GOALS
IN REQUIREMENTS ENGINEERING

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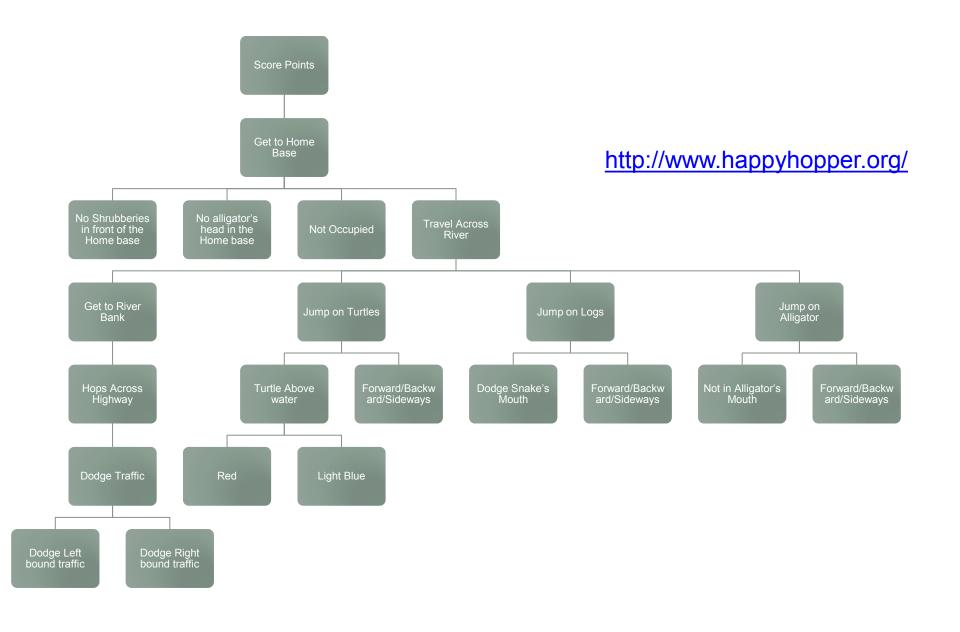
Questions…

- What is a Goal Tree?

- What is a Goal?

- Why are they useful for RE?

- How do you identify them?

What is a Goal Tree?

Graphical representation of the reduction of problems (or goals) to sub-problems (or sub-goals).

What is a Goal?

A goal is an **objective** the system under consideration should achieve.

What's the link?

- The use case is a collection of scenarios that together accomplish a specific user "goal".   - https://eee.uci.edu/12s/37110/slides/Cases.pdf

Why are they useful for RE?

- Eliciting and Identify requirements
- Structuring requirements
- Explaining Requirements to Stakeholders
  -since they are graphical representations.
- Managing Conflicts
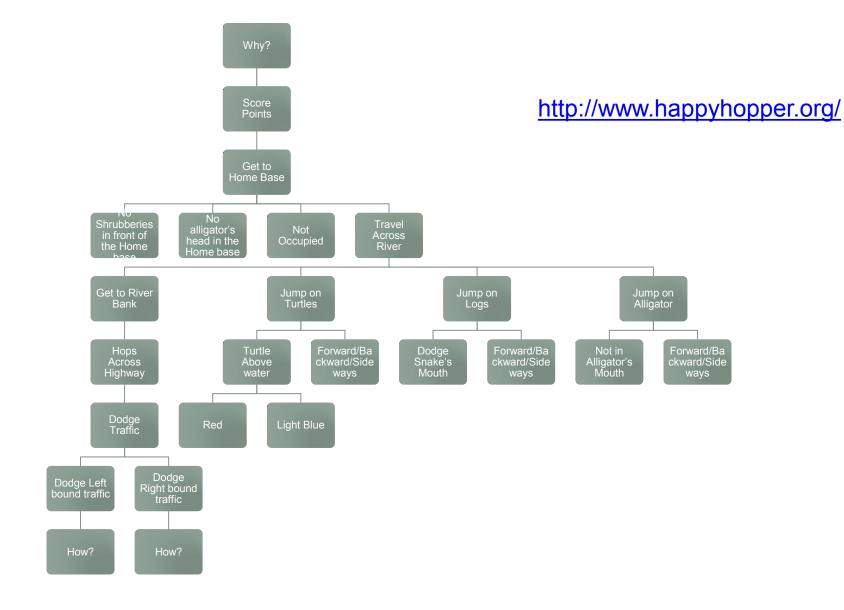 -Different stakeholders will have different goals and sometimes they will conflict.

How do you identify goals?

- Software systems are built to solve problems.
  -Try finding that List (of Problems)
- Look for keywords that convey intent in the documentation that you might have about your projects.
- Refinement- HOW
- Abstraction - WHY
- Conflict and Obstacle Resolution

Types of Problems (Goals)

- Functional Goals
  - Satisfaction Goals
  - Information Goals
- Non-Functional Goals
  - Accuracy Goals
  - Performance Goals
    - Time
      - Response Time
      - Through-put
    - Space
  - Security
    - Confidentiality
    - Integrity
    - Availability

HOW & WHY - Refinement and Abstraction

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```
                            Why?
                              |
                           Score
                           Points
                              |
                          Get to
                         Home Base
      ┌──────────────┬─────────┴──────────┬──────────────┐
      No              No                  Not            Travel
 Shrubberies     alligator's           Occupied         Across
 in front of     head in the                            River
 the Home        Home base
 base
      |                                    |
  ┌───┴──────────────┬──────────────────────┬──────────────────┐
Get to River      Jump on              Jump on             Jump on
   Bank            Turtles               Logs              Alligator
      |               |                    |                   |
   Hops         ┌─────┴──────┐        ┌────┴─────┐       ┌──────┴──────┐
  Across      Turtle    Forward/Ba  Dodge      Forward/Ba  Not in    Forward/Ba
  Highway     Above     ckward/Side Snake's    ckward/Side Alligator's ckward/Side
     |        water      ways       Mouth       ways       Mouth      ways
   Dodge     ┌──┴───┐
   Traffic  Red   Light Blue
     |
 ┌───┴────┐
Dodge Left  Dodge
bound       Right bound
traffic     traffic
    |           |
  How?        How?
```

Class Activity

- List out the problems that you think you are trying to solve in your respective projects. First do this individually without discussing much with your teammates. Look for the intent-keywords (15 mins)

- Compare the problems that you listed out and form a consolidated list. See if you have missed out on any problems. (5 mins)

- Now, take the list and form a Goal Tree, using the WHY and HOW questions. Again, first do this individually without a great deal of discussion. (15 mins)

- Compare the goal trees. Again, consolidate it into a single goal tree. (10 mins)