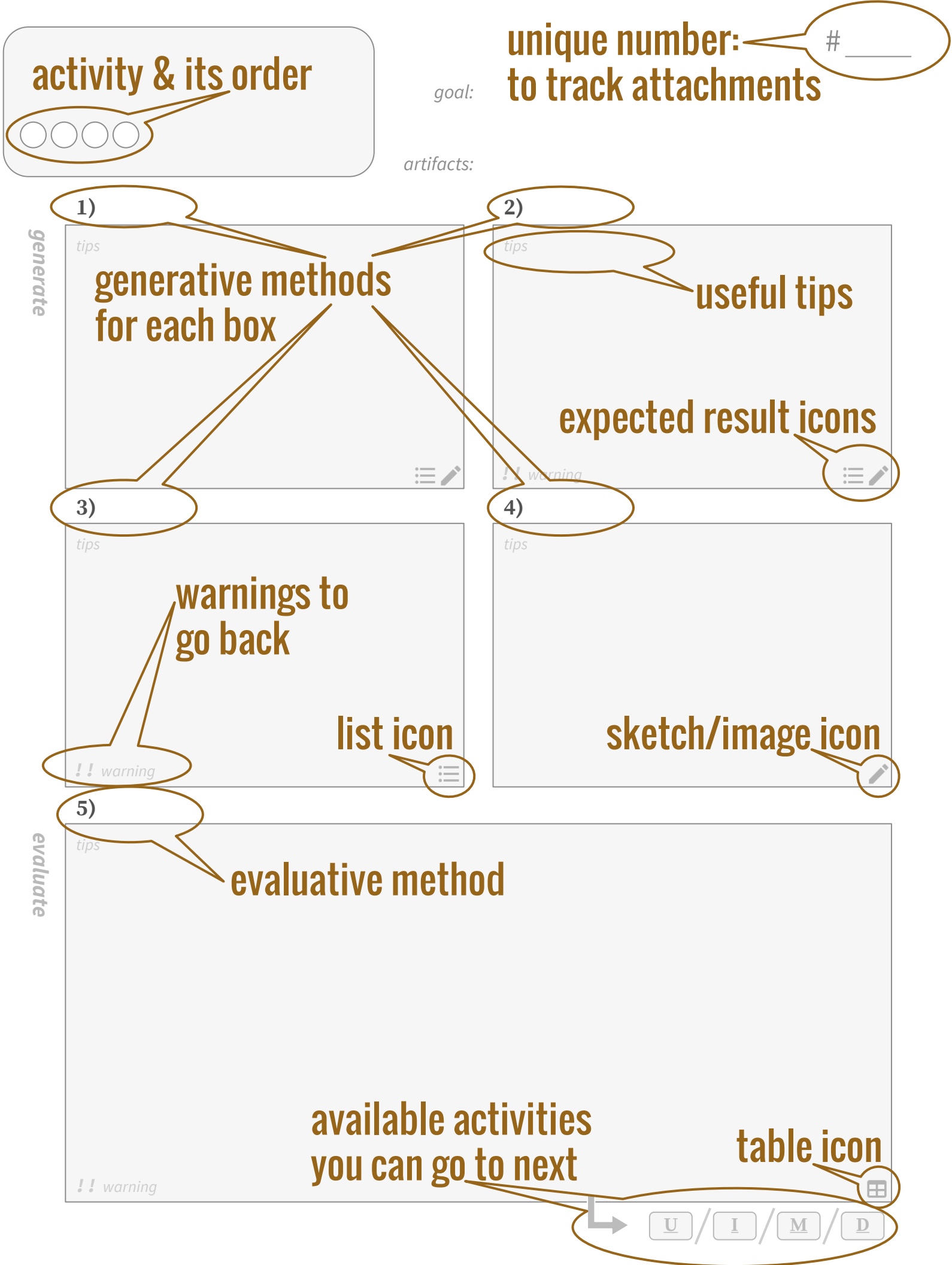
activity & its order
goal:
unique number:
to track attachments
#
artifacts:
generate
1)
tips
generative methods
for each box
2)
tips
useful tips
expected result icons
! ! warning
3)
tips
warnings to
go back
! ! warning
list icon
4)
tips
sketch/image icon
evaluate
5)
tips
evaluative method
! ! warning
available activities
you can go to next
table icon
U
I
M
D

# Understand

#_____

*goal:* gather, observe, and research available information to find the needs of the user

*artifacts:* design requirements

*generate*

## 1) identify the challenge & users

*think big! what is the **problem**? **who** is affected by it? what is known/unknown? orient yourself with all of the project's who, what, why, when, & how.*

