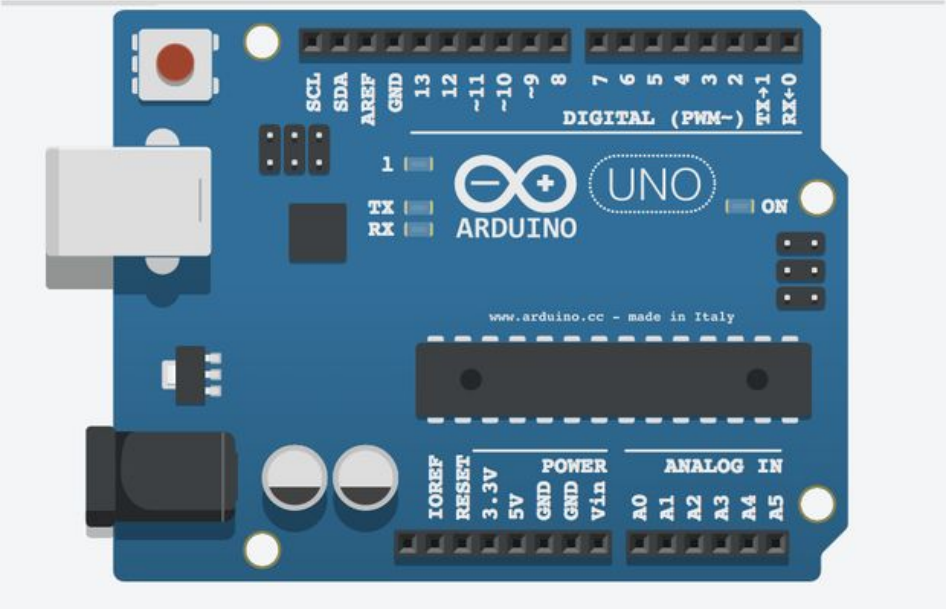
Article submitted by Les ZS2VA

We have spoken of the Arduino board and I know some of you have never heard of it! Here is a short article I found on Instructables@instructables.com, which I thought may be of interest and hopefully it gives you an insight into these great little boards.

73
ZS2VA

Step 1: What is Arduino

First we'll take a look at all the parts of the Arduino. The Arduino is essentially a tiny computer that can connect to electrical circuits. The Arduino Uno is powered by an Atmega 328P chip, it is the biggest chip on the board (see the image note on the image above). This chip is able to execute programs stored in its (very limited) memory.



We can load programs onto the chip via USB using the Arduino IDE (download this if you haven't already). The USB port also provides power to the Arduino. Alternatively, we could power a programmed board using the power jack, in that case we do not need a USB connection.

The Arduino has a few rows of pins that we can plug wires into. The power pins are labeled in the image above. The Arduino has both a 3.3V or 5V supply; in this class we will use the 5V supply, but you might find some chips or components that require 3.3V to run, in that case the 3.3V supply will be useful. You will also find some pins labelled "GND" on the Arduino, these are ground pins (ground is the same thing as 0V). Electrical current always flows from some positive voltage to ground, so these pins are useful for completing circuits, we will use them often.

The Arduino has 14 digital pins, labelled 0-14, that connect to circuits to turn them on or off, or to measure buttons and other 2-state circuits (a button is two state because it is

either pressed or not pressed, as opposed to a dial, which has a range of possible states). These pins can act as either inputs or outputs, meaning they can control a circuit or measure it.

Next to the power connections are the Analog input pins, labelled A0-A5. These pins are used to make analog measurements of sensors or other components. Analog inputs are especially good for measuring things with a range of possible values. For example, an analog input pin will let us measure the amount of flex of a flex sensor, or the amount that a dial has been turned. You can use an analog input to measure a digital component (like a button) or even act like a digital output, they are basically digital pins with extra powers.

