Analysis Sequence Diagrams

Group 5
Deliverable 4

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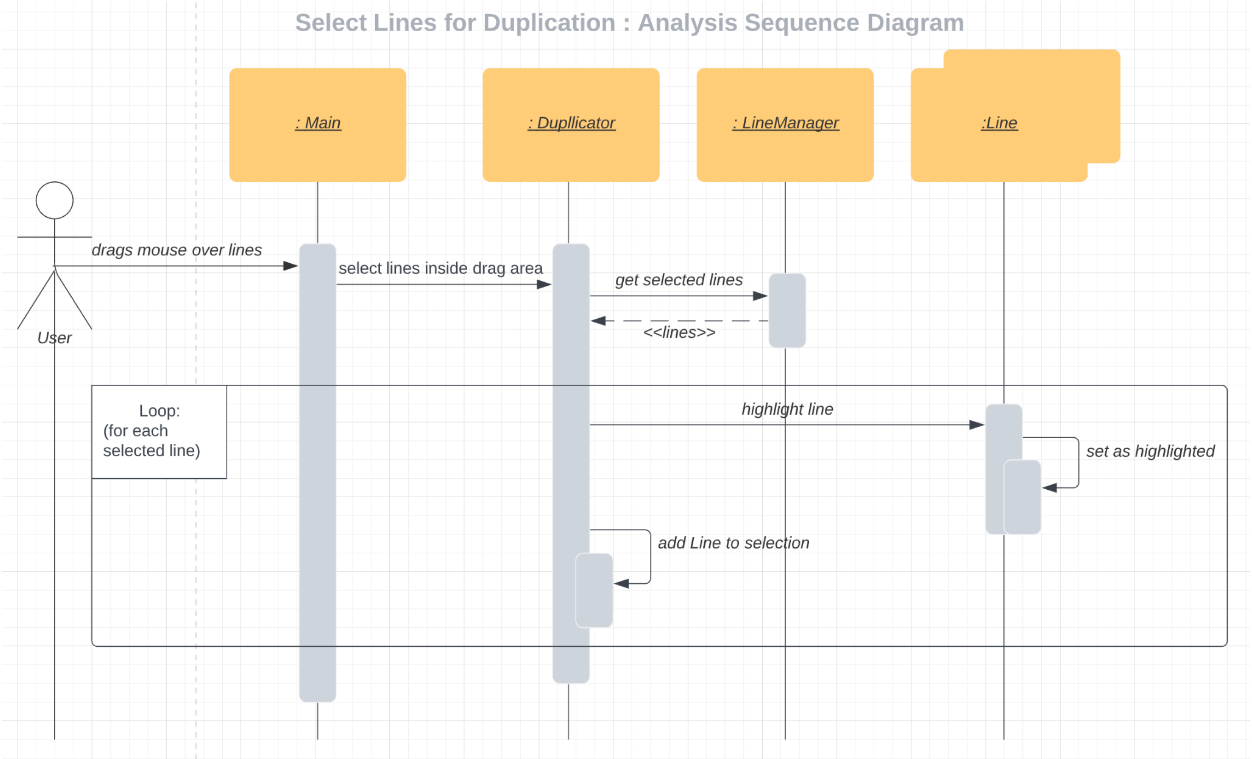
1) DUPLICATE LINES -> Select Lines for Duplication

Analysis sequence diagram:



Note: To address feedback, Duplicator is acting as a controller for the duplication function.

