Visiting old friends

A Gameplay Programming bot by

Nikos Vanden Broek 2DAE5

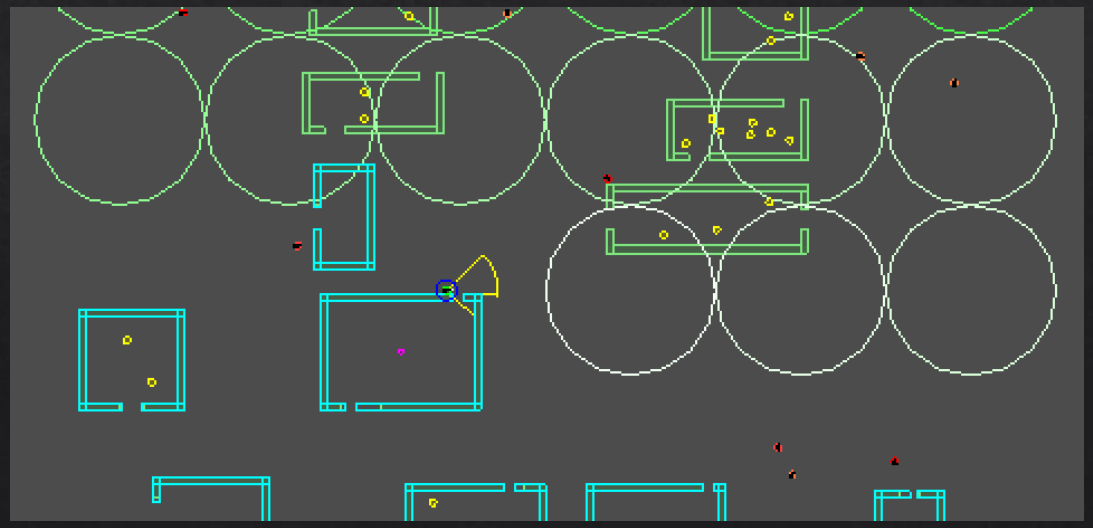
Things to keep in mind

- Find and pick up items
- Maintain balanced inventory
- Avoid / shoot enemies
- Bonus points from checkpoints

- Items always in buildings
- Items stack up in buildings least visited

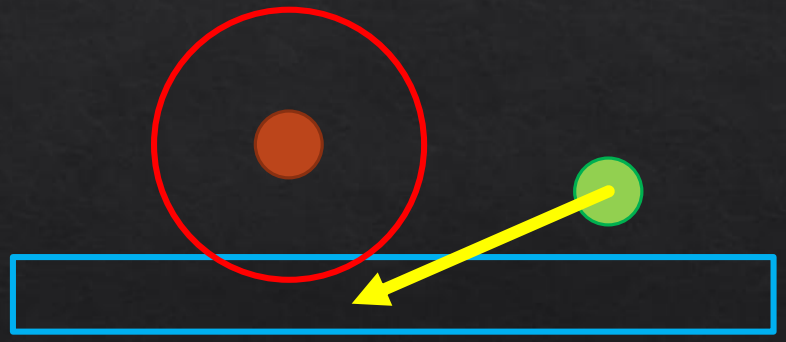
Learned world data

- Scan the entire map once
- Remember buildings, their doors, and last visit
- Remember items seen but passed by for different reasons
- Temporary images of enemies to avoid

