

# WEB/JEE Programming Projet:

## Tech-Gadgets Recommendation Platform



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# Introduction

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## Intro





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## General Context

Idea, Needs, objectives ...



## Problem and Idea

Several people are in need of tech devices and gadgets  
But they have little to no technical knowledge.

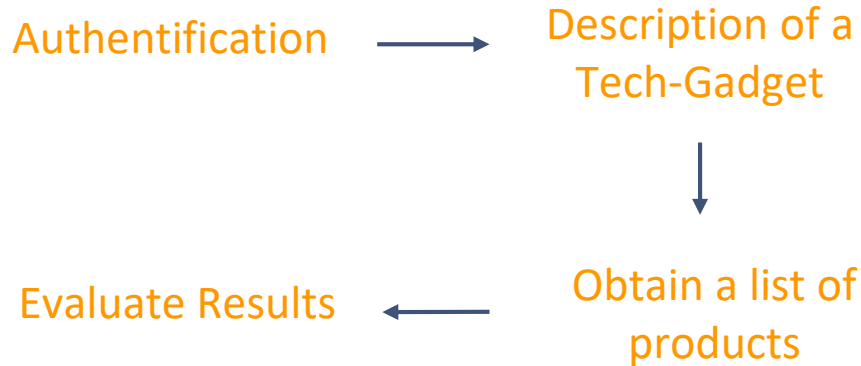


Create a web app that recommends Tech-Gadgets!



