

Intelligent Hinting and Affect Detection

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Sprint 0

Set up the environment

Sprint 1

Captured more features for
affect and behavior detection

1. Mean and s.d. of time interval
between two actions
 2. Mean and s.d. of time interval
between two block removal actions
 3. Mean and s.d. of number of
actions taken in every 10s
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Sprint 1

Captured more features for
affect and behavior detection

1. Mean and s.d. of time interval
between two actions

2. Mean and s.d. of time interval
between two block removal actions

3. Mean and s.d. of number of
actions taken in every 10s

UserId	ProjectName	Mean	StandardDeviation	changeInterval_mean	changeInterval_sd	blockInterval_mean	blockInterval_sd	changePerInterval_mean	changePerInterval_sd
1	Project1	9.285714285714286	8.046085743907987	6.222222222222222	3.899531921442522	6.4	3.9867427365029244	12	15.462319791458633
1	Project2	4.066666666666666	5.271480413235589	5.514285714285714	3.673205272618169	5.514285714285714	3.673205272618169	4.909090909090908	5.911321590281056
2	Project1	3.857142857142857	5.016375301352677	6.275862068965518	5.391107438074944	6.5	5.426273532033235	4.0434782608695645	4.790883965403511

Sprint 2

Created a mock data generator
for behaviors

Behaviors

- Stopper: stop when they cannot solve the problem
 - Mover: consistently try one thing after another without ever really seeming to be stuck
 - Extreme mover: tend to try new fixes with hardly any reflection or apparent convergence to a solution
 - Tinkerer: first write some code, then end up making many successive small edits to fix the program
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Sprint 2

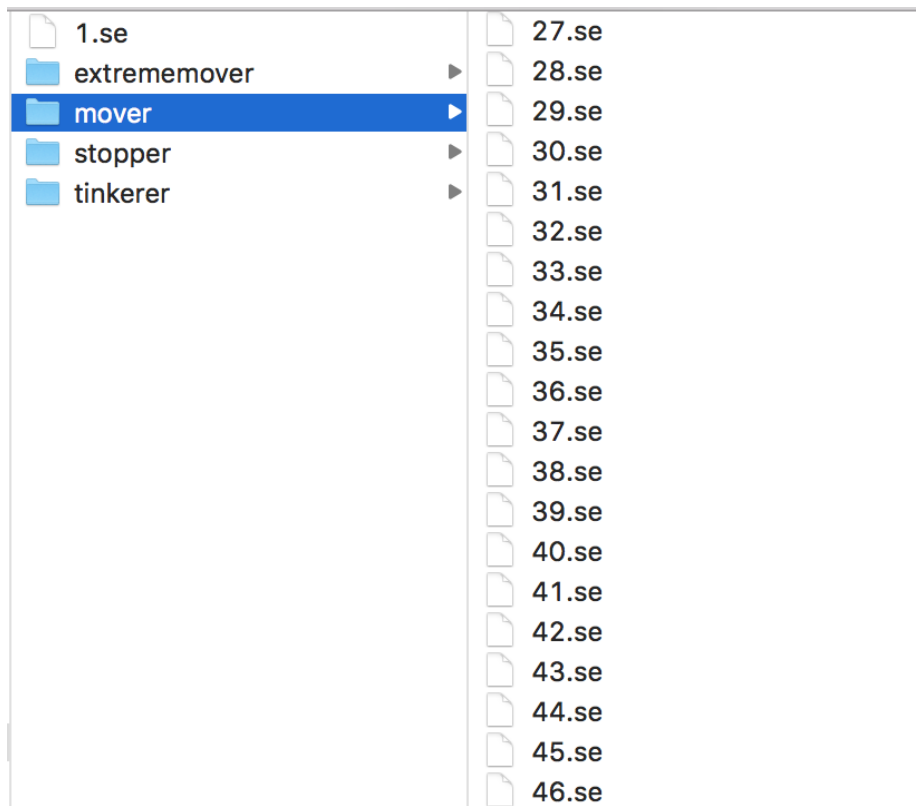
Created a mock data generator
for behaviors

Start from one complete .se file



Make assumptions about
probability of action interval and
action type for each behavior

Generate a sequence of
timestamped .se files for each kind
of behavior



Start from one complete .se file

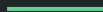


Make assumptions about
probability of action interval and
action type for each behavior

Generate a sequence of
timestamped .se files for each kind
of behavior

In the future

1. Create models that classify behaviors
2. Create on demand hinting function for users



In the future

Behavior classification

- Based on mock data, create model that can detect different behaviors - stopper, mover, extreme mover, tinkerer
 - Adjust automatic hinting frequency for different behaviors
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In the future

On demand hinting function

- Add a hint button to produce hint when clicked
 - Enable different hinting layers to improve effectiveness
 - Limit total number of hints to avoid gaming the system
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Thank you!
