**Explore Data:**

* Inspect data and it features
* Compute descriptive statistics
* Use data visualization to help identify significant patterns and trends in the data

**Questions to answer (& hypotheses to check):**

1. How does the title of an article affect its shares?
2. When are most articles published?
3. Which channel content are users more interested in reading?
4. Should the content be positive, negative or neutral?
5. Are linear models appropriate for usage here?
6. What are the most important parameters that affect shares number?
7. What is the best criterion for comparing models? (BIC, Cp, adjusted R^2?)

**Not done**

**Done**

**Taken (In process)**

**Tasks:**

1. Nan check + Infinity check
2. Check histograms distribution
3. Root transform to skewed cols (to fix skewness)
4. Find and plot columns with outliers (IQR analysis)
5. Do IQR filtering (Remove the observations with the outlier value in case of features with rare outliers ) and (log transformation in case of features with many outliers)
6. Remove features where most values are constant, remove unreasonable observations
7. Top down / down top model selection
8. Trying log transform for Y and write down the effect (tried full model with log(Y) 🡪 R^2 became better, from 0.11 to 0.17, and residual plot became better) (In this case this is a Poisson GLM model, and we should compare linear selected model with this GLM)
9. Analyze scale-location plots and residual plots of models (script #3)
10. Check the interaction effects between different variables (script #3)
11. Apply anova, ancova tests, figure it out
12. When we prepare all models (top-down selected, down-top, GLM, …) – compare all of them on validation set and present final results on the test set
13. Apply the following models Logistic regression, KNN, SVM, Random forest and compare all of them on test set.