

AI

AI involves machines that can perform tasks that are characteristic of human intelligence.

- Planning
- understanding language
- recognizing objects and sound
- learning
- problem solving

AI
 → general → would have all characteristics of human intelligence.
 → narrow →

some facet(s) of human intelligence and can do that facet extremely well. but is lacking in other areas. eg. a machine that's great at recognizing images but nothing else.

cognitive computing : coined by IBM

A system that mimics human thought processes to arrive at conclusions.

Machine learning

A system that can learn about the world around it without being explicitly programmed to do so.

" * Computing power doubles every 2 yrs "

— Moore's law

- Google compute engine

Talk18 is a company that monitors sales and customer service phone calls, turns the talk into text and then scans the words in real time for keywords and patterns that predict whether a company is headed for a good outcome, a new sale, a happy customer.

- * machine learning is a way of achieving AI ability to learn without explicitly being programmed
- * AI without machine learning would require building millions of lines of codes with complex rules & decision trees.
- * Training the machine. Training involves feeding huge amounts of data to the algorithm and allowing the algorithm to adjust itself and improve.

ML - Machine Learning

ML uses statistical techniques to improve computer system performance based on various data without or with minimal human intervention.

Virtual assistance - A virtual assistant is a software agent that uses cognitive computing to offer customers 24/7 when using websites or searching for info.

2. Alexa. - smart speaker - device - device name
wake up word - alexa
amazon echo
features - voice interaction, music playback, making todo
list, setting alarms, streaming podcasts, playing audiobooks,
providing weather & traffic updates (19% usage in US)

3. Google assistant - virtual personal assistant
device - mobile / smart phone - chat - Google Allo
smart home devices - home smart speakers

activation word - OK google ~~alexa~~ ← launched in 2016
waking up word

users primarily interact with G.A. through natural voice
though keyboard input is also supported. Uses - search intent,
sched. events & alarms, adjust hardware settings on user's device,
show info from user's google account.

4. Apple's Siri (34% usage in US)
(smart phone) 4S ~~in~~ in 2011
1st installed on iPhone

Voice queries through natural language
user interface. The software adapts to user's
individual language usages, searches and preferences
with continuing use. Launched in 2010.

5. Microsoft Cortana (4% usage in US)
- device - windows based → P.C.
→ smartphone
→ smart speakers.

Amazon Echo - smart speakers by Amazon.

Siri Bixby - Virtual assistant by Samsung
Bixby voice
Bixby Vision - camera - augmented reality camera
that can identify objects in real time.
Bixby Home

6. Facebook's M
Virtual assistant by Facebook
2015-17 Jan 18 M was shut
reading chats and suggesting products,
features adding

7. Google Allo ^{subset of.} → Google Assistant, Google's
messaging app. voice activated speaker
Google Home.

8. WeChat - messaging & social media
app - Chinese

9. Apps - like. - Dem from Domino's Pizza

Cortana - V.A. by Microsoft for Windows
Phone.
- answer search questions from Bing Search
engine, recognise natural voice, set reminders
10. Smart watches / Wear OS

11. Google Now: a feature of Google Search
Google Now evolved to become
Google Assistant

Watson by IBM

↓
Question answering computer system
capable of answering questions posed in
natural language.

- Quiz show Jeopardy - 2011 - Watson
contested against legendary human
champions and won with 1st prize.

→ usage of Watson - 1st use - healthcare
industry

at Cancer center
~~hos~~ in New York city. ← [nurses receiving
guidance from
Watson

→ fashion - dress changing colour. based
on the mood of the audience.
through twitter feeds.