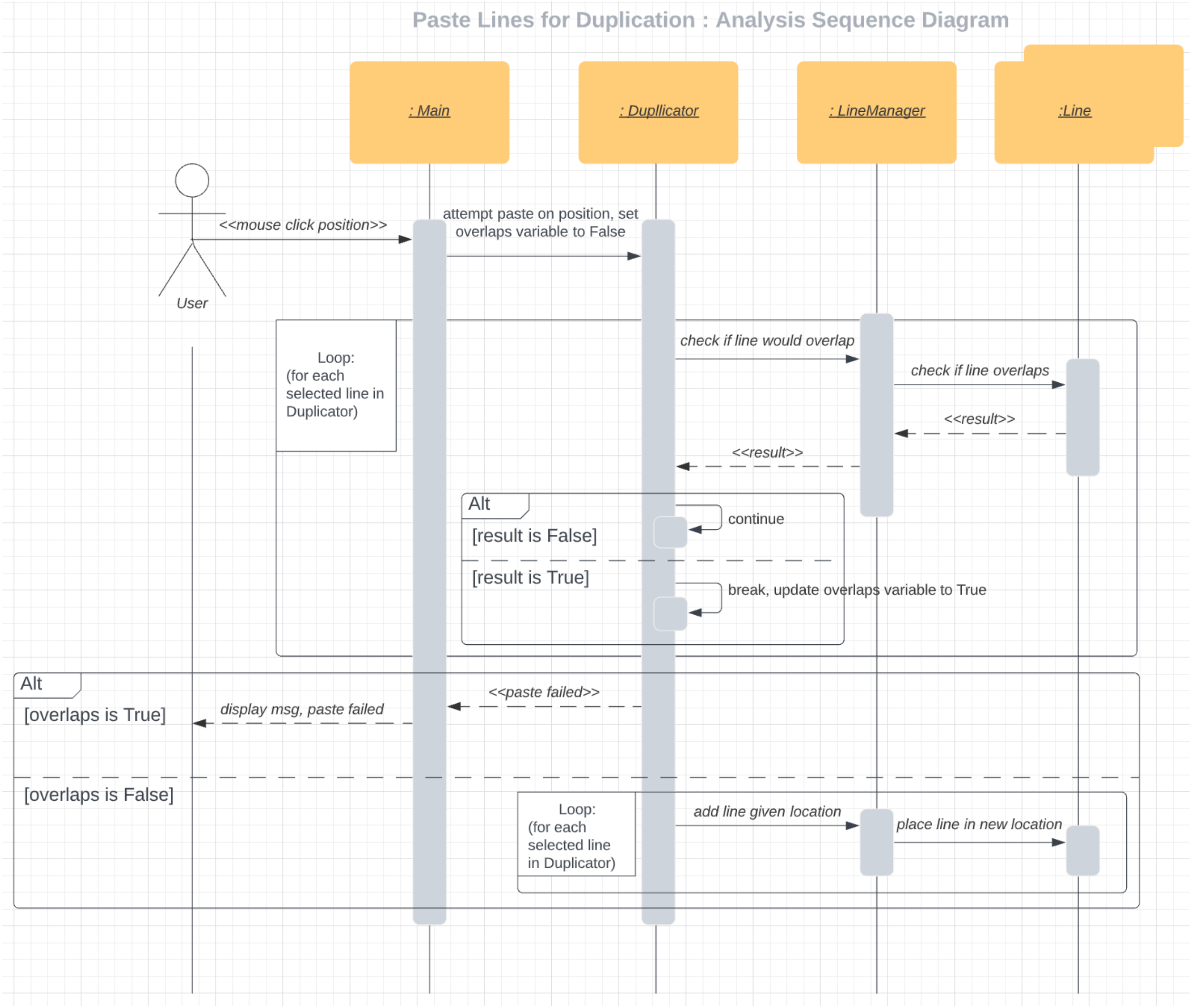
Scenario description:

#	Subject	Subject Action	Parameters	Object Acted Upon
1	User	drags	mouse	Main
2	Main	selects lines	drag area	Duplicator
3	Duplicator	gets selected lines	drag area	LineManager
4	LineManager	returns	selected lines	Duplicator
5	Loop, for each selected line:			

5.1	Duplicator	sends	highlight	Line
5.2	Line	sets	highlighted	Line
5.3	Duplicator	adds to selection	Line	Duplicator

2) DUPLICATE LINES -> Place duplicated selection

Analysis sequence diagram:


Paste Lines for Duplication : Analysis Sequence Diagram
: Main
: Dupllicator
: LineManager
:Line
User
<<mouse click position>>
attempt paste on position, set overlaps variable to False
Loop:
(for each selected line in Duplicator)
check if line would overlap
check if line overlaps
<<result>>
<<result>>
Alt
[result is False]
continue
[result is True]
break, update overlaps variable to True
Alt
[overlaps is True]
<<paste failed>>
display msg, paste failed
[overlaps is False]
Loop:
(for each selected line in Duplicator)
add line given location
place line in new location