Step 2: How to Use a Bread Board

Breadboards let us make temporary electrical connections between components so that we can test circuits before we permanently solder them together. This whole class will be done on a breadboard so we can reuse components and make quick changes to a circuit.

Breadboards have rows of holes that you can plug wires or other electrical components into. Some of these holes are electrically connected to each other through metal strips on the underside of the breadboard. Here's how the connections work:

One each side of the breadboard, two rows of holes are connected across the entire length of the board (images 1 and 2 above). Generally, you will connect these long "rails" to 0V (also called "ground") and whatever voltage you are using for power (in this class we will use 5V from the Arduino), so that those connections are available everywhere on the board. In this case, the first thing you want to do is wire up these connections to your Arduino as shown in image 4, notice how I connected ground to the row labelled "-" and 5V to the row labelled "+", your breadboard may or may not be labelled. Note: sometimes these side strips will only extend halfway across a longer breadboard, use wires to complete the connection (image 5).

The rest of the holes in the breadboard are grouped into rows of five in the center of the breadboard (image 3). This is where you will connect electrical components to each other to form circuits.

Step 3: Turn on LED with 5V

[+5V --- 220 Ohm resistor --- LED --- GND I'm sure you can do that! Ed]

Step 4: Anatomy of an Arduino Sketch

Programs in the Arduino language are called "sketches". An Arduino sketch is comprised of two main parts: the setup function and the loop function.

setup() - the setup() function is automatically executed at the very beginning of an Arduino program. Inside this function you will initialize variables, pins, and any libraries that you might be using in your sketch. The setup() function is only run once during an Arduino sketch, right when the board is powered or reset.

loop() - the loop() is where the bulk of your program will live. This function is executed after the setup() is complete. The Arduino will execute the commands inside the loop over and over again until the board is powered off.

From here on out, the Arduino reference page will be very useful for documentation about the Arduino language and programming environment.

Step 5: Arduino LED Blink

In this example we'll wire up our LED circuit to one of the Arduino's digital pins and turn the LED on and off with code. This example introduces a few useful functions built into the Arduino language, they are:

pinMode(pinNumber, mode) - pinMode is used during the setup() part of the sketch to initialize each pin we are using as either an input or an output. We cannot read or write to a pin before pinMode has been set. pinMode() takes two arguments - a pin number (each of the Arduino pins is labelled with a number) and that mode that we want the pin (either "INPUT" or "OUTPUT"). In the case of blinking an LED, we are sending data out of the Arduino to control the state of the LED, so we use "OUTPUT" as the second argument.

digitalWrite(pinNumber, state) - digitalWrite is a command that lets us set the voltage of a pin to either 5V or ground (remember "ground" is synonymous with 0 Volts). In the last example we hooked up an LED to a 5V supply and saw it turn on, if we hook up the LED to one of the Arduino's digital pins instead, we can turn the LED on by setting the pin to 5V and off by setting the pin to ground. digitalWrite() also takes two arguments - a pin number and the state of the pin ("HIGH" for 5V and "LOW" for ground).

delay(timeInMs) - delay pauses the program for a given amount of time. For example, delay(2000) will pause the program for 2000 milliseconds (2000 milliseconds = 2 seconds), delay(100) will pause the program for 100 milliseconds (1/10 of a second), and so on...

Below is the LED Blink code, run this code on your Arduino.

```
//LED Blink

int ledPin = 7;//the Arduino pin that is connected to the LED

void setup() {
  pinMode(ledPin, OUTPUT);// initialize the pin as an output
}
```

```
void loop() {
  digitalWrite(ledPin, HIGH);//turn LED on
  delay(1000);// wait for 1000 milliseconds (one second)
  digitalWrite(ledPin, LOW);//turn LED off
  delay(1000);//wait one second
}
```

A few notes on the code:

Lines that start with "//" are comments - Arduino ignores these.