→ ~~chat~~ dialog systems. → customer service

- ① E-commerce via ~~cat~~ chat, order tracking
Rare Carat (NYC based startup) to assist buyers through purchasing a diamond.
- ② analytics
- ③ communication → push notifications, purchase confirmations, ship info and promotion
- ④ customer support — replacement for call centre
- ⑤ ~~cat~~ design
- ⑥ education — provide info., read audiobooks.
- ⑦ entertainment — play music, play videos, T.V., movies, streaming
- ⑧ games — Toys. (Cogni Toys) from Netflix
- ⑨ HR → applying for a sick leave (Mila)
↑
name of not.
- ⑩ marketing
- ⑪ news.
- ⑫ social.

conversational UI

An interface based on a holistic ~~style~~ system of functional, adaptive and meaningful messages exchange, in which both sides of conversation use and interpret the language codes, complying with the ~~constructs~~ constitutive and normative rules in a friendly, informal way.

Note

A chatbot's role can be similar to a shop assistant or a waiter.

Aim 1 To understand user needs.

Chatbot - 90% of the time we spend on mobile is on email or messaging platforms. It's the perfect way to get your application closer to the user. There's no install needed, no unsecured ads. To obscure websites, it's just the user and a messaging platform like FB messenger, Telegram, skype where the bot lives.

⑤

Conversational UI

Conversational AI

understand and respond to humans.
natural language processing (NLP)

What does a chatbot do?

→ imitate humans convincingly.
→ evaluates and responds to user input.

Facets of a bot

→ what does a user want the bot to understand
→ Personality: Tone/vocab of the bot.

Method of communication

auditory
eg alexa, amazon echo, Siri

textual
Text

} - online chat & instant messaging

Taking and/or uploading images

eg Samsung Bixby

Turing test
to verify.

* In 2016, Facebook messenger allowed developers to place chatbots on their platform.

Chatbot Design] - subset of conversational design.

A process that defines interaction between the user and the chatbot

- defining chatbot personality

- the questions that will be asked to the users.

- overall interaction.

process includes - user testing

Google Allo - Instant messaging mobile app launched 2016

Google Duo - video calling

☺

Tools for building bot :- Motion.ai, Rebot.me, Chatfuel

- Text based interface

Principles while designing for bot-

- handle most common types of conversational randomness (meaning f*cks and ----)
- Convey brand's character
- raise user curiosity and liking / ~~more~~ may be some other aim in another use case.

Q. what is communication?

★ Principles of communication

communication is a process of sharing meaningful messages.

