Code Visualization

Milestone 6

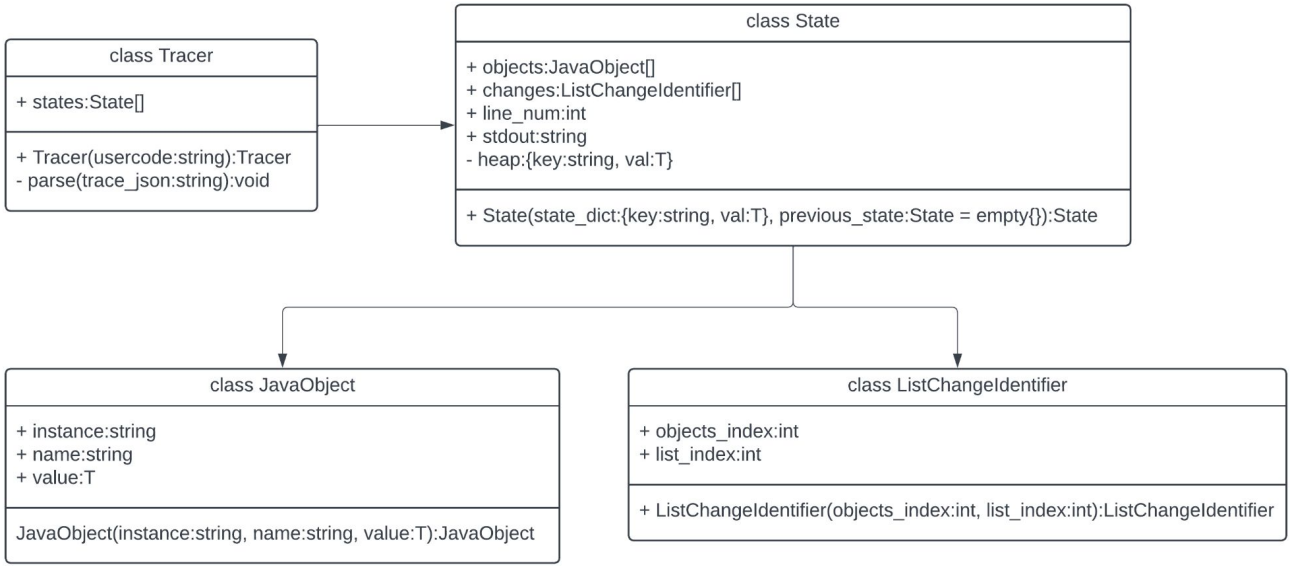
Progress Matrix

Task	Completion %	Curtice	Josh	Catherine
1. Add LinkedList functionality to parser	100%	100%	0%	0%
2. Add finishing touches to GUI	100%	0%	100%	0%
3. Create user/developer manual	100%	50%	50%	0%
4. Create demo video	100%	0%	0%	100%

1. Add LinkedList functionality to parser

Curtice Gough

Recall


class Tracer
+ states:State[]
+ Tracer(usercode:string):Tracer
- parse(trace_json:string):void
class State
+ objects:JavaObject[]
+ changes:ListChangeIdentifier[]
+ line_num:int
+ stdout:string
- heap:{key:string, val:T}
+ State(state_dict:{key:string, val:T}, previous_state:State = empty{}):State
class JavaObject
+ instance:string
+ name:string
+ value:T
JavaObject(instance:string, name:string, value:T):JavaObject
class ListChangeIdentifier
+ objects_index:int
+ list_index:int
+ ListChangeIdentifier(objects_index:int, list_index:int):ListChangeIdentifier