You may have noticed all the semicolons, semicolons are used at the end of every command in the Arduino language. If you forget a semicolon, you will get an error. You will find that many other programming languages use semicolons at the end of each line.

In this code "ledPin" is a variable. Variables are used to store information in programs, in this sketch, I'm using the variable "ledPin" to store the number 7. Later in the program when the Arduino hits a line with the variable "ledPin", it will evaluate the variable according to its current stored value. So the line:

```
pinMode(ledPin, OUTPUT);
```

is evaluated by Arduino as:

```
pinMode(7, OUTPUT);
```

In fact, we could replace all uses of pinMode with the number 7 and the program would work exactly the same, but using the variable helps us more easily read and understand the code.

"int" from the first line is a data type - in the Arduino language, you must always initialize variables by declaring their type. There are many different types (you can read about all of them here), for now all you need to know is that int variables are positive or negative whole numbers - you will use them often.

Below is a simulation of the sketch, try pressing the play button to see how it works (works best in Chrome)
As expected, the LED turns on for one second, then turns off for one second. Try changing the length of the delay() to see how it affects the LED blink time.

Another thing to look out for - a mistake that people often make is to omit the last delay() in the loop(). Try it - you will find that the LED stays on without blinking. This might be confusing to you, because we still have a digitalWrite(ledPin, LOW) command in the program. What's happening here is the led is turned off, but the Arduino immediately hits

the end of the loop() and starts executing the first line of the loop() again (turning the LED on). This happens so fast that the human eye cannot see the LED turn off for that brief moment while the loop is restarting.

Step 6: Controlling Multiple LEDs with Arduino

In this example we'll wire up three more LEDs like we did in the last example, and control them with multiple digital pins. First wire up three more LEDs and current limiting resistors as shown below:

If we want to cycle through all the LED's and turn them on and off one by one we can write our Arduino sketch like this:

```
//Multi LED Blink

int led1Pin = 4;
int led2Pin = 5;
int led3Pin = 6;
int led4Pin = 7;

void setup() {
  //initialize the led pins as an outputs
  pinMode(led1Pin, OUTPUT);
  pinMode(led2Pin, OUTPUT);
  pinMode(led3Pin, OUTPUT);
  pinMode(led4Pin, OUTPUT);
}

void loop() {
  digitalWrite(led1Pin, HIGH);//turn LED on
  delay(1000);// wait for 1000 milliseconds (one second)
  digitalWrite(led1Pin, LOW);//turn LED off
  delay(1000);//wait one second

  //do the same for the other 3 LEDs
  digitalWrite(led2Pin, HIGH);//turn LED on
  delay(1000);// wait for 1000 milliseconds (one second)
  digitalWrite(led2Pin, LOW);//turn LED off
  delay(1000);//wait one second

  digitalWrite(led3Pin, HIGH);//turn LED on
  delay(1000);// wait for 1000 milliseconds (one second)
  digitalWrite(led3Pin, LOW);//turn LED off
  delay(1000);//wait one second

  digitalWrite(led4Pin, HIGH);//turn LED on
  delay(1000);// wait for 1000 milliseconds (one second)
```

```
  digitalWrite(led4Pin, LOW);//turn LED off
  delay(1000);//wait one second
}
```

This works, and we could leave it like and everything would work great, but it is not the most efficient way to write our code. Instead, we will use a structure called a for loop to cycle through the LEDs. For loops are useful for repeating a piece of code over and over. In the case above we're repeating the lines:

```
digitalWrite(led4Pin, HIGH);
delay(1000);
digitalWrite(led4Pin, LOW);
delay(1000);
```

here's how we'll write the for loop:

```
for (int ledPin=4;ledPin<8;ledPin++){
digitalWrite(ledPin, HIGH);
delay(1000);
digitalWrite(ledPin, LOW);
delay(1000);
}
```