Scenario description:

#	Subject	Subject Action	Parameters	Object Acted Upon
1	User	clicks mouse	position	Main
2	Main	sends	Paste, overlaps = False	Duplicator
3	Loop, for each selected Line:			
3.1	Duplicator	requests	overlaps	LineManager
3.2	LineManager	requests	overlaps	Line
3.3	Line	returns	overlaps	LineManager
3.4	LineManager	returns	overlaps	Duplicator
3.3	If line doesn’t overlap:			
3.3.1	Duplicator	continues		Duplicator
3.4	Else if line overlaps:			
3.4.1	Duplicator	breaks, updates overlaps to True		Duplicator
4	If overlaps is True:			
4.1	Duplicator	sends	"paste failed"	Main
4.2	Main	displays msg	"paste failed"	User
5	If overlaps is False:			
5.1	Loop, for each selected Line:			
5.2	Duplicator	sends	line location	LineManager
5.3	LineManager	places on location	new line	LineManager

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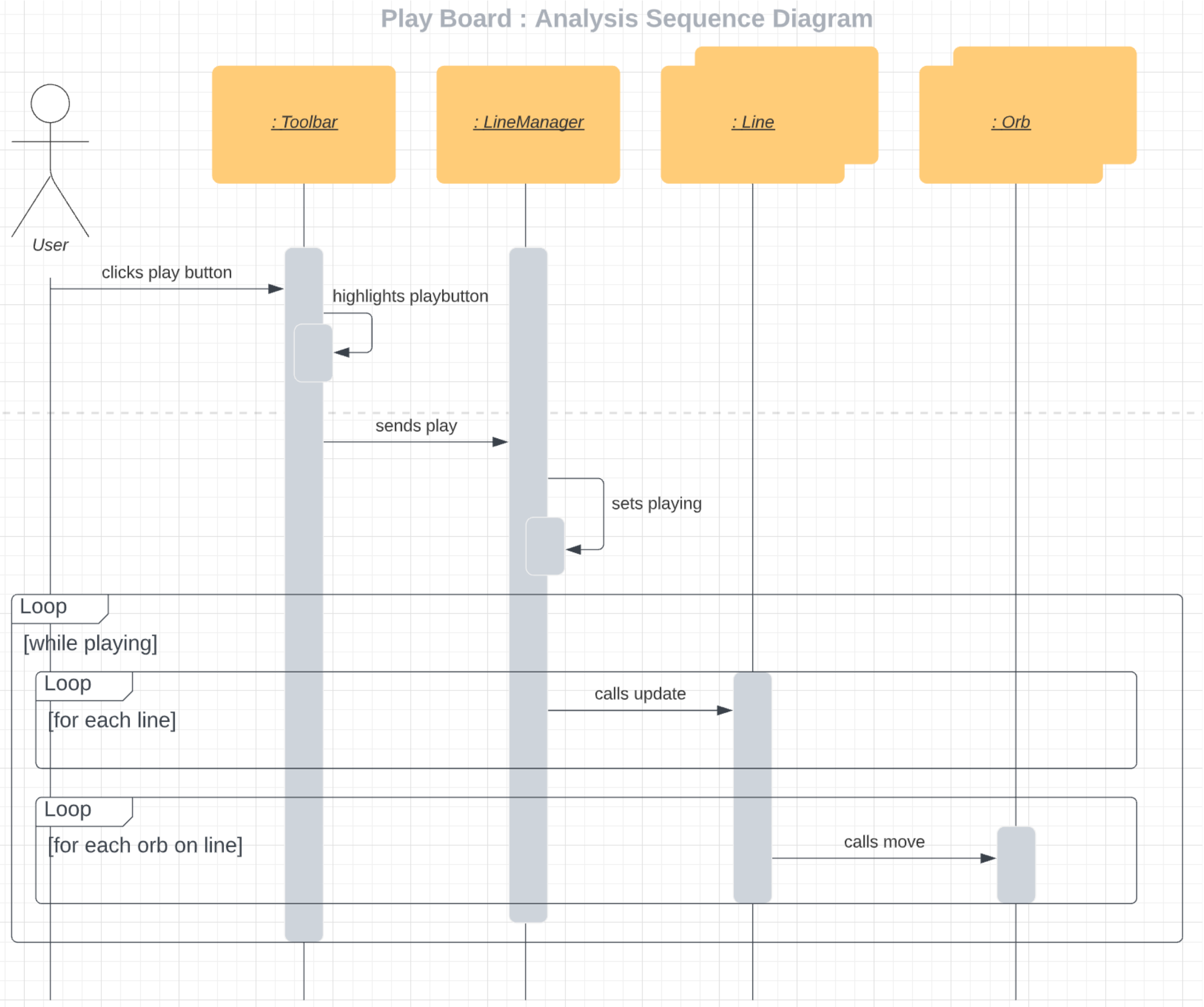
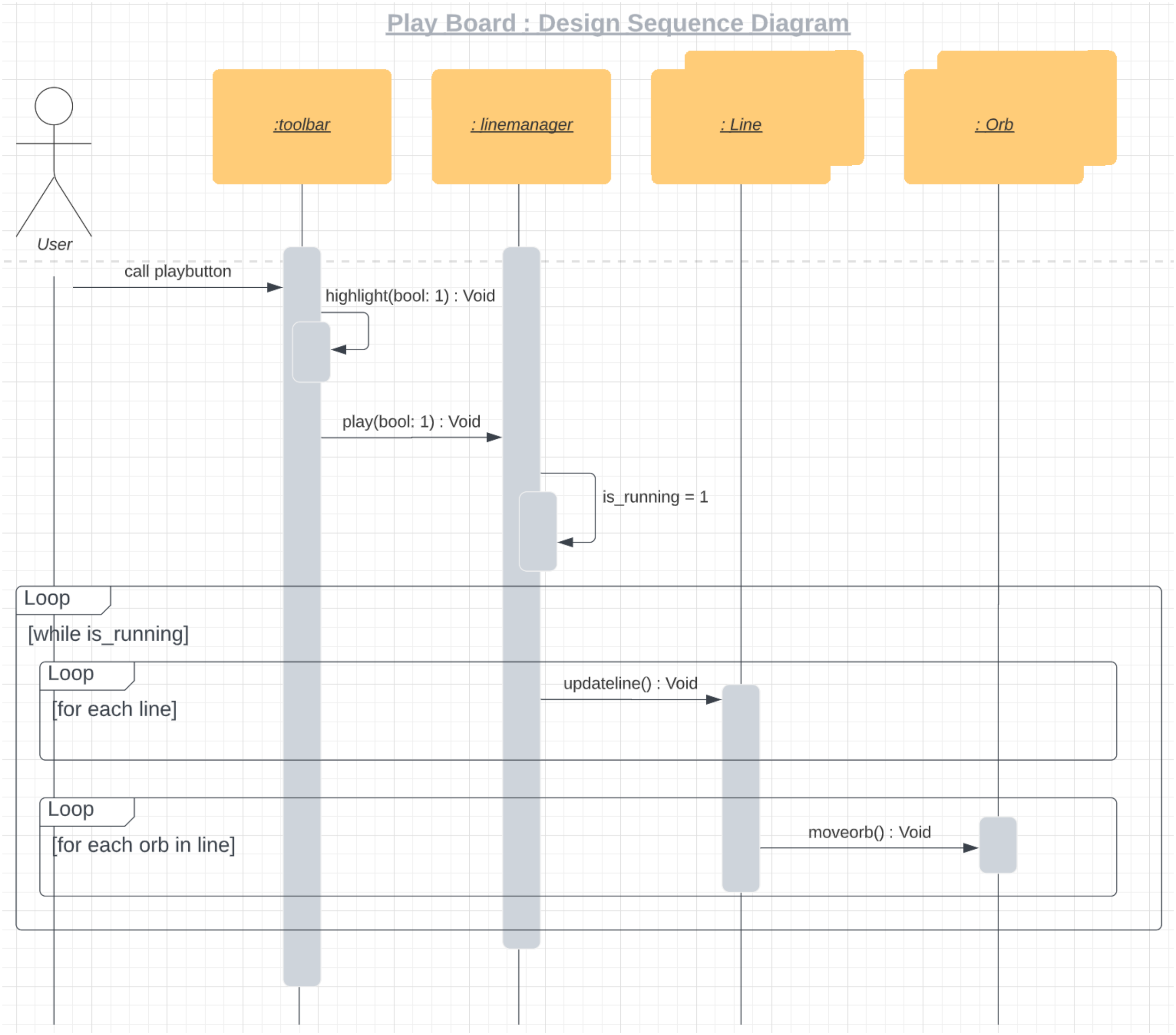
3) **PLAY BOARD -> Play Board (move orbs)**