# Functional requirements

**User**



**Guest**







## Non Functional requirements

**1- User experience**

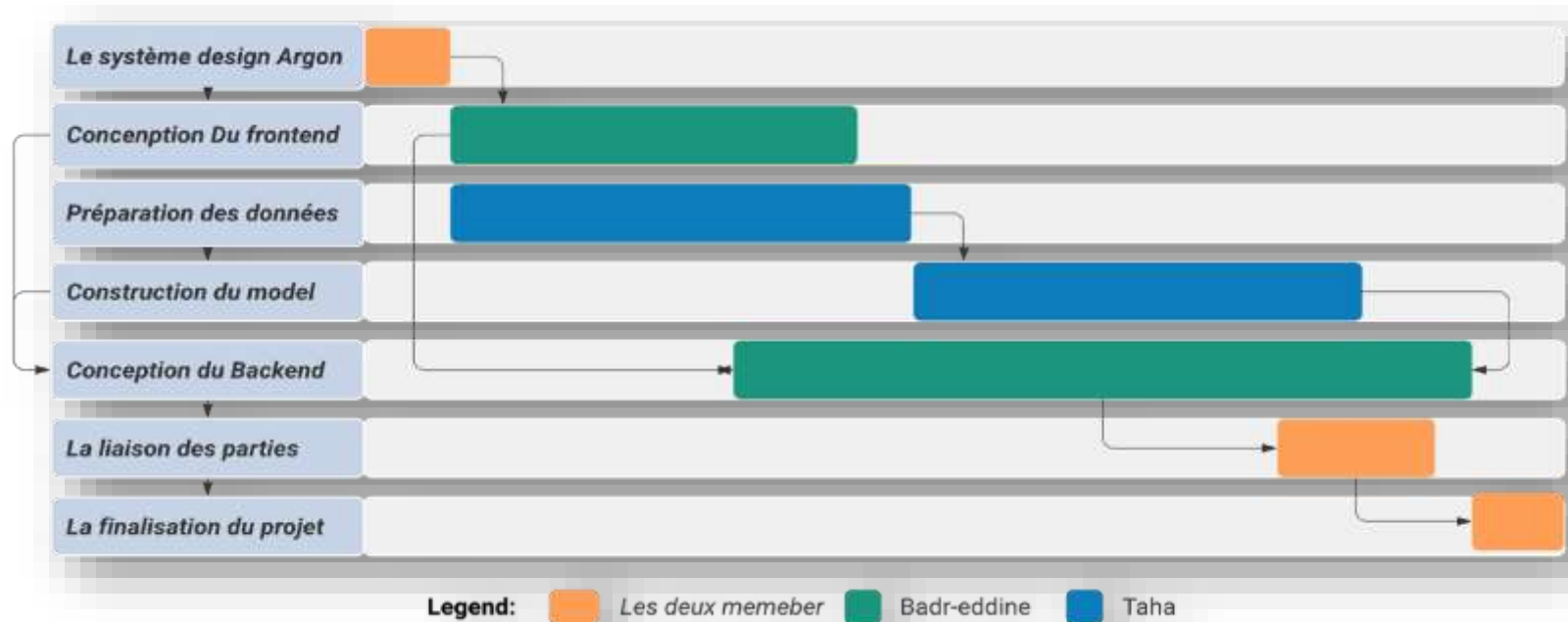
**3- User adaptable**

**2- Progressive learning**

**4- Confidentiality**



# Planning



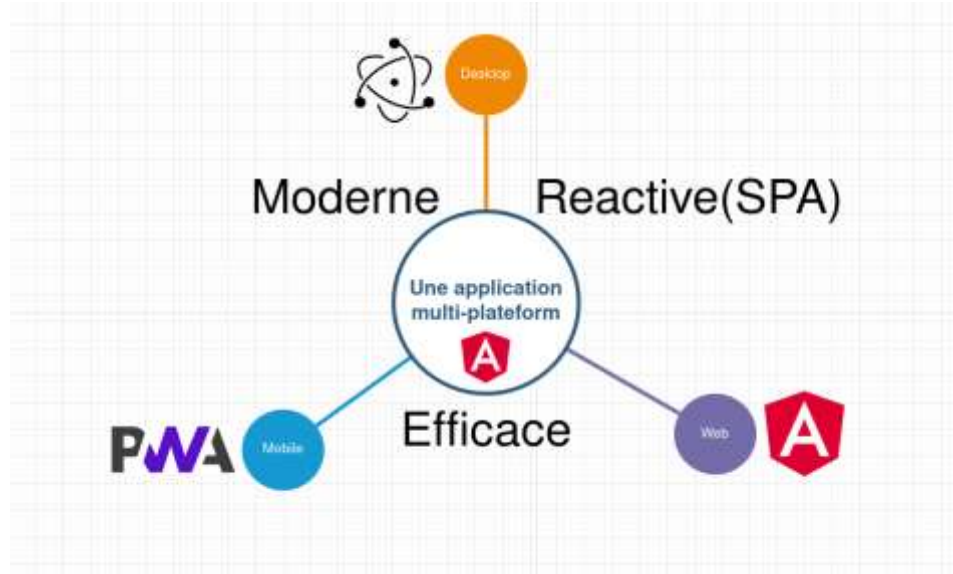
# 3

## Frontend

Development Tools, Interfaces ...