## 2) find questions & tasks

*what can you **ask** about the challenge? what do users want to do with data? think high and low level. revisit this worksheet to break these down further.*

*! ! box #3 may help you revisit this box later*

## 3) check with users or explore data

*users: what did you find out? what sparked curiosity?*
*data: characterize aspects of the data. what is it like?*

*! ! get the real data and talk to real users if possible!*

## 4) brainstorm design requirements

*what are recurring trends? what are key design **opportunities**? are there **constraints** worth listing?*

*evaluate*

## 5) compare and rank design requirements

*choose a method for comparison: **pros/cons table**, **rank** based on your findings/user needs/tasks, **cross out** the list based on listed justifications, or **pick top 3** to keep and why. explain and review with a group or partner.*

*! ! is this the right challenge to tackle? is there enough detail? or too much? too many or not enough requirements? complete this worksheet again to refocus the project.*

# Ideate

#_____

*goal:* generate good concepts and ideas for supporting some of the project's design requirements

*artifacts:* ideas & sketches

*generate*

## 1) select a design requirement

*__how might we__ address the challenge using the requirement? which questions would a user ask? revisit this worksheet for each important design requirement.*

*! ! revisit this worksheet for all important design requirements for your project*

## 2) sketch first idea

*show how to address this requirement using an __informal sketch__ - focus on the big idea not the details.*

## 3) sketch another idea

*try another __sketch__, think of a new perspective, be different, do not build off of your previous sketch.*

## 4) sketch a final idea

*think of a different abstraction. challenge constraints and assumptions to __draw__ something new or surprising.*

*! ! is three enough? not always. have other ideas? fill out another worksheet!*

*evaluate*

## 5) compare and relate your ideas

*for each sketch, break apart __what works well (+)__ and __what doesn't (-)__ in the __table__ below. make connections. reflect on best parts. can you __combine ideas__? review the table with a partner or group.*

| sketch #1 | sketch #2 | sketch #3 |
|---|---|---|
| | | |

*! ! combining ideas and sketches is not easy. sometimes it may open up new possibilities and ideas - guess what, ideate again!*

# Make

#_____

*goal:* concretize ideas into tangible prototypes which are approximations of a product in some aspects

*artifacts:* prototypes

*generate*

## 1) set an achievable goal

*what should the prototype **achieve**? what are the specific **criteria for success**? break a larger goal into parts with clearer feature sets.*

*! ! break a goal apart into multiple and create a worksheet for each sub-goal*

## 2) plan encodings & layouts

*what are good visualization **encodings** or **layouts** for which data? use the ideas you just came up with, and remember to justify for users and their tasks.*

## 3) plan support for interactions

***what can the user do?** what is required given the chosen encodings? **justify** your design decisions.*

## 4) sketching additional views

*what other parts of the data must be seen? brainstorm how to show this data in the tool.*

*! ! if you are thinking up new ideas to visualize, go back to the Ideate activity!*

*evaluate*

## 5) build the prototype and check-in

*are your **goals met** by the prototype? test with users if possible. are design decisions properly justified? do any need to be revisited? were any new constraints or limitations discovered? write down your progress and additional justifications below. review this progress and the prototype with a partner or your group.*

*! ! did the prototype meet its goal/s? measure its success. make sure you have addressed the design requirement. does the prototype try to do too much?*

# Deploy

#_____

*goal:* bring a prototype into effective action in order to support real world users' work & goals

*artifacts:* visualization system

*generate*

## 1) pinpoint a target audience

*who are you deploying to? what are their goals? what will qualify this deployment as a success?*

*!! does this audience match your users back on the Understand sheet? if not, revisit previous sheets!*

## 2) fix usability concerns

*can the tool be easier to use? what elements & interactions can be tweaked to avoid frustration?*

*!! is this a new kind of interaction? should you ideate on the idea here instead?*

## 3) improve points of integration

*integrate data/tools. maximize algorithmic or storage efficiency. how does this fit in a user's workflow?*

## 4) refine the aesthetics

*is the use of color and typography consistent? what about the layout or use of whitespace? make it look pleasing!*

*evaluate*

## 5) consider a method to evaluate your system

*take a look at the provided supplement of possible methods. how would you test your system? what would be a successful test of this system? write an evaluation plan here. talk through this plan with a partner or your group.*
*if you have time: test with one or more users, summarize your findings, insights, and recommendations below.*

*!! did any of the usability, integration, or aesthetic changes result in new ideas or requirements? revisit earlier worksheets as needed!*