Analysis sequence diagram:



Design Sequence Diagram:



Scenario description:

#	Subject	Subject Action	Parameters	Object Acted Upon
1	User	clicks	play button	Toolbar
2	Toolbar	highlights	play button	Toolbar
3	Toolbar	sends	play	LineManager
4	LineManager	sets	playing	LineManager
5	While playing:			
5.1	For each line:			

5.1.1	LineManager	calls	update	Line
5.2	For each orb on line:			
5.2.1	Line	calls	move	Orb

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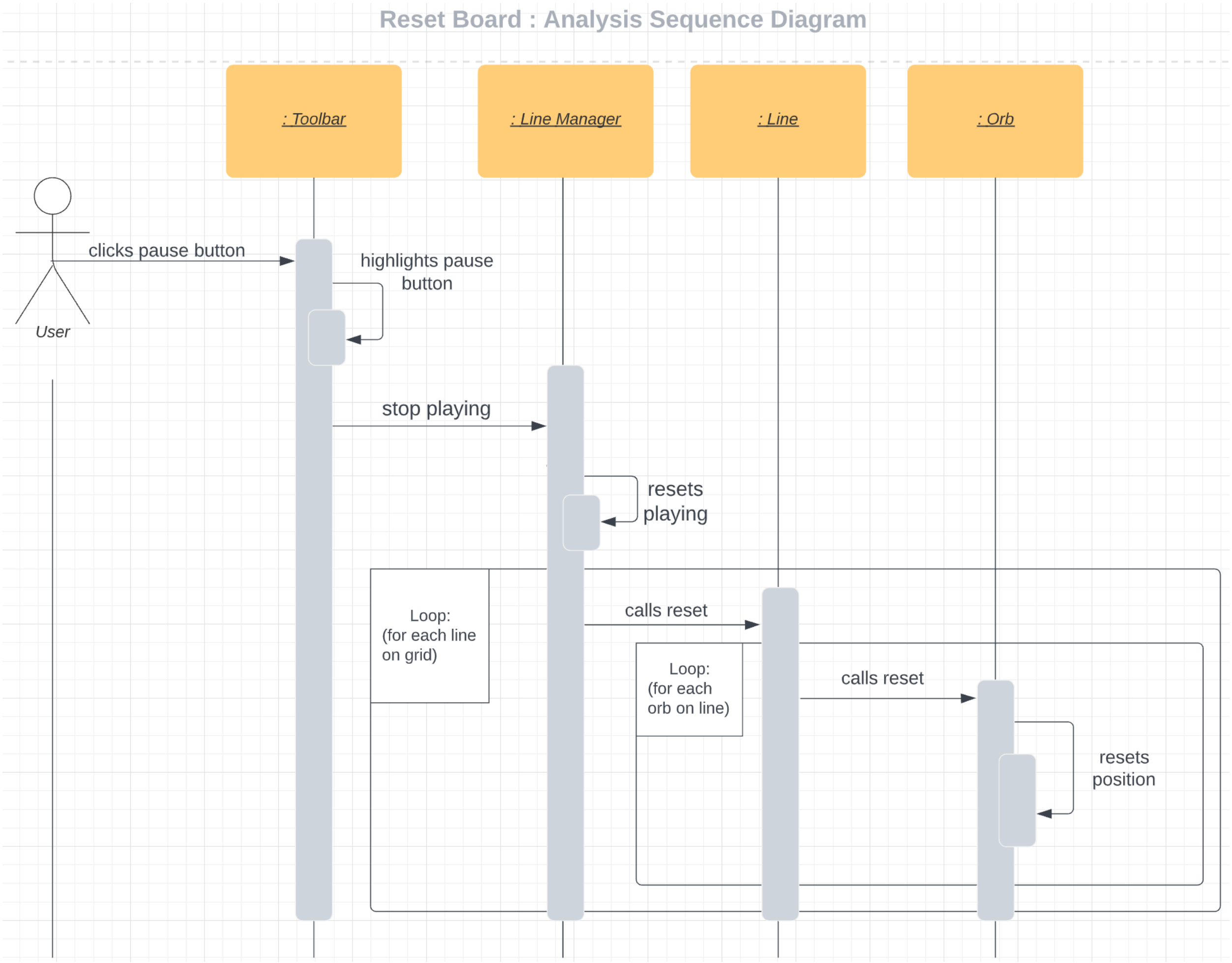
4) PLAY BOARD -> Reset Board and Stop Animation