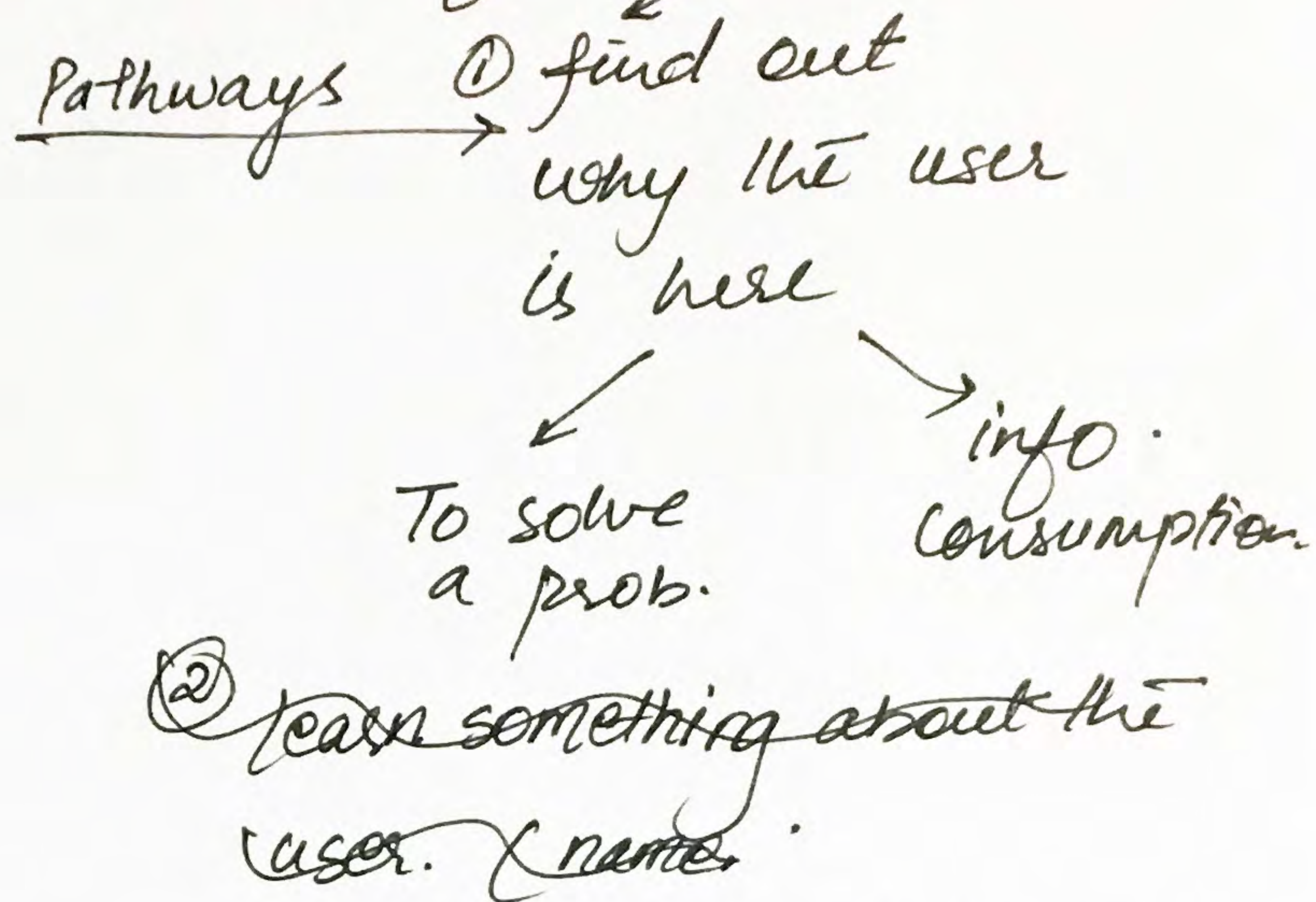
Types of communication

- verbal - language
- non-verbal - gestures
facial expressions
tone of voice
emoji's / actions

Conversation: is a talk between two or more people, usually an informal one

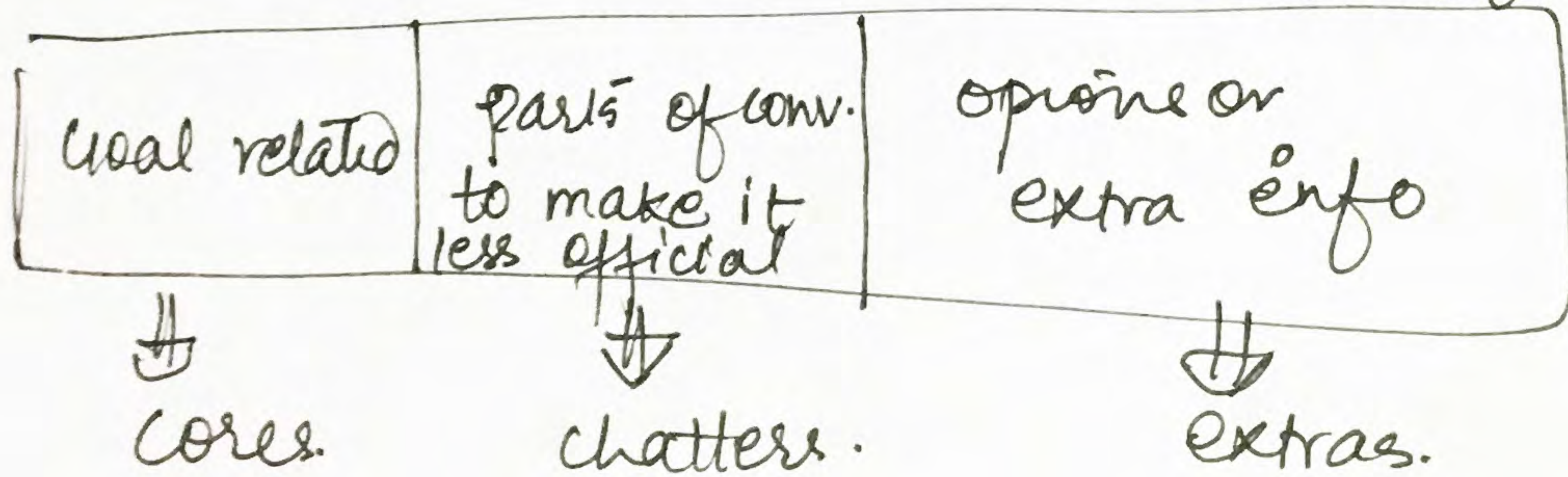
General aims of a chatbot / chatbot goals

