

410 A Hyperparameters

	Parameter	Value
τ	Replanning Rate	1
δ	Language Influence Threshold	2m
n_s	Number of LLM Samples	10
w_p	Weight of Positive Scores	300
w_n	Weight of Negative Scores	150
	Max Time Steps	500

Table 3: Hyperparameters

411 B Implementation Details, Code, Videos

Parameter	Value
LLM	gpt-3.5-turbo ³
Evaluation Runtime	5 hours
Compute Resources	$5 \times V100$
Num. Processes	5
Total Tokens	30M ⁴
Average API Cost	15 USD

Table 4: Parameters and resources required to run one evaluation round of LFG on the benchmark.

412 We have provided our implementation code, evaluation scripts, and prompts used for all experiments
413 in the supplemental material.

414 We are also sharing videos of LFG on our project page (we were not able to upload it due to size
415 limitations). Please check our project page for these videos: sites.google.com/view/lfg-anon/

416 C Prompts

417 C.1 Positive Prompt

```
You are a robot exploring an environment for the first time. You will be  
→ given an object to look for and should provide guidance of where to  
→ explore based on a series of observations. Observations will be given  
→ as a list of object clusters numbered 1 to N.
```

```
Your job is to provide guidance about where we should explore next. For  
→ example if we are in a house and looking for a tv we should explore  
→ areas that typically have tv's such as bedrooms and living rooms.
```

```
You should always provide reasoning along with a number identifying where  
→ we should explore. If there are multiple right answers you should  
→ separate them with commas. Always include Reasoning: <your reasoning>  
→ and Answer: <your answer(s)>. If there are no suitable answers leave  
→ the space after Answer: blank.
```

Example

User:

I observe the following clusters of objects while exploring a house:

1. sofa, tv, speaker
2. desk, chair, computer
3. sink, microwave, refrigerator

Where should I search next if I am looking for a knife?

Assistant:

Reasoning: Knives are typically kept in the kitchen and a sink,

- microwave, and refrigerator are commonly found in kitchens. Therefore
- we should check the cluster that is likely to be a kitchen first.

Answer: 3

Other considerations

1. Disregard the frequency of the objects listed on each line. If there
 - are multiple of the same item in a cluster it will only be listed
 - once in that cluster.
2. You will only be given a list of common items found in the
 - environment. You will not be given room labels. Use your best
 - judgement when determining what room a cluster of objects is likely
 - to belong to.

You are a robot exploring an environment for the first time. You will be
 → given an object to look for and should provide guidance of where to
 → explore based on a series of observations. Observations will be given
 → as a list of object clusters numbered 1 to N.

Your job is to provide guidance about where we should not waste time
 → exploring. For example if we are in a house and looking for a tv we
 → should not waste time looking in the bathroom. It is your job to
 → point this out.

You should always provide reasoning along with a number identifying where
 → we should not explore. If there are multiple right answers you should
 → separate them with commas. Always include Reasoning: <your reasoning>
 → and Answer: <your answer(s)>. If there are no suitable answers leave
 → the space after Answer: blank.

Example

User:

I observe the following clusters of objects while exploring a house:

1. sofa, tv, speaker
2. desk, chair, computer
3. sink, microwave, refrigerator

Where should I avoid spending time searching if I am looking for a knife?

Assistant:

Reasoning: Knives are typically not kept in a living room or office space
 → which is what the objects in 1 and 2 suggest. Therefore you should
 → avoid looking in 1 and 2.

Answer: 1,2

Other considerations

1. Disregard the frequency of the objects listed on each line. If there
 → are multiple of the same item in a cluster it will only be listed
 → once in that cluster.
2. You will only be given a list of common items found in the
 → environment. You will not be given room labels. Use your best
 → judgement when determining what room a cluster of objects is likely
 → to belong to.