jforests binary format version 3

Header

i32 Version = 3	i32 Features Count	i32 Targets Count	i32 Feature Bytes[0]
i32 Feature Bytes[1]	As many as features count		i32 Feature Bytes[...]
u8 Feature type[0]	As many as features count		u8 Feature type[...]
i32 **Queries Count**	Queries count is only present with **--ranking** option.		

The basic idea of this format is to **remove duplicates in values** for each feature, and use a compressed array to index into it.

Targets

double Target Value[0]	As many as targets count	double Target Value[...]

No Indices Array

Possible values in the feature

Null-type feature

i32 **Values Count = 1**	i32 Values[0]		
i16 Name length	char Name[0]	As many as name length	char Name[len-1]
double64 Min value	double64 Max value	double64 Factor	bool Is log scaled

One value

Bit-type feature

i8 Index[0]	As many as ceil(targets count / 8)		**i8** Index[targets-1]
i32 **Values Count = 2**	i32 Values[0]	i32 Values[1]	
i16 Name length	char Name[0]	As many as name length	char Name[len-1]
double64 Min value	double64 Max value	double64 Factor	bool Is log scaled

Two values

Byte-type feature

i8 Index[0]	As many as targets count		**i8** Index[targets-1]
i32 **Values Count**	i32 Values[0]	As many as values count	i32 Values[count-1]
i16 Name length	char Name[0]	As many as name length	char Name[len-1]
double64 Min value	double64 Max value	double64 Factor	bool Is log scaled

Up to 2^8 values

Short-type feature

i16 Index[0]	As many as targets count		**i16** Index[targets-1]
i32 **Values Count**	i32 Values[0]	As many as values count	i32 Values[count-1]
i16 Name length without \0	char Name[0]	As many as name length	char Name[len-1]
double64 Min value	double64 Max value	double64 Factor	bool Is log scaled

Up to 2^16 values

i32 Index[0]	As many as targets count		**i32** Index[targets-1]
i32 **Values Count**	i32 Values[0]	As many as values count	i32 Values[count-1]
i16 Name length	char Name[0]	As many as name length	char Name[len-1]
double64 Min value	double64 Max value	double64 Factor	bool Is log scaled

Up to 2^32 values

Query ranges in the file

i32 Boundaries[0]	As many as queries count **+ 1**	i32 Boundaries[..]

Query boundaries are present only with **--rank** option.

Query 0:
(boundary[0], boundary[1])
Query 1:
(boundary[1], boundary[2])
...
Query n:
(boundary[n], boundary[n+1])