1. To express the company's brand character.
2. To provide the user with the info.

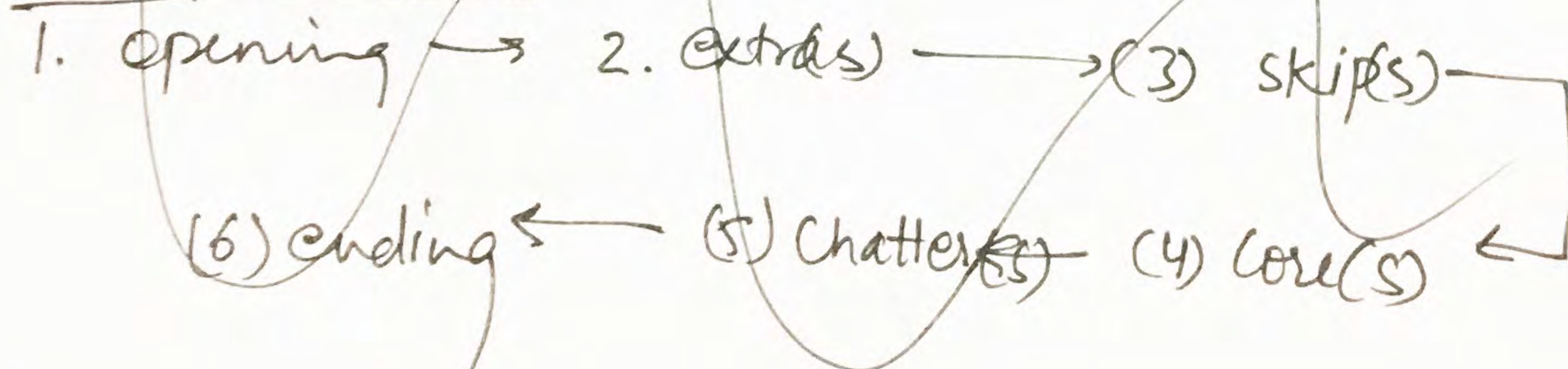


3. To make the conversation pleasant and meaningful for the users.

parts of a conversation $\Rightarrow$ a good script should let you create different scenarios of the conversation



Script blocks



script block / example of simple conversation frame timeline.