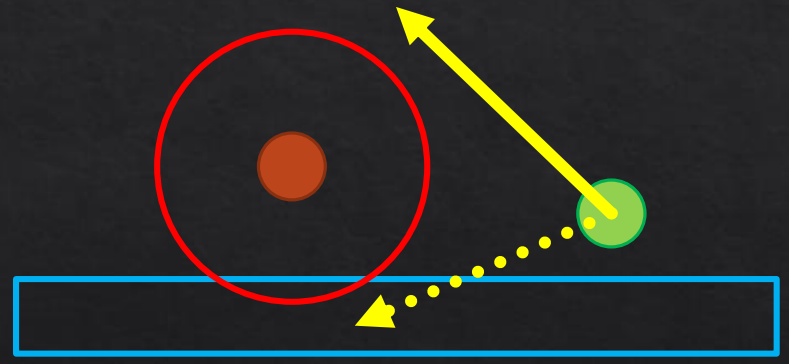


Obstacle avoidance

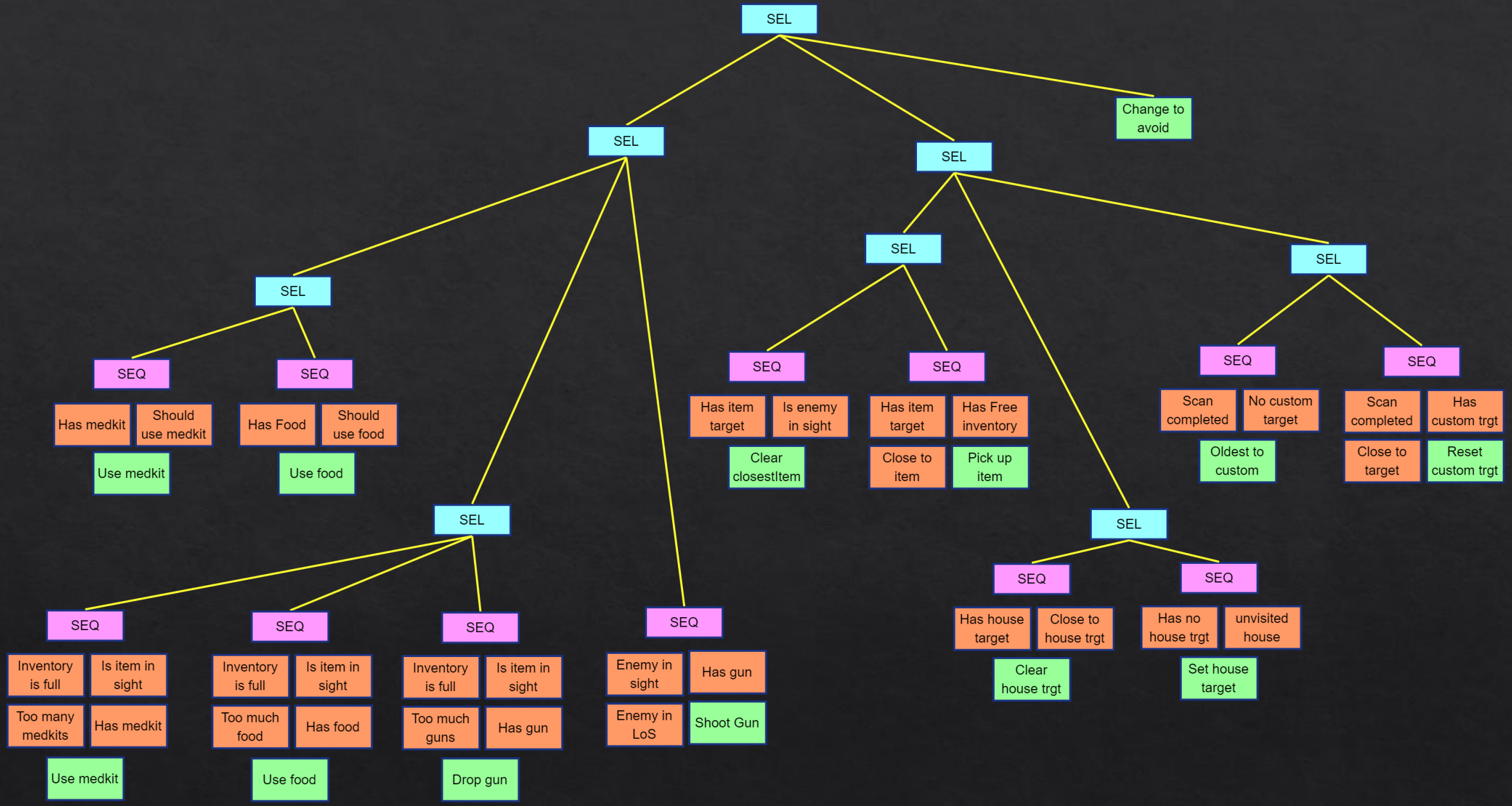
- Uses temporary enemy images to avoid actual enemies
- Uses building walls to avoid steering into walls



