Lookahead list example

```
  w 2000
  w 1492
  r 456
  w 24121
  r 24120
  r 34
  r 4592
  r 2000
  w 2000
  r 1492
  r 24120
```

Contains 0 operations.
0 operations processed.
Initially empty.

Lookahead list example

```
* w 2000
  w 1492
  r 456
  w 24121
  r 24120
  r 34
  r 4592
  r 2000
  w 2000
  r 1492
  r 24120
```

Contains 1 operation.
0 operations processed.

Lookahead list example

```
  w 2000
* w 1492
  r 456
  w 24121
  r 24120
  r 34
  r 4592
  r 2000
  w 2000
  r 1492
  r 24120
```

Contains 2 operations.
0 operations processed.

Lookahead list example

```
  w 2000
  w 1492
* r 456
  w 24121
  r 24120
  r 34
  r 4592
  r 2000
  w 2000
  r 1492
  r 24120
```

Contains 3 operations.
0 operations processed.

Lookahead list example

```
  w 2000
  w 1492
  r 456
* w 24121
  r 24120
  r 34
  r 4592
  r 2000
  w 2000
  r 1492
  r 24120
```

Contains 4 operations.
0 operations processed.

Lookahead list example

```
+ w 2000
  w 1492
  r 456
  w 24121
* r 24120
  r 34
  r 4592
  r 2000
  w 2000
  r 1492
  r 24120
```

Contains 4 operations.
1 operation processed.

Lookahead list example

```
  w 2000
+ w 1492
  r 456
  w 24121
  r 24120
* r 34
  r 4592
  r 2000
  w 2000
  r 1492
  r 24120
```

Contains 4 operations.
2 operations processed.

Lookahead list example

```
  w 2000
  w 1492
+ r 456
  w 24121
  r 24120
  r 34
* r 4592
  r 2000
  w 2000
  r 1492
  r 24120
```

Contains 4 operations.
3 operations processed.

Lookahead list example

```
  w 2000
  w 1492
  r 456
+ w 24121
  r 24120
  r 34
  r 4592
* r 2000
  w 2000
  r 1492
  r 24120
```

Contains 4 operations.
4 operations processed.

Lookahead list example

```
  w 2000
  w 1492
  r 456
  w 24121
+ r 24120
  r 34
  r 4592
  r 2000
* w 2000
  r 1492
  r 24120
```

Contains 4 operations.
5 operations processed.

Lookahead list example

```
  w 2000
  w 1492
  r 456
  w 24121
  r 24120
+ r 34
  r 4592
  r 2000
  w 2000
* r 1492
  r 24120
```

Contains 4 operations.
6 operations processed.

Lookahead list example

```
  w 2000
  w 1492
  r 456
  w 24121
  r 24120
  r 34
+ r 4592
  r 2000
  w 2000
  r 1492
* r 24120
```

Contains 4 operations.
7 operations processed.

Lookahead list example

```
  w 2000
  w 1492
  r 456
  w 24121
  r 24120
  r 34
+ r 4592
  r 2000
  w 2000
  r 1492
* r 24120
```

Contains 4 operations.
7 operations processed.

No more input!
flush() is called, which indicates to process the rest of the lookahead list.

Lookahead list example

```
  w 2000
  w 1492
  r 456
  w 24121
  r 24120
  r 34
  r 4592
+ r 2000
  w 2000
  r 1492
  r 24120
```

Contains 3 operations.
8 operations processed.

Lookahead list example

```
  w 2000
  w 1492
  r 456
  w 24121
  r 24120
  r 34
  r 4592
  r 2000
+ w 2000
  r 1492
  r 24120
```

Contains 2 operations.
9 operations processed.

Lookahead list example

```
  w 2000
  w 1492
  r 456
  w 24121
  r 24120
  r 34
  r 4592
  r 2000
  w 2000
+ r 1492
  r 24120
```

Contains 1 operation.
10 operations processed.

Lookahead list example

```
  w 2000
  w 1492
  r 456
  w 24121
  r 24120
  r 34
  r 4592
  r 2000
  w 2000
  r 1492
+ r 24120
```

Contains 0 operations.
All 11 operations processed.

Finding frame to remove

- Starts from back of cache list
- Examines frames one at a time
- When it finds one which isn't needed by the operations in the lookahead list
  - This is the frame which is removed
- Examines at most *check_frames* frames

PLRU example 1

- num_frames = 6, page_size = 512
- lookahead = 3, check_frames = 4
- Current operation:
  - `w 1492  (page 2)`
- Lookahead list:
  - `w 50  (page 0)`
  - `w 15400  (page 30)`
  - `r 2200  (page 4)`

PLRU example 1

Initially:	3 w	5 r	1 r	42 r	30 w	4 r

- Page 2 is not in cache
- Cache miss
- Must find a frame to remove

PLRU example 1

						v
Initially:	3 w	5 r	1 r	42 r	30 w	4 r
						^

- Start at back of list
- Page 4 is in lookahead list
- Don't remove this frame
- Normal LRU algorithm would blindly remove this frame

PLRU example 1

						v
Initially:	3 w	5 r	1 r	42 r	30 w	4 r
						^

- Move to next frame
- Page 30 is in lookahead list
- Don't remove this frame

PLRU example 1

					v	
Initially:	3 w	5 r	1 r	42 r	30 w	4 r
				^		

- Move to next frame
- Page 42 is NOT in lookahead list
- Remove this frame
- Then add page 2 as usual

PLRU example 1

Initially:	3 w	5 r	1 r	42 r	30 w	4 r

Finally:	2 w	3 w	5 r	1 r	30 w	4 r

- Pages 30 and 4 are still in cache
- So will be cache hits when the upcoming operations are processed