Analysis sequence diagram:



Scenario description:

#	Subject	Subject Action	Parameters	Object Acted Upon

1	User	clicks	pause button	Toolbar
2	Toolbar	highlights	pause button	Toolbar
3	Toolbar	sends	stop playing	LineManager
4	LineManager	resets	playing	LineManager
5	For each line on grid:			
5.1	LineManager	calls	reset	Line
5.2	For each orb on line:			
5.2.1	Line	calls	reset	Orb
5.2.2	Orb	resets	position	Orb

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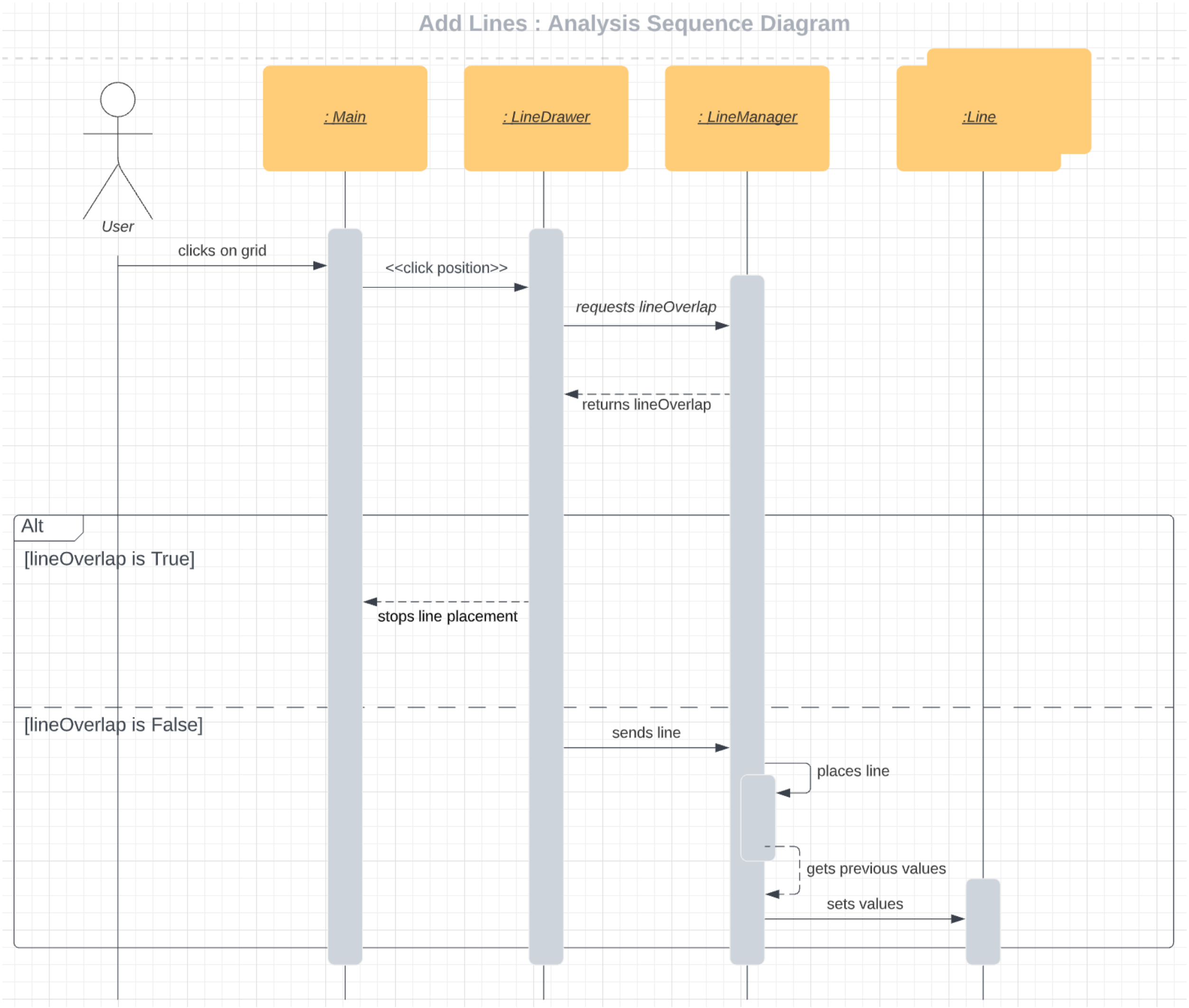
5) ADD LINES



