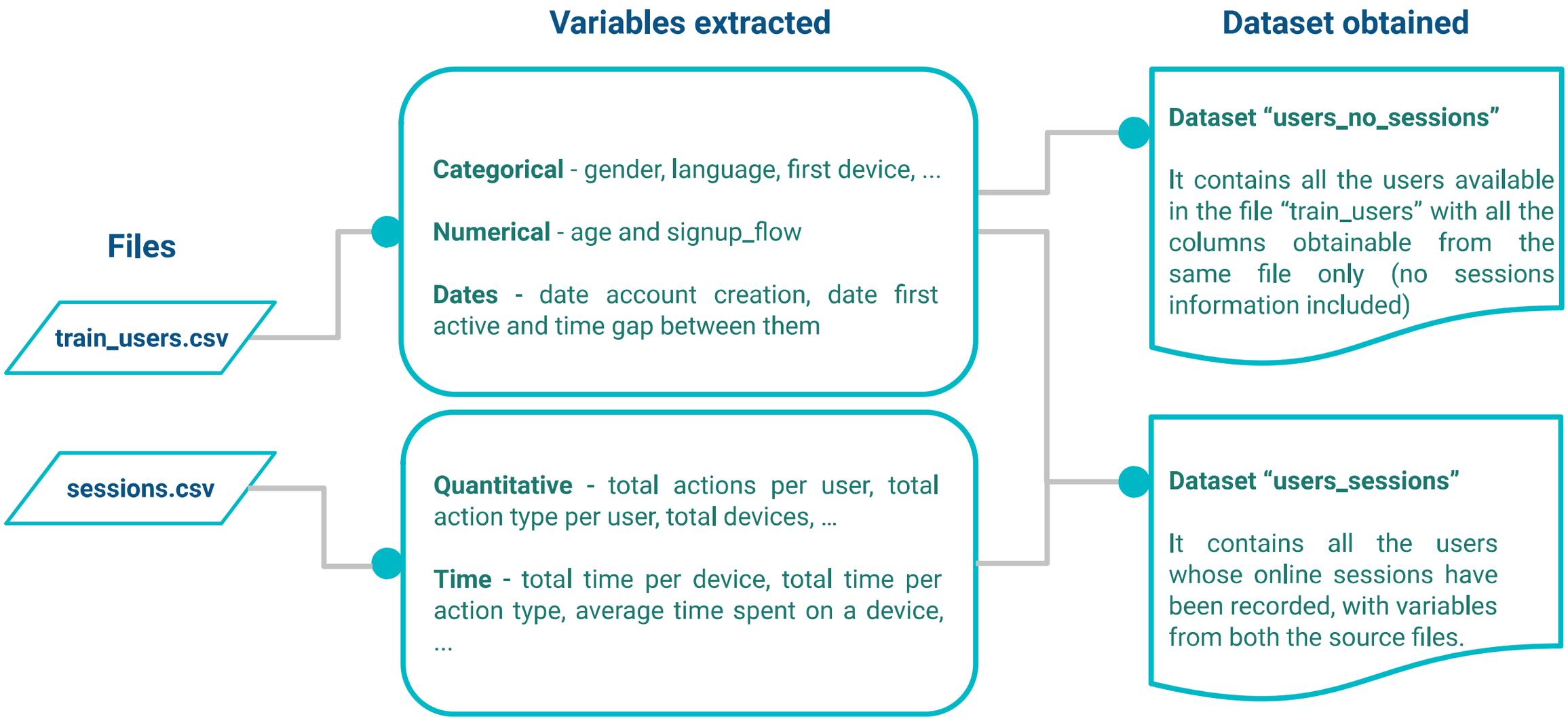
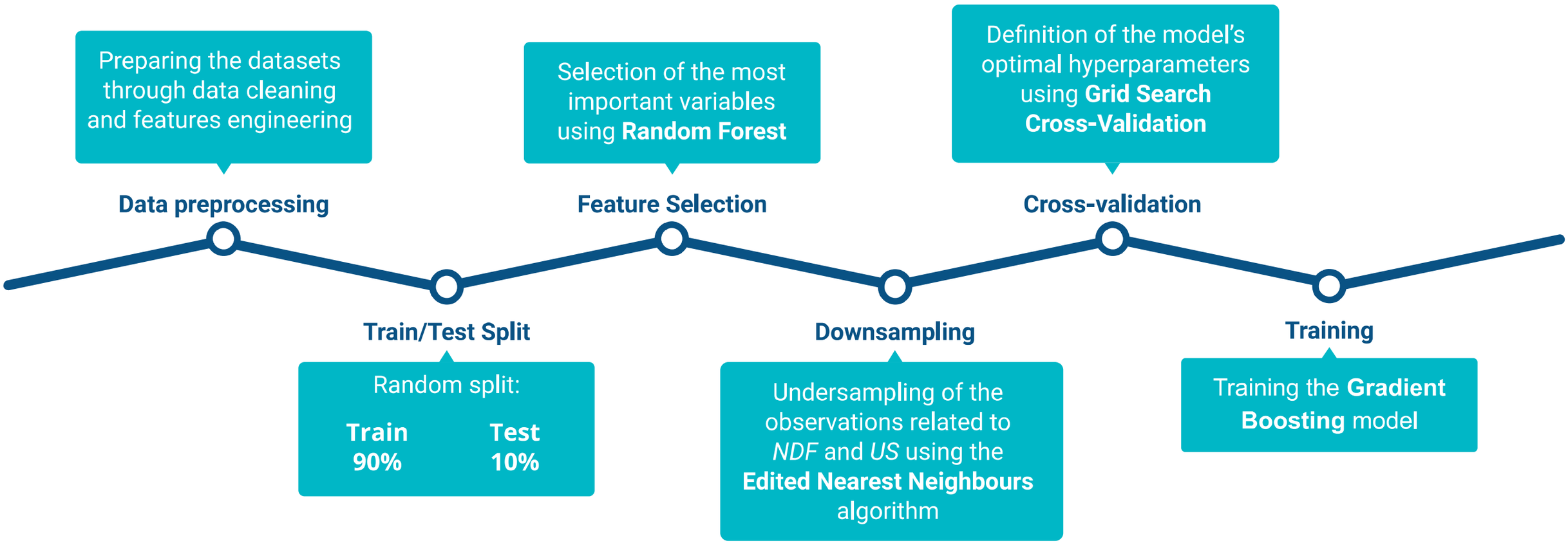
Datasets creation