In the first line we are initializing a variable "ledPin" as 4 and telling the Arduino that we would like to cycle through values of the variable starting at 4, up to 7 (ledPin<8). The ledPin++ tells the Arduino to increase the value of ledPin by 1 each time we repeat the loop. Then we execute the lines inside the loop using the variable ledPin. So the first time ledPin = 4, and pin 4 is turned on then turned off, then ledPin is increased to 5 and the for loop starts again, this time turning pin 5 on then off, and so on... The result is exactly the same as the more verbose sketch above, where we repeated the digitalWrite and delay commands many times. Here is the full sketch:

```
//Multi LED Blink

int led1Pin = 4;
int led2Pin = 5;
int led3Pin = 6;
int led4Pin = 7;

void setup() {
  //initialize the led pins as an outputs
  pinMode(led1Pin, OUTPUT);
  pinMode(led2Pin, OUTPUT);
  pinMode(led3Pin, OUTPUT);
  pinMode(led4Pin, OUTPUT);
}
```

```
void loop() {
  for (int ledPin=4;ledPin<8;ledPin++){//for pins 4-7
    digitalWrite(ledPin, HIGH);//turn LED on
    delay(1000);// wait for 1000 milliseconds (one second)
    digitalWrite(ledPin, LOW);//turn LED off
    delay(1000);//wait one second
  }
}
```

For anyone wishing to progress further, read the full article on http://www.instructables.com/id/Beginner-Arduino/?ALLSTEPS

CONGRATULATIONS

BIRTHDAYS – February

02 Shirley Winter, XYL of Gus ZS2MC
02 Paul Galpin ZS2PG
03 Wanda van Vuuren, XYL of Johan ZS2JV
04 Ivan Newman ZS2ILN
06 Mandy La Mude ZS2AV
06 Neels Kruger, OM of Patsy ZS2PTY
07 Joan Bowles ZR2ABA, XYL of Allan ZS2BO
12 Rosemary MacGeoghegan ZR2MCR, XYL of Rob ZS2ROB
12 Peter Lunow ZS2PEL
18 Peter Flynn ZS2PF
19 Gary Laaks ZS2GRL
26 Jacques van der Heide ZR2JH
26 Henry Danielson ZS2HD
28 Basie du Plessis ZR2BA
29 Wolf Gerstle ZS2WG

BIRTHDAYS – March

01 Rudi Goossens ZR2RCG
03 Daphne Galpin, XYL of Paul ZS2PG
10 Michael Gooden ZS2MG
13 Margaret Ras, XYL of Martin ZS2MR
15 Susanna Bosch, XYL of Mike ZS2FM
21 Andrew Gray ZS2G
22 Peggy Moore, XYL of Viv ZS2VM
29 Allan Whitehead ZS2R
31 Richard Boatwright ZS2RP

If you are a member and your birthday or anniversary details are omitted or incorrect, please notify Clive ZS2RT (or any committee member) to update our records.

BIRTHDAYS – April

01 Rosalee van Loggerenberg ZS2DN, XYL of Donovan ZS2DL
01 Joan Jackson, XYL of Barry ZS2H
03 Theunis Potgieter ZS2EC
05 Rey Martin, XYL of Saney ZR1S
05 Hugo Ras ZS2HR
07 Christel Opperman, XYL of Micho ZS2MD
12 Andre Potgieter ZS2ZA
13 Lizette Oelofse, XYL of Nico ZS4N
18 Annelize Baker, XYL of Aldrin (no callsign yet)
20 Trevor Scarr ZS2AE
22 Allan Bowles ZS2BO
24 Deidre Allen, XYL of Tony ZR2TX
28 Chantelle Ashworth, XYL of Richard ZS2RA
28 Chris Scarr ZS2AAW