opening



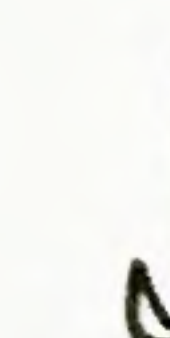
extra



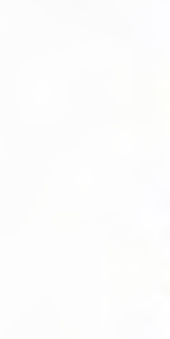
skip



core



chatter



core



core



chatter



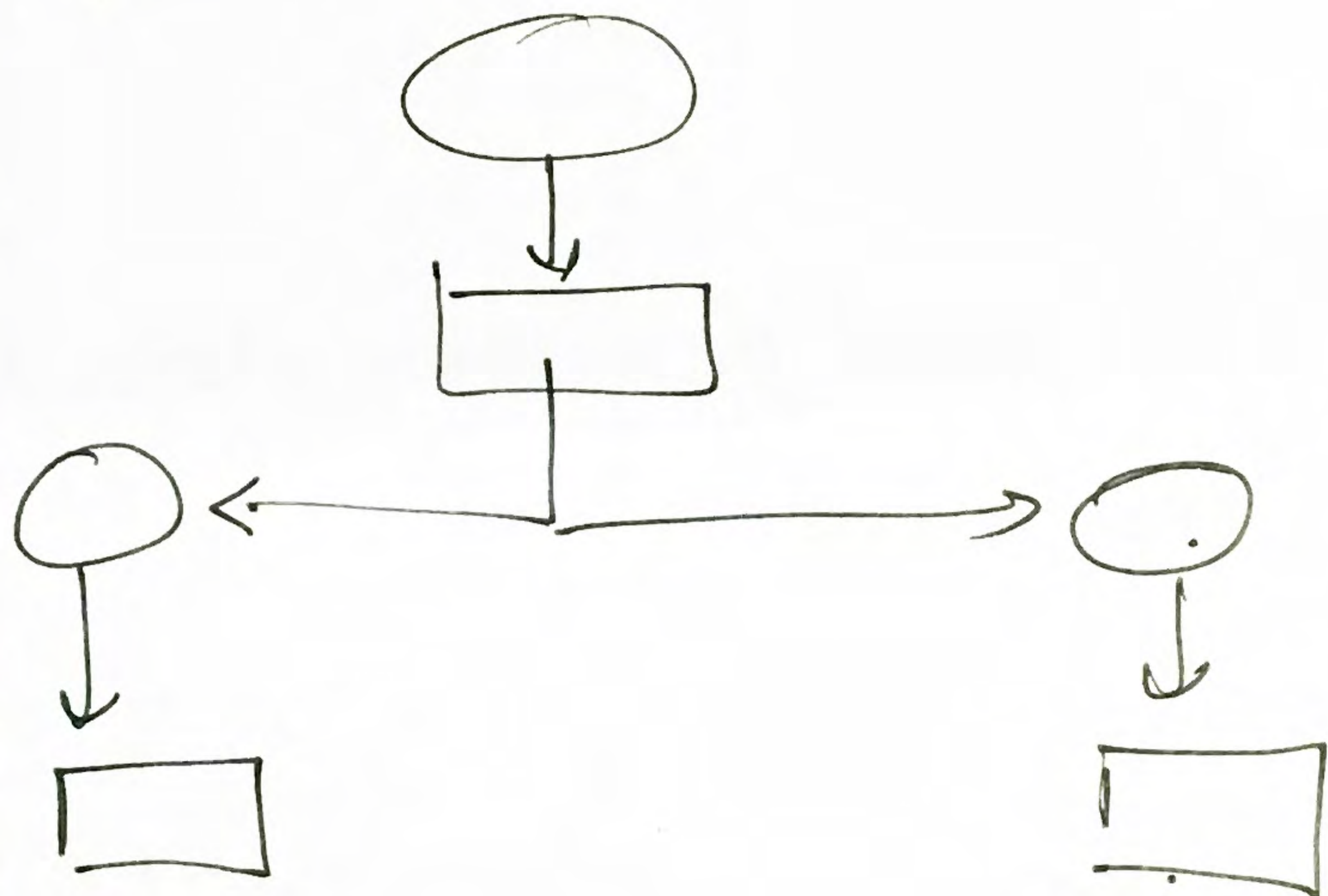
Ending
~~Begin~~

conversational flow diagram

○: user input

□: bot response.

⋮



example

opening block.

Hi there

I'm cody and I'd love to chat with you.

