QR PNG Output

BMP or PNG

Potential Additions

- Decoding QR...
- Efficiency Improvements...
- PNG Output...
  - APNG QR Roulette

Understanding 3ʳᵈ Party Code

- High Level Overview of Modules
- Encode

```
(defun encode (text ecLevel filename)
    (write-binary-file
      filename
      (create-bitmap
          (ByteMatrix:getArray
              (QRCode:getMatrix
                  (Encoder:encode text ecLevel))))
    state))
```

Design

```
(defun encode (text ecLevel filename topng)
  (write-binary-file
   filename
   (let
       ((matrix (ByteMatrix:getArray
                 (QRCode:getMatrix
                  (Encoder:encode text ecLevel)))))
     (if topng
         (makePNG matrix)
         (create-bitmap matrix)))
   state))
```

PNG Flag

For BMP output:
(encode "Team Steele" (EC:L) "output" nil)

For PNG output:
(encode "Team Steele" (EC:L) "output" 't)

PNG Output Implementation

- Continuation of Group Coding Method
- Two New Added Modules
  - pngQR (146 LoC)
  - zlib   (97 LoC)
- Two Reused Modules – from PNGA
  - pngUtils
  - basicLex

File Size Improvement

PNG output is smaller than BMP by 66%

Example:
Encoded string - "Team Steele"
Error Correction Level – Low

BMP – 157.7 KB   PNG – 52.9 KB

Questions??