git diff trace.py

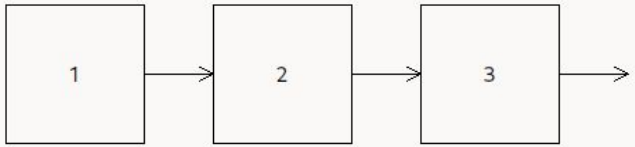
```
70  +
71  +                elif heap_item[0] == 'INSTANCE':
72  +                    if heap_item[1] == 'LinkedList': # handle LinkedList
73  +                        list_var_old = None
74  +                        for obj in previous_state.objects:
75  +                            if obj.name == varname:
76  +                                list_var_old = obj.value
77  +                                break
78  +
79  +                        list_var = []
80  +
81  +                        if heap_item[2][1] != None: # if head != null
82  +                            node = self.heap[str(heap_item[2][1][1])]
83  +                            list_var.append(node[2][1])
84  +
85  +                            while(node[3][1] != None): # Iterate through LinkedList
86  +                                node = self.heap[str(node[3][1][1])]
87  +                                list_var.append(node[2][1])
88  +
89  +                            self.objects.append(JavaObject('LIST', varname, list_var))
90  +                            for i in range(len(list_var)):
91  +                                try:
92  +                                    if list_var[i] != list_var_old[i]: # Changed item
93  +                                        print(f"{varname}[{i}] changed from {list_var_old[i]} to {list_var[i]}")
94  +                                        self.changes.append(ListChangeIdentifier(len(self.objects) - 1, i))
95  +                                except: # New item
96  +                                    self.changes.append(ListChangeIdentifier(len(self.objects) - 1, i))
```

CodeViz

```
public class Main {
    public static void main(String[] args) {
        LinkedList<Integer> list = new LinkedList<>();

        list.add(1);
        list.add(2);
        list.add(3);

        System.out.println("Size of the list: " + list.size());
        System.out.println("Elements of the list:");
        list.printList();
    }
}
```



All Variables in the state will be shown here

All Stdout will be shown here

Execute | Step Forwards | Step Backwards

2. Add finishing touches to GUI

Joshua Hartzfeld

Unexpected issues

After many hours of troubleshooting i was unable to implement a working line tracing solution in PyQT6 and PyQt5.

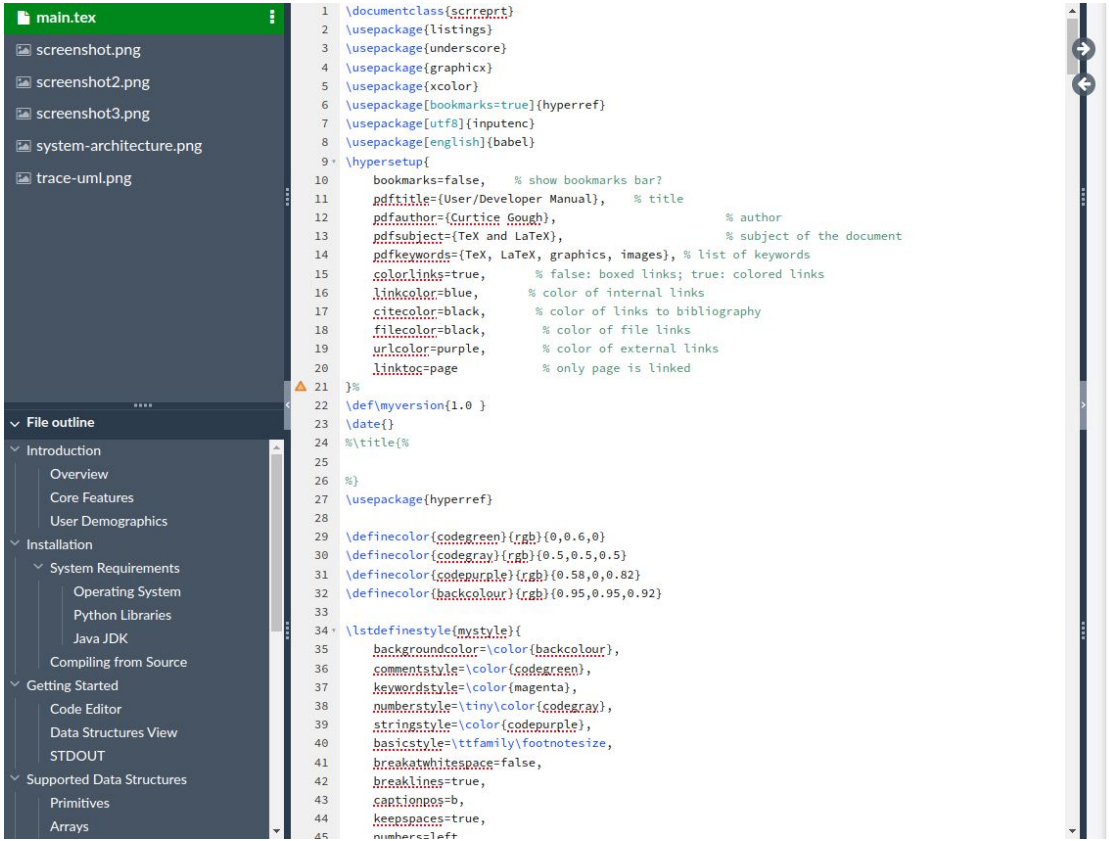
After isolating the project to just a code editor I was still unable to use crucial properties of QCursor QTextDocument, and QTextBlock. Some methods outline in the documentation were unusable causing the GUI to crash.