Hi cody

How are you today?

well... could be better

Bad day, huh? That happens...

extras.

I hope you don't mind I use cookies

what are these?

My breakfast!

Haha, poor joke

cookies are data about you stored by a browser.

Sounds creepy but hmn... ok

Great!

Skip

Hello there!

You seem familiar

Have we met?

Yes we have.

Ha! I've got good memory!

Last time we talked about Magento development

Do you want to cont. our conv.?

Let's continue.

Core

Tell me about you

_____.

with pleasure

Do you want to know
where I come from?

or

my story

or

_____.

where do you come from?

well the it - _____

A good script should let you create diff. scenarios of the conversation.

[{ (Good morning) | Hello | Hi }, friend, { I'm | my name's } Cody]
→ script notation / syntax notation

{ } = define a set of options.

| = separates the options in a set.

() = specify the condition-related options in a set.

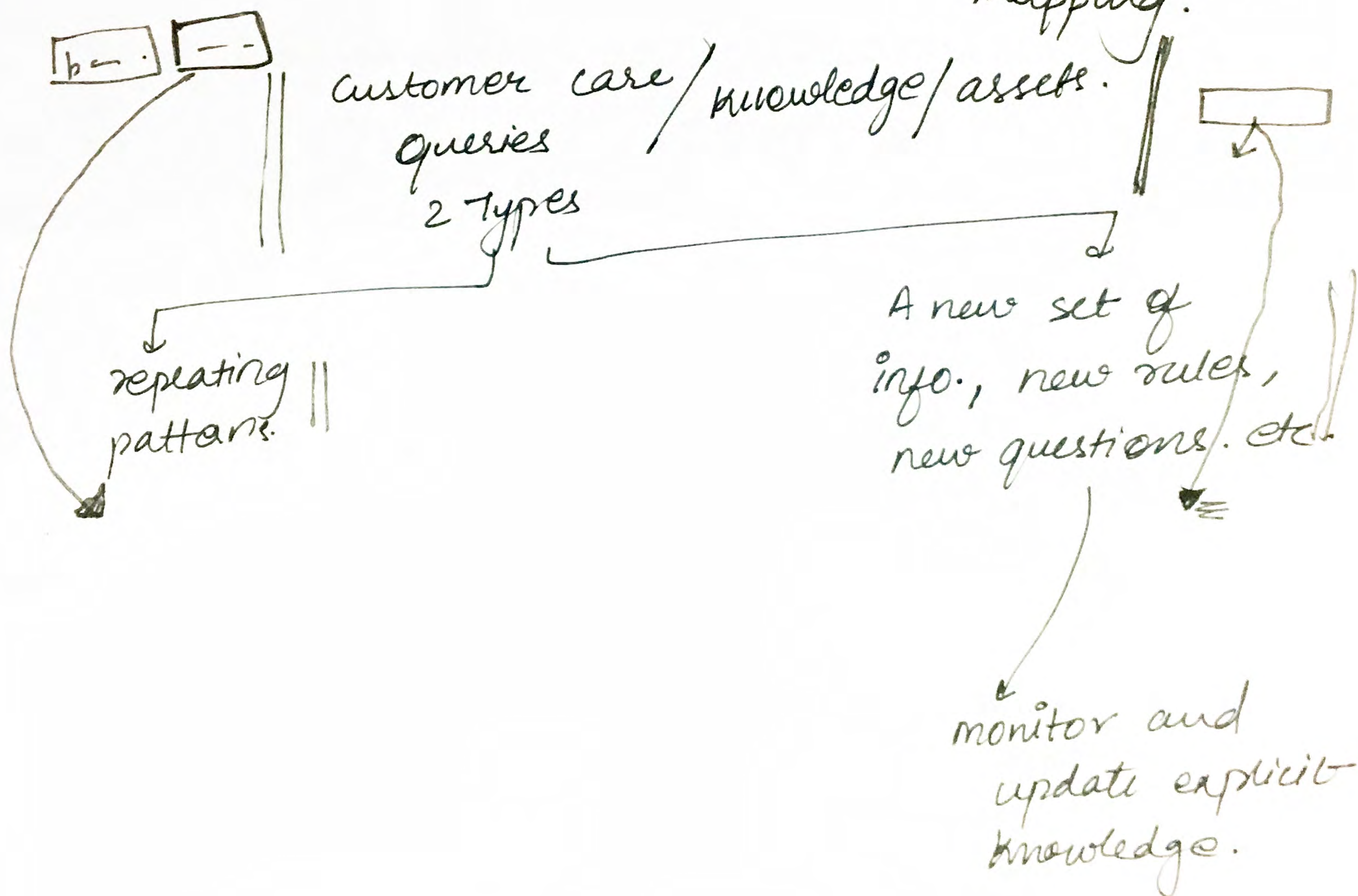
[] = indicate user input.

