

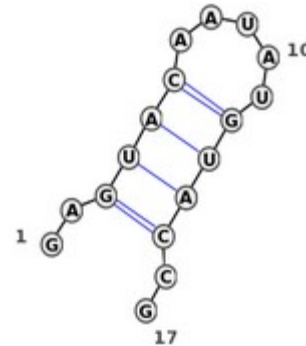
# Visualization of RNA secondary structure

Protein Prediction 2  
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## Project aim

- Core
  - Visualization of RNA secondary structure

Seq:	GAGUACAAUUAUGUACCG
Str:	..(((.....)))..



- Additional Functions
  - Display additional information on mouse-over
  - Drag nodes or even the whole visualization to enable examination of the structure from different angles
  - Make visualization editable: Allow addition and deletion of nodes and edges and export the changes in a suited format

# Given data

- Different Data formats
  - Bpseq format:

Without header	Including header
1 C 0	Filename: test.bpseq
2 C 9	Organism: Some organism
3 U 8	Accession Number: XYZ123
4 G 0	Citation and related information available at <a href="http://www.rna.cccb.utexas.edu">http://www.rna.cccb.utexas.edu</a>
5 A 0	1 C 0
6 A 0	2 C 9
7 C 0	3 U 8
8 A 3	4 G 0
9 G 2	5 A 0
	6 A 0
	7 C 0
	8 A 3
	9 G 2

- Connect (.ct) format

```

73 ENERGY -      -17.50  S.cerevisiae_tRNA-PHE
 3 G      0      2 72 1
 2 C      1      3 71 2
 3 G      2      4 70 3
 4 G      3      5 69 4
 5 A      4      6 68 5
 6 U      5      7 67 6
 7 U      6      8 66 7
 8 U      7      9  0 8
      .
      .
      .
66 A      65      67  7 66
67 A      66      68  6 67
68 U      67      69  5 68
69 U      68      70  4 69
70 C      69      71  3 70
71 G      70      72  2 71
72 C      71      73  1 72
73 A      72      74  0 73

```

- Vienna format(Dot-Bracket)

```

>Header line
AUCGAGAAAUCGAAC
..(((.....)))...

```

source([http://www.ibi.vu.nl/programs/k2nwww/static/data\\_formats.html](http://www.ibi.vu.nl/programs/k2nwww/static/data_formats.html))

## Visualization

- Project can be divided into 3 sections
  - Parse Input
  - Build network
    - Test driven approach to assure correct functionality
  - Visualisation of the network with D3
    - We intend to use the D3 Force Layout

source(<https://github.com/mbostock/d3/wiki/Force-Layout>)

**The end**