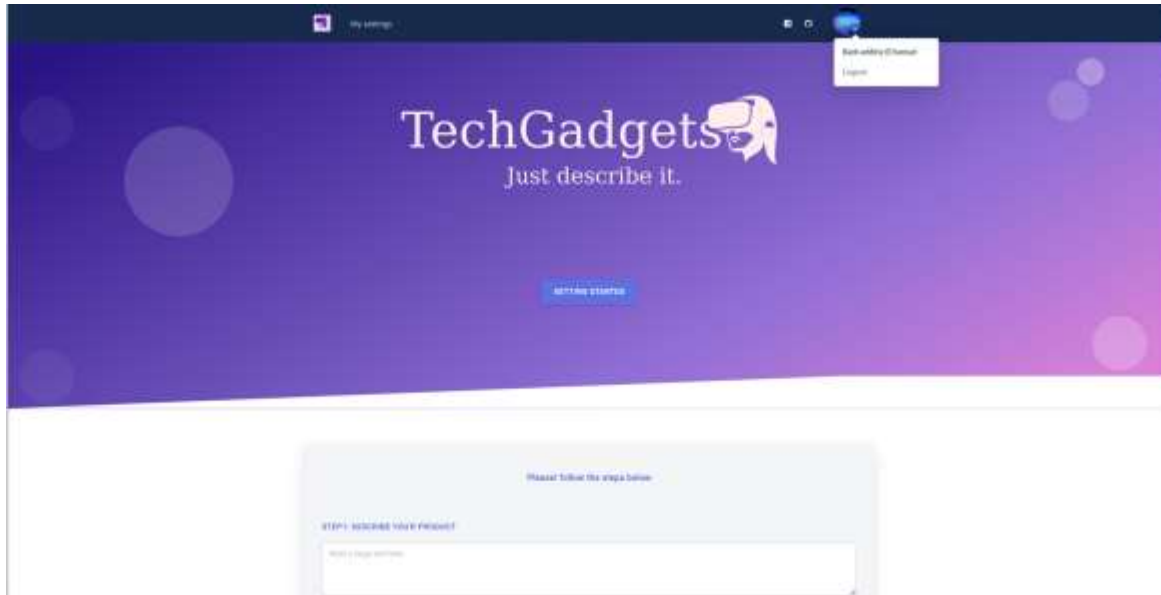
## Problem, solution and Tech-stack choice





## Responsive Platform

### Significante Logo and Colors.






## User Interface ( Main dashboard )

Please! follow the steps below

STEP1: DESCRIBE YOU'R PRODUCT

Write a large text here ...


STEP2: IN WHICH WEBSITE YOU WANT TO SEARCH ?



amazon

A greate e-commerce website check it if you want


☐



Ali-express

A greate e-commerce website check it if you want


☐



Jumia

A greate e-commerce website check it if you want

☐



Ebay

A greate e-commerce website check it if you want

☐


SEARCH

Please! follow the steps below

STEP1: DESCRIBE YOUR PRODUCT

Write a large text here ...

STEP2: IN WHICH WEBSITE YOU WANT TO SEARCH ?