ANNIVERSARIES – February

01 Lizette & Nico Oelofse ZS4N
15 Vanessa ZS2VS & Chris Scarr ZS2AAW

ANNIVERSARIES – March

22 Ellie & Rudi Goosens ZR2RCG

ANNIVERSARIES – April

03 Juan & Hugo Ras ZS2HR
04 Vanessa & Glen Cummings ZS2GV
06 Cathy & Wolf Gerstle ZS2WG
08 Colette & Mitch Rundle ZS2CR & ZS2DK
11 Annelize & Aldrin Baker (no callsign yet)
23 Patsy & Neels Kruger ZS2PTY

Minutes of the January Monthly Meeting (no December mtg)

Held at the Italian Sporting Club on the 19th January 2016 at 19h30

Welcome

Chris ZS2AAW welcomed everyone to the meeting

Attendance and Apologies

As per the attendance register

Apologies: ZS2FF, ZS2NF, ZS2VA, ZS2EHB ZS2GV, ZS2JO

Acceptance of the minutes of the previous meeting

Proposed: ZS2JV, Seconded ZS2PG

Matters arising

None

Correspondence

ISP Vox Datapro had emailed some updated quotations following our queries for better rates. Users have asked about services like Netfix over the wifi, which means an uncapped service remains essential.

R5016 paid to the NMBM still reflects in the electricity account. ZS2JV will provide some suggestions.

Finance for the month was:

The treasurer Clive ZS2RT reported that everything was in order with the society's finances and that to date, there were 62 paid up members.

Expenses

QSX Printing = R234
QSX Postage = R99
Electricity = R1052 (2 months)
Rally = R126
Wine (Xmas function) = R350
Repeater spares = R699

Clive was looking for the source of R1000 deposited in November without a reference..

General

Donavan requested the committee to draw up a proposal for SARL Hall of fame - ZS2AA Iris. The committee also thought ZS2FM Mike Bosch would be another candidate. Paperwork to be drawn up

Repeater news

Chris gave an update on work planned for the Southern Cape specifically the George Repeater site. New equipment was proposed that complied with the 12.5 channel Spacing. Longmore no link to 650 at present

ZS2TED will be home at the end of January

Events:
Fish River canoe race October – PEARS may be approached for comms assistance – using HF
P.E. to E.L. Surfski Challenge

Tea and biscuits
As usual, a short break for refreshments was held

Talk
Freddy ZR2FM gave a talk on the club's DStar Repeater operation located at Lovemore Heights.

The meeting closed at 21h25

---oooOOOooo---

APRSdroid for Dummies

Beavan ZS2RL

APRS = Advanced Packet Radio System. One of its uses is the transmission of GPS position data, a.k.a. tracking, or position reporting. Because of the latter, the apt but albeit incorrect idea took root that APRS stood for 'advanced position reporting system'. Not so.

Historically, APRS consisted of RF-linked networks which by their very nature were restricted to a limited geographic area. But then along came the internet, offering world-wide connectivity. Hams were quick to seize the opportunity, and consequently APRS IS (APRS Internet Service) came into existence. In essence it is a world-wide APRS network based on the internet. Enthusiastic hams established APRS servers, and interconnected these via the internet. In a sense, these servers act as digipeaters.

iGates (internet gateways) provide the interface between the internet and external networks and gadgets. The end result is world-wide packet radio. All you need is a computer with suitable software and then you can send data packets to a suitable device anywhere in the world. Cool!

But a smart-phone is nothing but a portable computer that has built-in internet connectivity via 3G, and with a built-in GPS function it is ready-made for position reporting (i.e. tracking). Inevitably some clever fellows saw the opportunity and wrote the

appropriate interfacing software, one of these being known as APRSdroid (APRS for smart-phones utilizing the android operating system). A similar scenario exists for Apple phone users, in the form of iAPRS

APRSdroid offers connectivity via APRS IS, or to other networks via WiFi or Bluetooth, and can do position reporting or messaging. Once up and running, the map screen will show you the position and tracks of all the devices within a specified radius of your position, all shown on a detailed Google street map. Very useful in the context of special events.