Steering into a wall

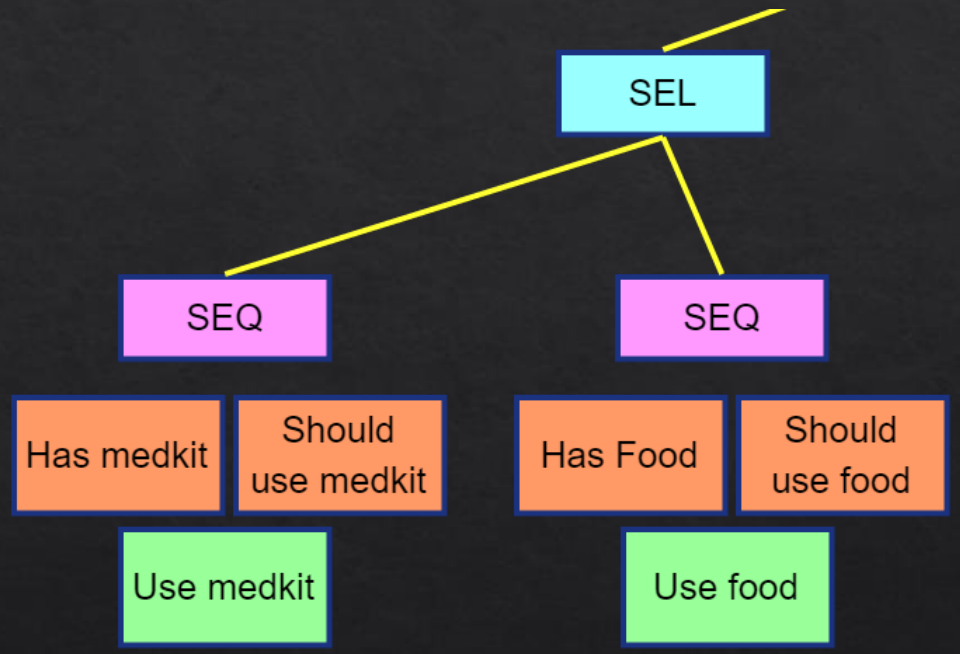


Mirror target away from wall


SEL
SEL
SEL
Change to avoid
SEL
SEL
SEL
SEL
SEQ
SEQ
SEQ
SEQ
SEQ
SEQ
Has medkit
Should use medkit
Has Food
Should use food
Has item target
Is enemy in sight
Has item target
Has Free inventory
Scan completed
No custom target
Scan completed
Has custom trgt
Use medkit
Use food
Clear closestItem
Close to item
Pick up item
Oldest to custom
Close to target
Reset custom trgt
SEL
SEL
SEQ
SEQ
SEQ
SEQ
SEQ
SEQ
Inventory is full
Is item in sight
Inventory is full
Is item in sight
Inventory is full
Is item in sight
Enemy in sight
Has gun
Has house target
Close to house trgt
Has no house trgt
unvisited house
Too many medkits
Has medkit
Too much food
Has food
Too much guns
Has gun
Enemy in LoS
Shoot Gun
Clear house trgt
Set house target
Use medkit
Use food
Drop gun

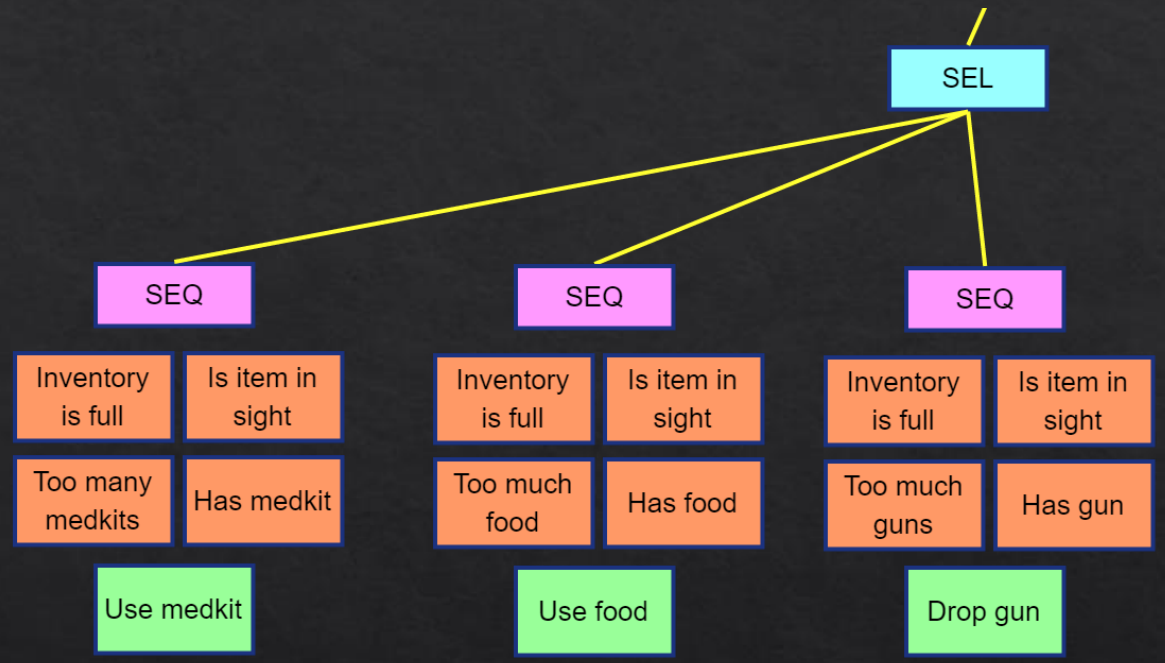
Staying alive

- Use the weakest item first
- Is missing health > weakest heal
- Is missing stamina > weakest food