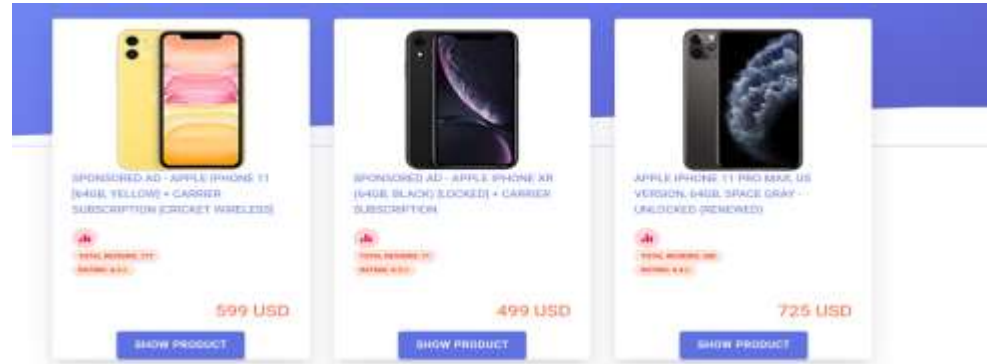


amazon



## User Experience

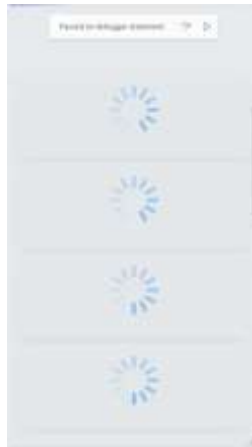
### UI indicators to guide the user





## User Experience ( Mobile )

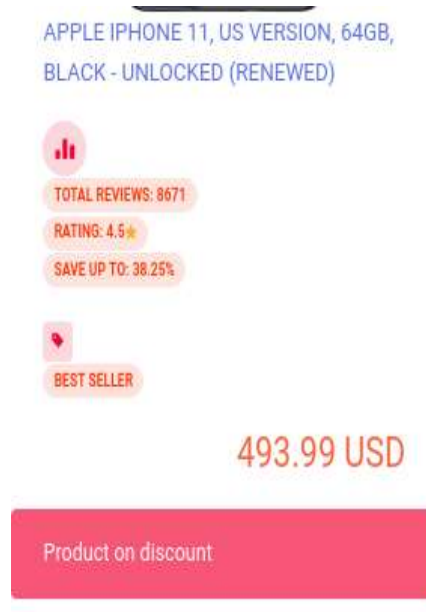
### Indicateurs UI pour guider l'utilisateur(Mobile)







## User Interface ( tags )



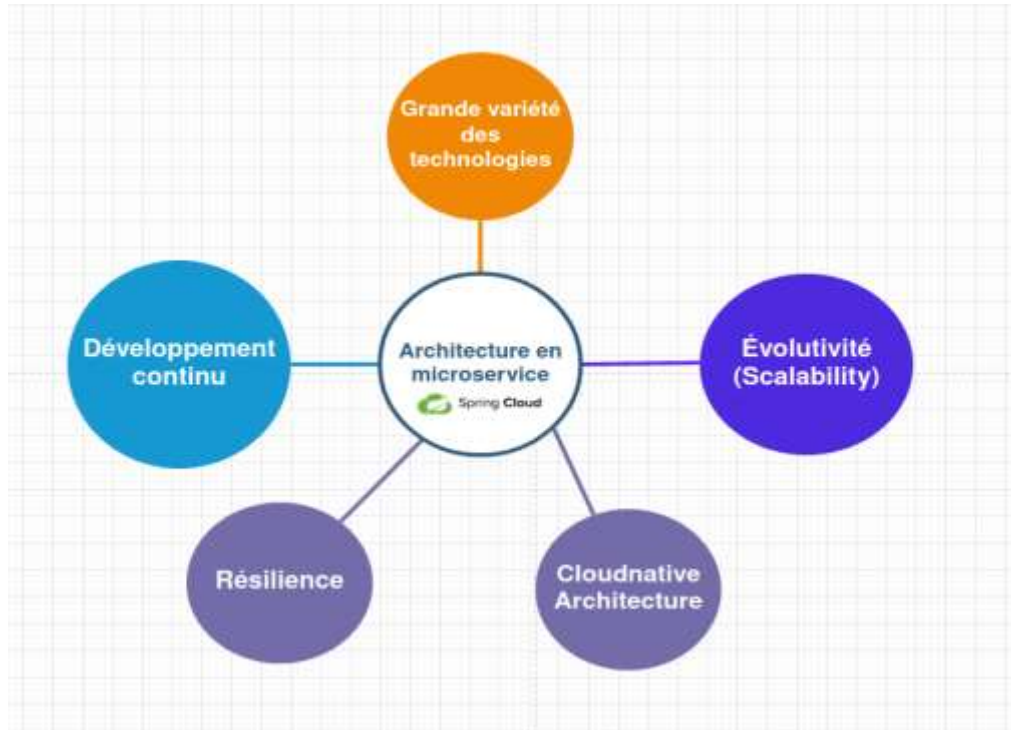
# 4

## Backend

Development Tools, Architecture...



# Backend Architecture



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# Machine Learning

Data Preparation, NLP ...