You have two options for obtaining APRSdroid. You can download it directly from the author's website for free at https://aprsdroid.org , or you can download it from the Google Play Store for R59. The downside of going the free route is that you will not get automatic updates.

After installing it on your phone you will need to register on the APRS IS network, and this will require your call-sign and a passcode. The general idea of the passcode seems to have been that only bona fide hams would be allowed to connect to APRS IS, and you had to apply for a passcode from the IS providers. The passcode is derived from the call-sign, using an algorithm. Bit of a joke really, because hackers soon figured out the algorithm and it's commonly available on the internet. Just google 'APRS IS passcode', and you'll be A for away.

The APRSdroid website contains useful information and links, so you should not encounter any difficulties. If a dumb oke like me could get it to work, then so can you!

In the Preferences menu of APRSdroid, a few items might need looking at.

1. Under Preferences/Connection Preferences/Server you can specify which APRS IS server you wish to connect to. It's suggested that you specify www.aprs-za.com which is a Gauteng-based server run by Andy ZS6CEY, so keeping the data local

2. 'Smart Beaconing' is the recommended option for position reporting. Obviously, the more frequently you send beacons the more accurate your track plot will be. But what's the point in sending a beacon every 30 secs if you are in the N Cape and travelling in a straight line for umpteen kilometers between Soutpan and Blinkpan? – you only clutter up the channel with superfluous information. 'Smart Beaconing' is a neat way of determining how often beacons should be sent, based on the logic behind user-configurable parameters.

In the Preferences section, some explanation of Location Settings for Smart Beaconing might be useful.

The following four parameters determine the beaconing rate for straight-line travelling.

a. Fast Speed (km/h): This is the fastest speed you are likely to be travelling at.
b. Fast Rate (secs): Time between beacons when travelling at or beyond the Fast Speed.
c. Slow Speed (km/h): Slowest likely speed.
d. Slow Rate (secs): Time interval between beacons while travelling at Slow Speed.

At speeds between Fast and Slow, the software calculates a beaconing rate in proportion to the actual speed. I have chosen my parameters so that the phone emits a beacon every 2 km.

For reasonably accurate tracking, turns and corners need to be nailed down with some precision. The software uses an algorithm that takes account of the angle of the turn, as well as the speed while executing the turn. The underlying philosophy is that at higher speeds it is desirable to be more sensitive to changes in direction, whereas at slow speeds minor changes in direction are not important (like when dodging potholes!). The parameters that govern this are

e. Minimum Turn Time (secs); The minimum time between successive beacons while turning.
f. Minimum Turn Angle: The minimum turn angle that will trigger a beacon if you are travelling at a high speed. Anything less than this will not result in a beacon.
g. Turn Slope: A confusing term, this. It is really just an arbitrary constant, chosen by the user, that the algorithm uses to compute the least actual turn angle that will trigger a beacon at slower speeds.

Let's define Least Trigger Angle as the angle computed by the algorithm, taking account of speed, that will result in a beacon. Anything less than this will not trigger a beacon. Least Trigger Angle is calculated as follows –

Least Trigger Angle = (Minimum Turn Angle) + (Turn slope)/(Actual Speed)

The slower you go, the greater the angle required to generate a beacon. Makes sense.

In conclusion, if you log into the website aprs.fi, you will be able to see any position beacon anywhere in the world. The website appears to accumulate all the beacons for a number of days. You can search by call-sign or Maidenhead locator, and see who went where and when.

Bearing the above in mind, if your XYL is computer literate, it might be advisable to switch off your smart-phone before heading for the pub, or some other place of entertainment of dubious reputation.

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Sunday Bulletins

PEARS provides a local reading of the SARL national bulletins in Afrikaans at 08h15 and English at 08h30. The club bulletins are transmitted immediately after the SARL English bulletin, i.e. at about 08:45 on 7098 kHz as well as the 2m linked network that provides coverage from Butterworth to George and up to the Free State and their environs.