Inventory management

- Plugin provides data about number of each type, and weakest of each type
- Don't care about inventory unless it's full and we see an item
- Find the item type we have the most of
- Use weakest med kit or food
- Drop weakest gun
- If same amount take order :
  Med kit - Food - Gun

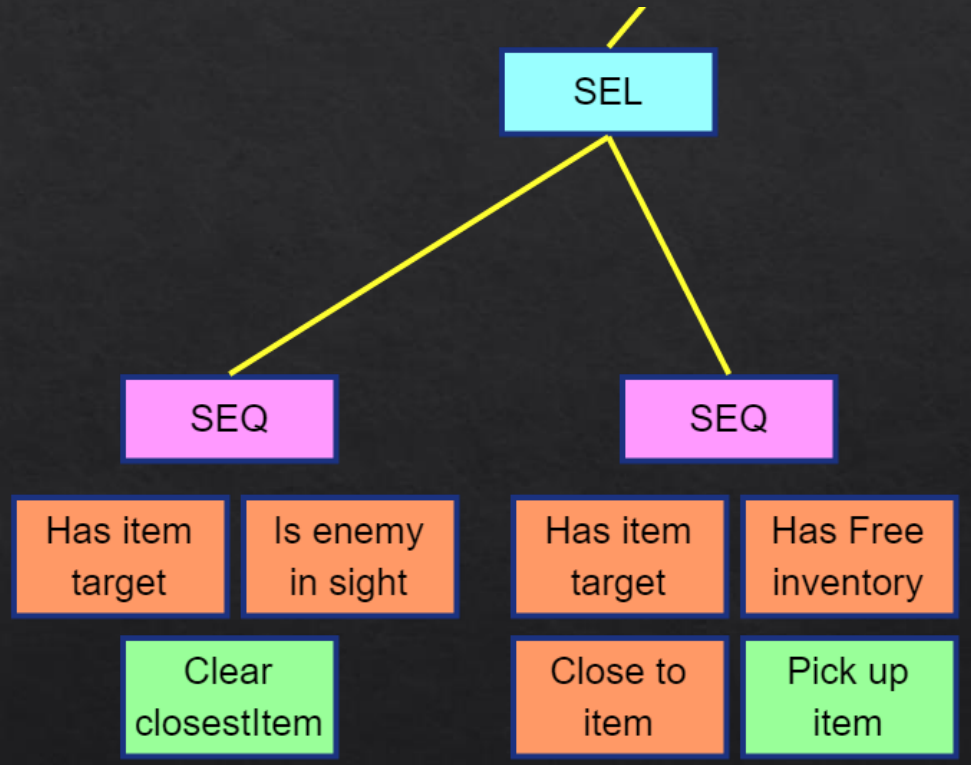


Enemies

- Check if enemy in our LoS using Circle-Line intersection
- If in sight but not LoS, determine shortest rotation target
- Tree provides data when enemy in sights and if bot should rotate
- Plugin handles the rotation