# Discovering our Data

## Sample from metadata Dataset

```
{
  "category": [
    "Cell Phones & Accessories",
    "Cases, Holsters & Sleeves"
  ],
  "tech1": "",
  "description": [
    "",
    "Elegant Butterfly Case 3D Pattern Back Cover Case Skin For Apple iPhone 5 5G",
    "Ultra light weight case",
    "Elegantly designed with 3D cutout effect",
    "Super rich rubber coating"
  ],
  "fit": "",
  "title": "MinisDesign 3d Bling Crystal Bow Transparent Case for Apple Iphone 4 and 4s-Pink",
  "tech2": "",
  "brand": "ELEGANT",
  "feature": [
    "Fashionable with unique 3D butterfly design for the iPhone 5 from others",
    "Precise cut design with access to all ports and features of the iPhone 5",
    "Dirt-resistant Butterfly Case for iPhone 5 with 3D PC Cover",
    "Design: Simple hard back case, Luxury and classical butterfly",
    "3D art design. Creative 3D butterfly design"
  ],
  "rank": [
    ">#228,544 in Cell Phones & Accessories (See Top 100 in Cell Phones & Accessories)",
    ">#114,920 in Cell Phones & Accessories > Cases, Holsters & Clips"
  ],
  "main_cat": "Cell Phones & Accessories",
  "similar_item": "",
  "date": "",
  "price": "",
  "asin": "7508492919",
  "imageUrl": [
    "https://images-na.ssl-images-amazon.com/images/I/41Wol0yPcXL._SX38_5Y50_CR,0,0,38,50_.jpg"
  ],
}
```

## Dataset source

## Sample from review Dataset

```
{
  "overall": 5.0,
  "verified": true,
  "reviewTime": "08 4, 2014",
  "reviewerID": "A24E35XTC62LJI",
  "asin": "7508492919",
  "style": {
    "Color": "Bling"
  },
  "reviewerName": "Claudia Valdivia",
  "reviewText": "Looks even better in person. Be careful to not drop your phone so often because the rhinestones will fall off (duh). More of a decorative case than it is protective, but I will say that it fits perfectly and securely on my phone. Overall, very pleased with this purchase.",
  "summary": "Can't stop won't stop looking at it",
  "unixReviewTime": 1407110400
}
```

## Dataset Cleaning

asin	category	description	title	brand	feature	rank	details	similar_item	price	imageURLHighRes	review_text	helpfulness
7508492919	['Cell Phones & Accessories', 'Cases, Holsters,...	['Elegani Butterfly Case 3D Pattern Back C...	MinisDesign 3d Bling Crystal Bow Transparent C...	ELEGANI	['Fashionable with unique 3D butterfly design ...	['>#228,544 in Cell Phones & Accessories (See ...	{}	NaN	NaN	['https://images-na.ssl-images-amazon.com/imag...	good I guess I've got what I paid for, at \$2.4...	0.02
8288853439	['Cell Phones & Accessories', 'Accessories', '...	['Samsung Official OEM Travel Wall Charger for...	Samsung Official OEM Travel Wall Charger for y...	BlackBerry	['Safely charge your phone from your car using...	['>#494,589 in Cell Phones & Accessories (See ...	{}	NaN	NaN	['https://images-na.ssl-images-amazon.com/imag...	Galaxy S4 Charger This Charger is awesome! Fir...	0.04
8288878881	['Cell Phones & Accessories', 'Accessories', '...	['Safely charge your phone using the original ...	Samsung Galaxy S2 Phone OEM Official Travel US...	Samsung	['Safely charge your phone using the original ...	['>#245,551 in Cell Phones & Accessories (See ...	{}	NaN	NaN	{}	Quick and perfect! Received it promptly and it...	0.08
8288878881	['Cell Phones & Accessories', 'Accessories', '...	['Safely charge your phone using the original ...	Samsung Galaxy S2 Phone OEM Official Travel US...	Samsung	['Safely charge your phone using the original ...	['>#245,551 in Cell Phones & Accessories (See ...	{}	NaN	NaN	{}	It charges, but it doesn't sync with my laptop...	0.03
8288878881	['Cell Phones & Accessories', 'Accessories', '...	['Safely charge your phone using the original ...	Samsung Galaxy S2 Phone OEM Official Travel US...	Samsung	['Safely charge your phone using the original ...	['>#245,551 in Cell Phones & Accessories (See ...	{}	NaN	NaN	{}	Not as nice as I thought it would be in a nuts...	0.02