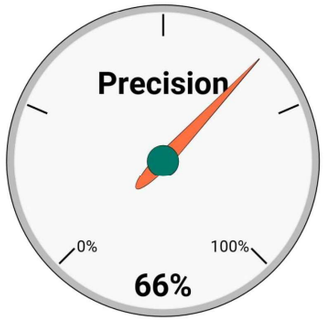


Approaching the problem



Results

Test set confusion matrix



The model is right 66 times out of 100 when it predicts an NDF

The model is able to intercept 89 TRUE NDF observations out of 100

True \ Predicted								NDF			US	other
	0	0	0	0	0	0	0	34	0	0	15	0
	0	0	0	0	1	0	0	80	0	0	44	2
	0	0	0	0	0	0	0	67	0	0	41	1
	0	0	0	0	1	0	0	145	0	0	89	0
	0	0	0	0	2	0	0	332	0	0	168	8
	0	0	0	0	2	0	0	168	0	0	75	2
	0	0	0	0	2	0	2	185	0	0	79	1
NDF	0	0	0	0	7	0	1	11062	0	0	1324	40
	0	0	0	0	0	0	0	50	0	0	32	1
	0	0	0	0	0	0	0	12	0	0	7	1
US	1	0	0	0	7	0	0	3871	0	0	2302	55
other	0	0	0	1	2	0	0	667	0	0	336	21

Results

User	P1	P2	P3	P4	True
q9p###	US	other	NDF	GB	other
9bz###	NDF	US	other	GB	US
kux###	NDF	US	other	AU	US
qqn###	NDF	US	other	FR	NDF
nw9###	NDF	US	other	FR	NDF
oop###	NDF	US	other	FR	IT
a62###	NDF	other	US	FR	NDF
611###	NDF	other	US	FR	FR
qbs###	NDF	US	FR	other	US
f2k###	NDF	US	other	FR	US
...	...	...	...	...	...

Ranking

The table contains:

User - user name (partially hidden)

P1_P4 - the first 4 predictions per user ordered for descending probability

True - the true destination of the user

In the sample extracted, the model gives a good ranking to the true destination of **9 users out of 10**. In all the test population, the ratio is **9.4 out of 10**.

Therefore, the model can give an accurate list of (few) probable destinations.

Conclusion

Summary

Pediction	Ranking	Recommendation
The model does not seem to be able to distinguish between the most frequent observations (*NDF*, *US* and *other*) and all the other destinations...	Anyway, when considering the **ranking** for probabilities, we observe a very accurate list of potential destinations.	If the purpose of this analysis is to guide a targeted marketing campaign, **we highly recommend focussing efforts and resources on the first 4 countries predicted per user.**

Possible improvements

It looks clear how limiting the sessions data to 6 months only of the same year affected all the training process and its results. If that limitation is due to the need of keeping the size of the files low, it may be the case to limit the extraction of the users' data to one year only but to extend that of the online sessions to the same period of time.