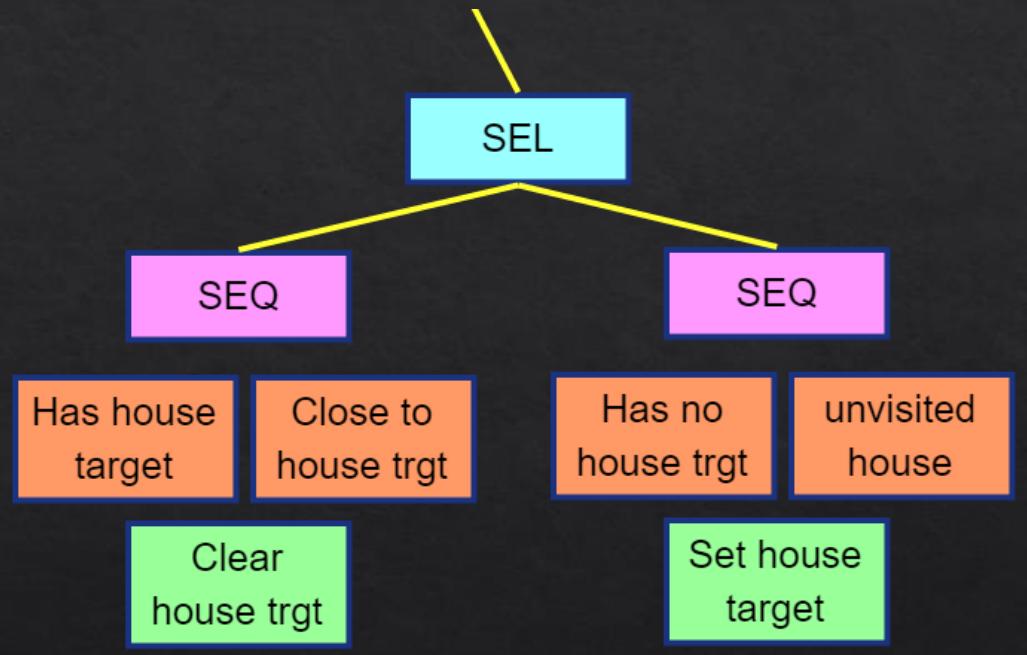
Picking up items

- Plugin provides closest item in FoV
- In none in FoV, provide missed one through learned world data
- Pick up item once in range, instantly drop if it's trash



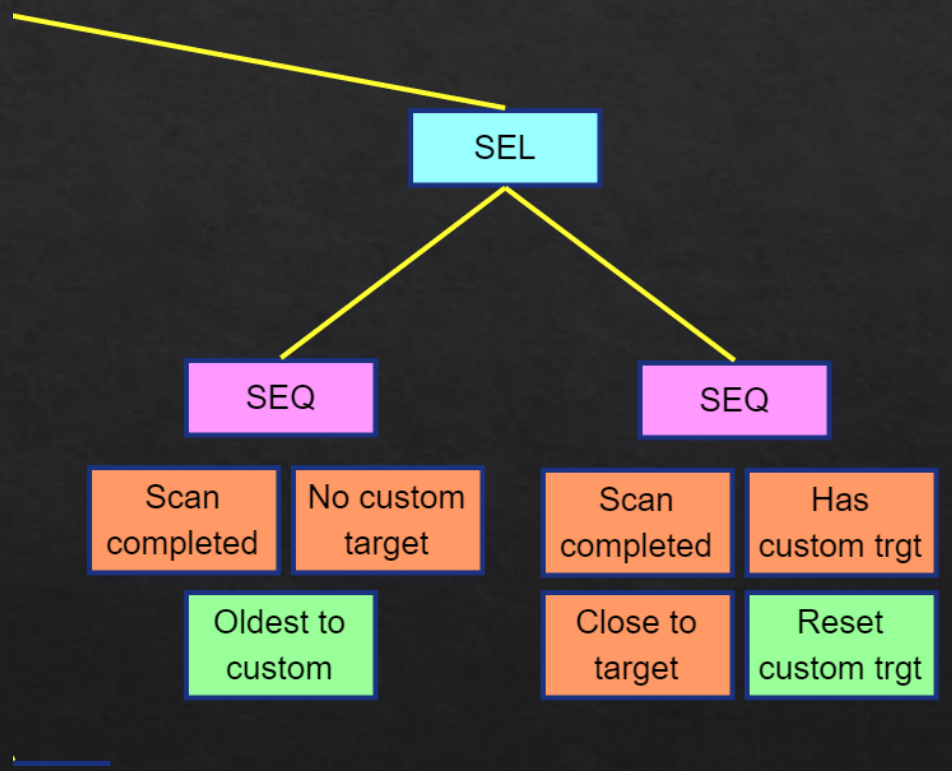
Visiting houses along the way

- Visit houses we run into along the way once
- Remember which houses have been visited and update their ‘last visited’ time using alive time
- Reset list when scan finishes, reaching custom target, or picking up checkpoint



Visit old friends

- Learned world data remembers which hasn't been visited in the longest time
- Once visited, oldest becomes most recent, go to new 'oldest' visited house
- Guarantee all houses get visited regularly



Recap

- Scan the world once to get every house
- Once scan is done, keep going to the longest unvisited house
- Check other houses we run in to along the way
- Pick up any item we find along the way and keep a balanced inventory
- Pick up the checkpoint if it's in the same house
- Avoid/shoot enemies we run in to
- Live forever