[{ (Good evening) | Hi | Hello | Yo }, { my name's | I'm } Cody.
What's your name?
My name is [only letters]]
→ syntax notation.

Training chatbots = ~~know~~ one should know which assets or knowledge to transfer to the bots.

→ process.

↓
identification of knowledge is known as knowledge mapping.



note: development of knowledge base resulting
from collective experience and collaboration.

When training our chatbots, who in the
organization is assigned to do it? would
this person hold all the knowledge of all
the areas that is required? so why
not collaborate on knowledge creation
and keep it cyclic.

Einstein Email Insights uses NLP to parse the contents of sales reps' emails and tell them what they need to respond to, plus why that particular msg is important.

Einstein Intent and Einstein ~~st~~ sentiment

They use NLP to classify whether the text of a msg is emotionally +ve or -ve. ~~and determine~~ and determine what the intent of the msg is respectively.

Einstein object detection

~~classify objects, to identify objects in an image and then~~
is designed not only to detect and classify objects but also to identify different objects in an image and their location. - like

Decision management

Automated decision support relies on the ability of rule-based systems to make decisions for repetitive management problems without human involvement.

usages - transport management systems
online recruitment systems.

Natural language generation

This technology is aimed at analysing data and transforming it into human readable text. That's what Forbel does to produce company earnings reports & Environment Canada's app for weather forecast & compilation.

- Talk 18 analysis customer conversations
- uses
 - Automatic speech recognition (ASR) and NLP - Natural language Processing to ~~not~~ reveal hidden trends, recommend actions and predict call outcomes in real time, live during the conversation.

Realtime resolution.

