# Benchmarks

* 20-50 test cases
* Possible properties:
  + Shape
    - heap is of a specific shape
  + Reachability
    - some variable is reachable from another one via specific pointer fields
  + Visit property
    - every element of the input is accessed by a specific variable
  + Neighborhood
    - input data structure coincides with the output data structure upon termination
  + Correctness
    - the return value is not null
  + Termination
    - cur neither points to none of the other objects nor to null infinitely often

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| --- | --- | --- | --- | --- | --- |
| Datastructure | Operation | Property | | LTL Formula | ✔/✘ |
| Singly Linked List (SLL) | Build | Shape | | GF { L(RefSLList) } | ✔ |
|  | |  |  |
|  | |  |  |
|  | |  |  |
|  | |  |  |
| Traverse | Completeness | | (GF {terminated} -> F {visited(current)}) | ✔ |
| Neighborhood Preservance | | ({terminated} -> {identicNeighbours}) | ✔ |
| Reachability | F (X {terminated} -> {isReachable(head,tail,[next])}) | | ✔ |
| Shape | (GF {terminated} -> GF { L(RefSLList) }) | | ? |
|  |  | |  |
| Reverse | Completeness | | (GF {terminated} -> F {visited(current)}) | ✔ |
| Neighborhood Preservance | | FG ! {identicNeighbours} | ✔ |
| Reachability | (X {isReachable(head,tail,[next])} & F (X {terminated} -> {isReachable(tail,head,[next])})) | | ? |
| Shape | (GF {terminated} -> GF { L(RefSLList) }) | | ✔ |
| Find |  | |  |  |
| Concat |  | |  |  |
| Insert |  | |  |  |
| Delete |  | |  |  |
| Faulty … |  | |  |  |
|  |  | |  |  |
| SLL recursive | Reverse |  | |  |  |
| Build |  | |  |  |
| Doubly Linked List (DLL) | Build |  | |  |  |
| Traverse |  | |  |  |
| Reverse |  | |  |  |
| Find |  | |  |  |
| Concat |  | |  |  |
| Insert |  | |  |  |
| Delete |  | |  |  |
| Faulty Reverse |  | |  |  |
| Faulty … |  | |  |  |
| DLL recursive | Reverse |  | |  |  |
| Build |  | |  |  |
| Tree | Traverse |  | |  |  |
| Find |  | |  |  |
| Build |  | |  |  |
| Insert |  | |  |  |
| delete |  | |  |  |
| Tree recursive | Traverse |  | |  |  |