# Text Preprocessing

```
In [200]: cln_phone_reviews['clean_text'] = cln_phone_reviews['review_text'].map(lambda text: normalize_and_lemmatize(text))
print(cln_phone_reviews['review_text'][0])
cln_phone_reviews['clean_text'][0]
```

good I guess I've got what I paid for, at \$2.49. It (the phone charger) arrived undamaged, but it doesn't work at all. I'd give the product NO stars cuz A phone charger that isn't functioning is worthless u gotta gimme my money back.

```
Out[200]: 'good guess get pay phone charger arrive undamaged doesnt work would give product no star cuz phone charger not function worthl
ess u get give money back'
```

```
In [198]: print (cln_phone_reviews.head(19))
```

	review_text	clean_text
0	good I guess I've got what I paid for, at \$2.4...	good guess get pay phone charger arrive undama...
1	Galaxy S4 Charger This charger is awesome! Fir...	galaxy charger charger awesome first wasnt exp...
2	Quick and perfect! Received it promptly and it...	quick perfect receive promptly work perfectly ...
3	It charges, but it doesn't sync with my laptop...	charge doesnt sync laptop although charge albe...
4	Not as nice as I thought it would be In a nuts...	not nice think would nutshell not oem charger ...
5	Works as expected I just wanted a charger like...	work expect want charger like original one gal...
6	it works and it looks cool too it works and th...	work look cool work cool blue light neat help ...
7	seems good. sorry i'm not super exited, it is ...	seem good sorry im not super exit phone charge...
8	Nice case, suits my Mom's needs perfectly. I b...	nice case suit moms need perfectly buy case mo...
9	I love them because the "I had a dead battery"...	love thehem dead battery excuse buy go childre...
10	OK Not as good as my old Mophie ... Sorry Powe...	ok not good old mophie sorry powerbear nice pr...
11	Excellent charger This device works well on my...	excellent charger device work well htc high qu...
12	PowerBear iPhone 5c Great product for the mone...	powerbear iphone c great product money really ...
13	Works great! I am a real estate agent and when...	work great real estate agent work great real e...
14	So far, so good... I bought this for my 15 yea...	far good buy year old daughter take school tri...
15	Five Stars Awesome charging case!! I've refer...	five star awesome charge case refer lot friend...
16	Does not work I read the comments on this item...	not work read comment item negative smartphone...
17	Good for the car A good inexpensive cable that...	good car good inexpensive cable work like orig...
18	CHEAP and works perfectly I bought this recent...	cheap work perfectly buy recently not expect m...

# Text Preprocessing

text	
0	went run yesterday
1	love running outside summer

Stemming



text	
0	went run yesterday
1	love run outside summer

text	
0	went run yesterday
1	love running outside summer

Lemmatization



text	
0	go run yesterday
1	love run outside summer



# Aspect Based Sentimental Analysis

```
In [64]: user_description="I want a pink phone. that takes beautiful pictures. A nice big screen. And I want the battery to be really good"
print("the review text is: ",user_description)
print("these are keywords:", keywords_extraction(user_description))
Classify_and_stats(user_description)
```

```
the review text is: I want a pink phone. that takes beautiful pictures. A nice big screen. And I want the battery to be really good
these are keywords: ['pink', 'phone', 'beautiful', 'pictures', 'big', 'screen', 'good', 'battery']
```