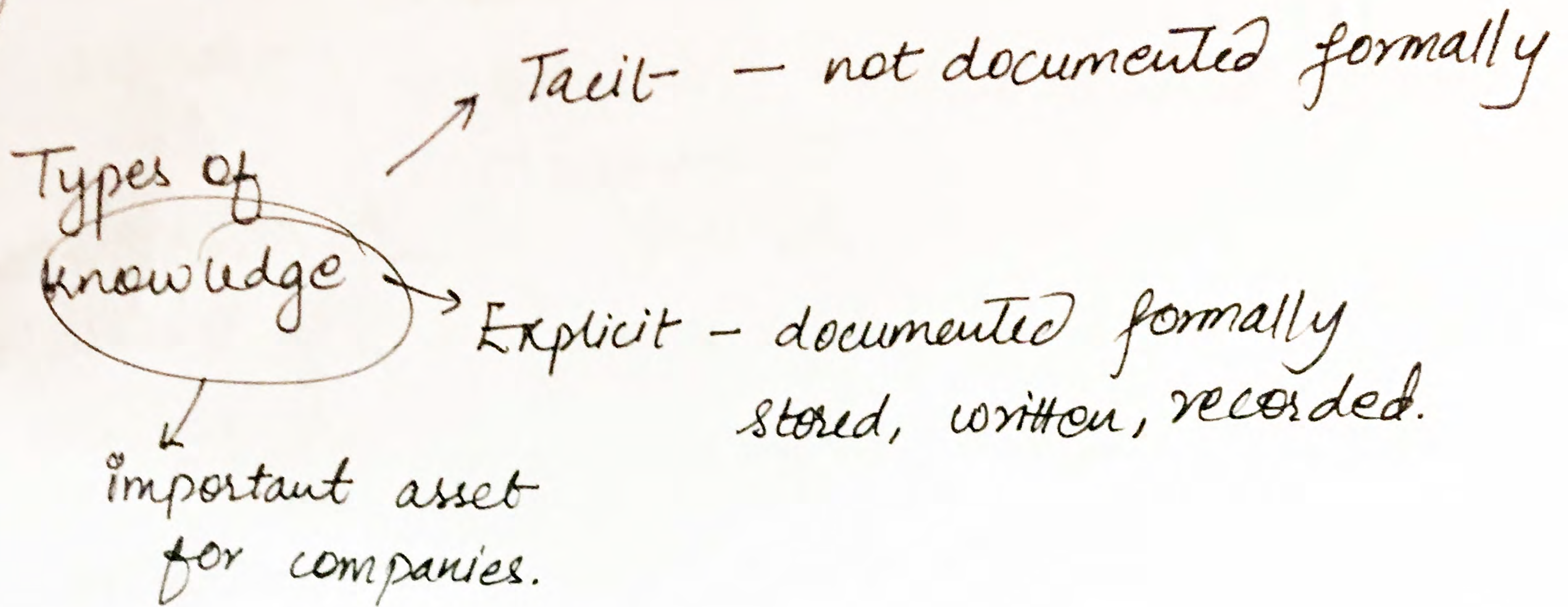
Tools that identifies every objection, indicator of purchase intent and insight into customer motivation that arise during calls.

See what's happening and how to handle it without missing a beat.

Active learning pipeline to ensure Talk 18 continuously learns what matters to the business.

Talk 18 found it was twice as accurate as Watson and 3X as accurate as Google.

Knowledge management



Knowledge conversion process: Transforming tacit knowledge into explicit.

Training chatbots = Knowledge Transfer.

by using explicit knowledge.

→ Goals of knowledge management

To properly identify, collect, organize and disseminate knowledge.

Knowledge Centred Service KCS

creation of knowledge content as byproduct of the solution of the requirements, evolution of content based upon demand and use, development of knowledge base resulting from collective experience and collaboration and acknowledgement by learning, collaboration, sharing and improvement.

In short: evolution of content based upon demand and use. Update bot's training when it is not able to answer.

note: Some chatbots platforms support human hand off. (passing on the ball to humans)



use this opp. to ~~to~~ update the training when humans are escalated to dialogue with the users. This is an on demand knowledge update. proclaimed by KCS.

note: ~~reverse~~

Churn rate is a measure of number of customers who leave a company during a given period.

Talk IQ also helps in stopping churn signals. It identifies at risk - customers and suggests actions to help the agent

strengthen customer relationship.

It guides the agent through conversations in realtime, providing recommendations and highlighting the information ~~and~~ the agent needs to know. @

Talk IQ also shows which ~~reps~~ agents are succeeding and which are struggling, so the manager could target ~~so~~ their coaching and build the best team.

On average, only about 2% of customers complete post-call CSAT surveys. Talk IQ helps the agent understand the other 98% of customers by predicting CSAT for every call.

As with KRB3 CAMP3, part of the challenge was correctly mapping info, in this case, conversations in crowded rooms, sometimes over bad phone connections and tagging things like product-names, features and competitors. Talk IQ used automated voice ~~rec~~ recognition and algorithms that understand natural language, among other tools.

Since products and human interactions change even faster than biology, the training corpus for Talk IQ needs to train almost continuously to predict well. Every prediction depends on accurate info. At the same time, you have to be careful of overfitting or building a model so complex that the noise is contributing to results as much as good data.