A recorded rebroadcast of the society bulletin takes place on the Eastern Cape Linked Repeater Network every Monday night at 20h00, courtesy of Ewalt, ZS2EHB.

Bulletin Roster

www.zs2pe.co.za/bulletins.htm

21 February	Andrew	ZS2G
28 February	Chris	ZS2AAW
6 March	Clive	ZS2RT
13 March	John	ZS2GB
20 March	Johannes	ZS2JO
27 March	Nick	ZS2NT
3 April	Glen	ZS2GV
11 April	Tony	ZR2TX
17 April	Andrew	ZS2G

The bulletin readers are always looking for something to announce. If you have something to contribute, please forward it to the next reader.

Your Society's Committee for 2015-2016

Chairman, QSX, Wifi, Repeaters	Chris Scarr ZS2AAW	082 925 6367	christopher[at]peham.co.za
Vice Chairman, Events & Rally organising	Tony Allen ZR2TX	082 956 2920	tony.zr2tx[at]gmail.com
Secretary (soon to be vacant)	John Ashworth ZS2GB	082 490 2500	Johna[at]littleslipper.co.za
Treasurer	Clive Fife ZS2RT	041 367 3203	clive[at]peham.co.za
Technical/repeaters	Glen Cummings ZS2GV	082 411 2743	glenvanessa[at]gmail.com
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PEARS VHF/UHF Contest	Mike ZS2FM	084 612 9600	mikecbosch[at]gmail.com
Meetings catering	Bill Hodges ZS2ABZ	O41 581 2580	zs2abz[at]isat.co.za
QSX Editor	*Vacant*	-	-

Replace [at] with @ when you want to send an email (this is done to try to prevent spamming).

PEARS' VHF/UHF, Packet & Other Services

Local Repeaters: These repeaters form a separate sub-net in the PE - Uitenhage - Despatch area.

Town VHF	**Town UHF**	**Uitenhage**	**Longmore**	**IRLP** available
145,050/650	431,050/438,650	145,075/675	145,025/625	on this subnet

Cape Linked System Repeaters:

These form the PEARS long-range 2-metre repeater system, in conjunction with the Border, Southern Cape and WCRWG systems. See www.zs2pe.co.za/Repeaters/repeaters.htm for more details.

Lady's Slipper	**Grahamstown**	**Cradock**	**Noupoort (link only)**
145,100/700	145,150/750	145,050/650	438,750 / 438,675
Colesberg	**Kareedouw**	**Plett**	**Brenton**
431,075/438,675	145,125/725	145,175/775	145,075/675

Packet network:

ZS0NTP-2 Packet Node Lady's Slipper 144,800 1200bd 439,850 9600bd 434,800 1200bd APRS	**ZS0NTP BBS** Lady's Slipper On all node frequencies	**ZS0GHT-2 Packet Node** Grahamstown 144,800 1200bd 434,800 1200bd 439,850 9600bd (to LS)	**ZS0CDK-2 Digi** Cradock 144,800 1200bd
	ZS0KDJ APRS Digi Mount Road 434,800 1200bd	**ZS0KDB APRS Digi** Longmore 434,800 1200bd	**ZS2ABZ-4** WMR918 WX Station 144,625 1200bd

VHF Beacon: 50,007 MHz FSK – ZS2X, 25 Watts into 2 element Yagi beaming north.

Banking details *(for subs & donations):* NEDBANK SAVINGS ACCOUNT No. 221 252 7594, Bank code 121217, A/C name: Port Elizabeth Amateur Radio Society. **Please use call signs as a reference.**

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QSX-PE - Newsletter for the discerning Radio Ham

TO:

IF NOT DELIVERED
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6015

AMATEUR RADIO is the hobby for RADIO EXPERIMENTERS and those who like to fiddle with ELECTRONICS, COMMUNICATIONS or COMPUTERS