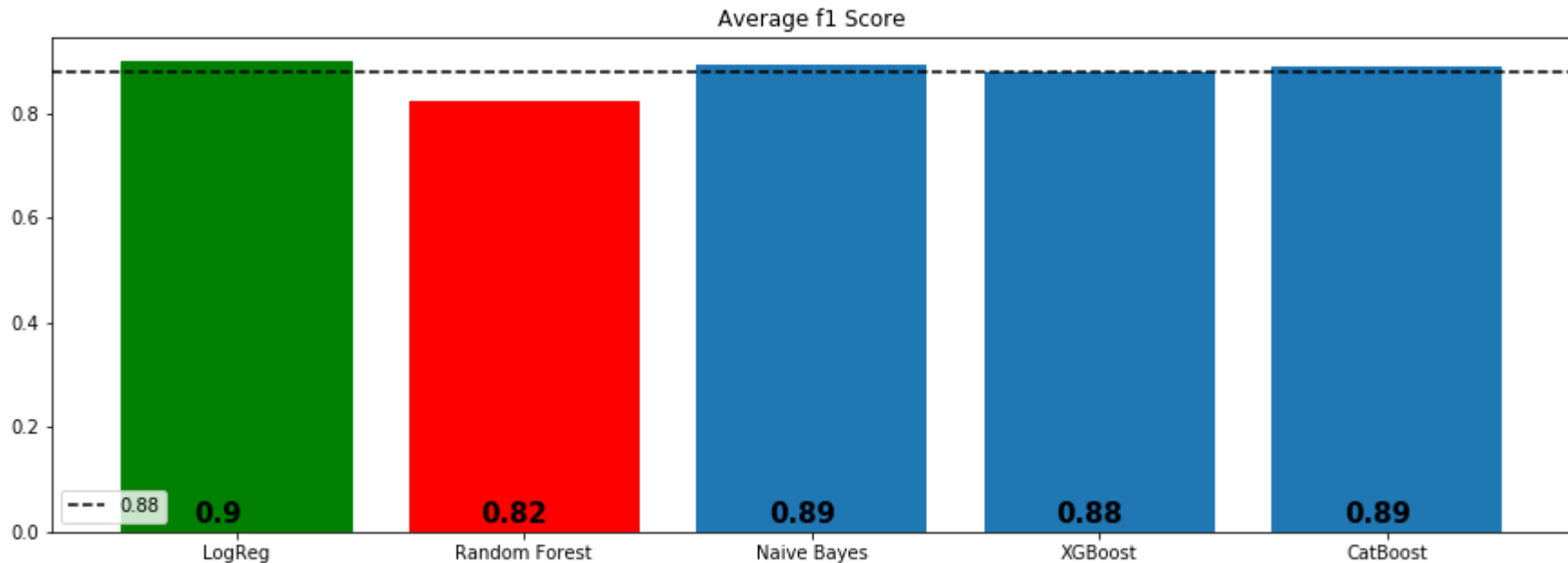
```
Out[64]: [{0: Sentence("I want a pink phone."),
  'aspects': 'phone',
  'description': 'pink',
  'stats': Sentiment(polarity=-0.1, subjectivity=0.3),
  'classify': 'positive'},
 {1: Sentence("that takes beautiful pictures."),
  'aspects': 'pictures',
  'description': 'beautiful',
  'stats': Sentiment(polarity=0.85, subjectivity=1.0),
  'classify': 'positive'},
 {2: Sentence("A nice big screen."),
  'aspects': 'screen',
  'description': 'big',
  'stats': Sentiment(polarity=0.3, subjectivity=0.55),
  'classify': 'positive'},
 {3: Sentence("And I want the battery to be really good"),
  'aspects': 'battery',
  'description': 'really good',
  'stats': Sentiment(polarity=0.7, subjectivity=0.6000000000000001),
  'classify': 'positive'}]
```

# Model Construction

- 1. Feature Engineering and Selection** (Words2Vec)
- 2. Data Preprocessing** (Splitting Dataset into Train and Test Set)
- 3. Selecting the Right Evaluation Metric**
- 4. Modelling**

# Model Construction

## Models with CountVectorizer Bag of Words





## Development tools



python™



jupyter



PyTorch



NLTK



pandas

# 6

## Demo



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Conclusion



**Thanks for your  
attention!**