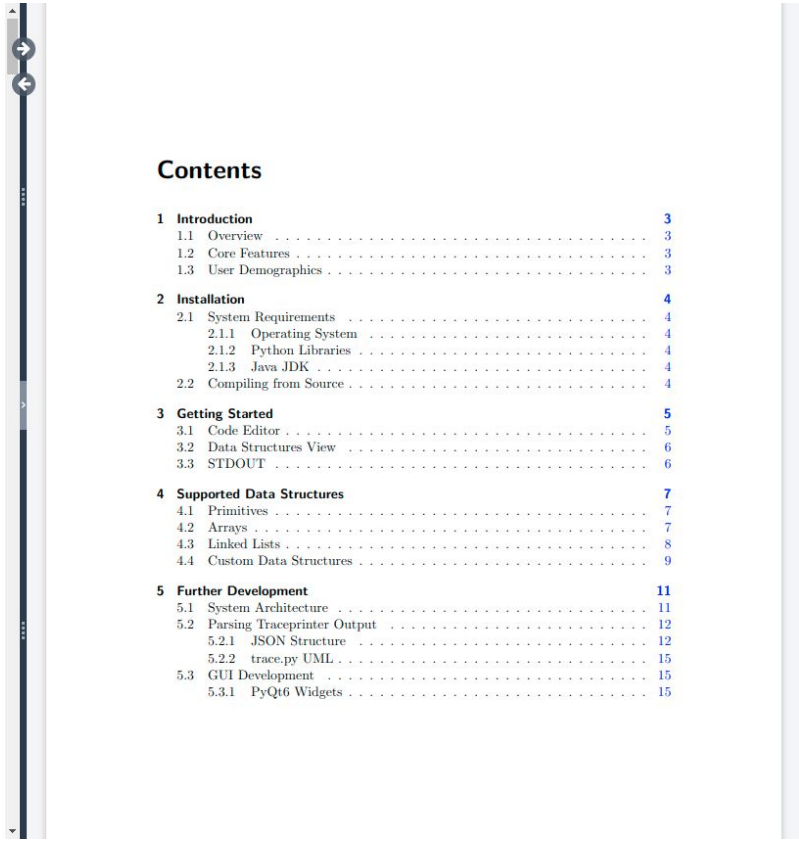
This has been outlined for any future groups to figure out.

3. Create user/developer manual

Curtice Gough
Joshua Hartzfeld

https://curtico.github.io/code-visualization/docs/manual.pdf





Contents

4. Create demo video

Catherine DiResta

Demo Video

https://drive.google.com/file/d/1rMWXDUlukP47zJGj0nZl-pQLEcK8j-1s/view?usp=sharing

Thank You