Scenario description:

#	Subject	Subject Action	Parameters	Object Acted Upon
1	User	clicks grid	position	Main
2	Main	sends	click position	LineDrawer
3	LineDrawer	requests	lineOverlaps	LineManager
4	LineManager	returns	lineOverlaps	LineDrawer
5	If lineOverlaps:			
4.1	LineDrawer	stops	placement	Main

5	Else if lineOverlap is False:			
5.1	LineDrawer	sends	Line	LineManager
5.2	LineManager	places	Line	LineManager
5.3	LineManager	gets	previous values	LineManager
5.4	LineManager	sets	values	Line

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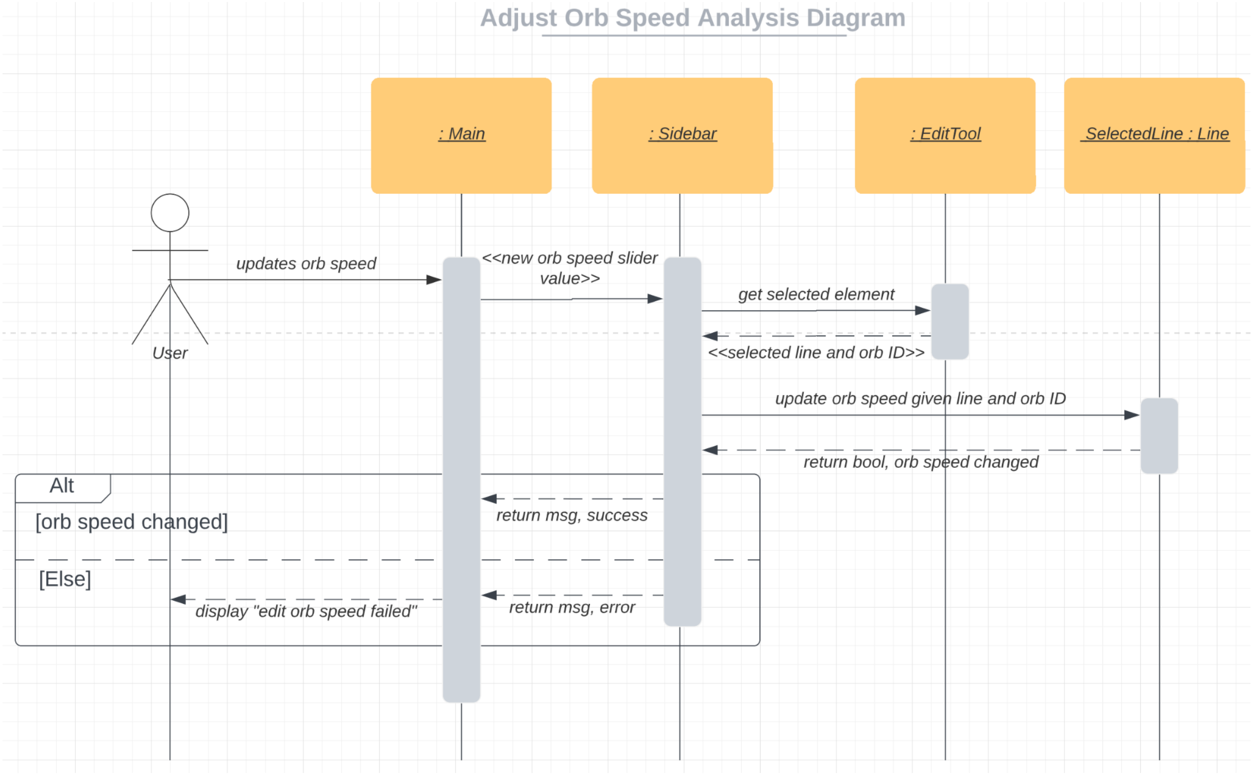
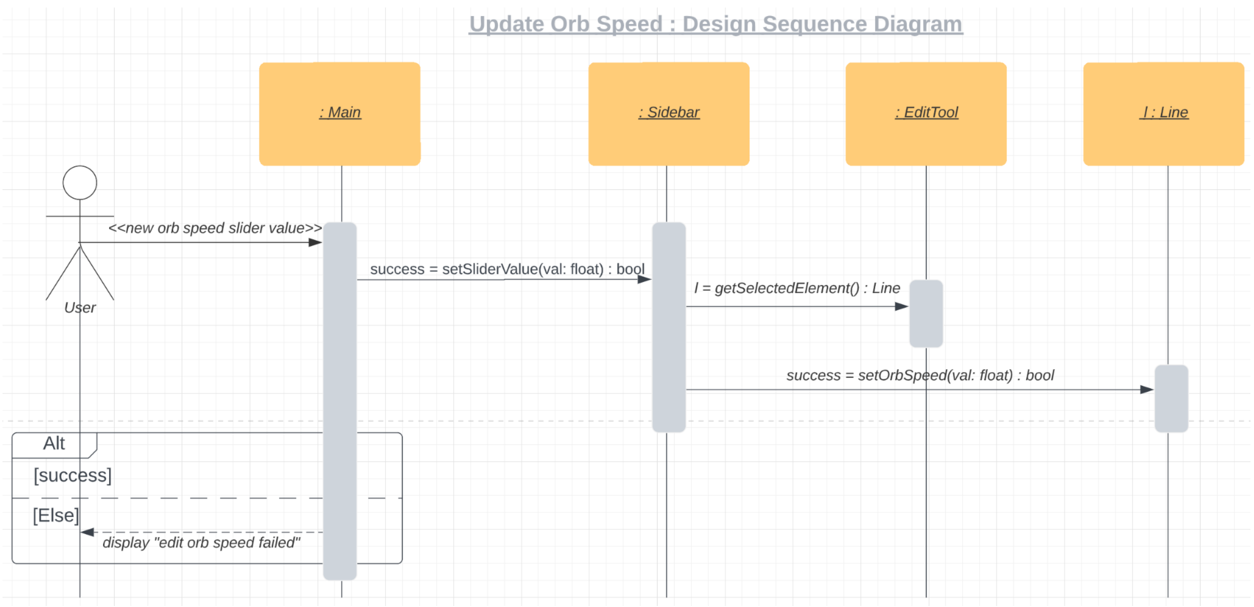
6) Adjust Orb Speed

Analysis sequence diagram:


Adjust Orb Speed Analysis Diagram
: Main
: Sidebar
: EditTool
SelectedLine : Line
User
updates orb speed
<<new orb speed slider value>>
get selected element
<<selected line and orb ID>>
update orb speed given line and orb ID
return bool, orb speed changed
Alt
[orb speed changed]
return msg, success
[Else]
return msg, error
display "edit orb speed failed"

Design Sequence Diagram:

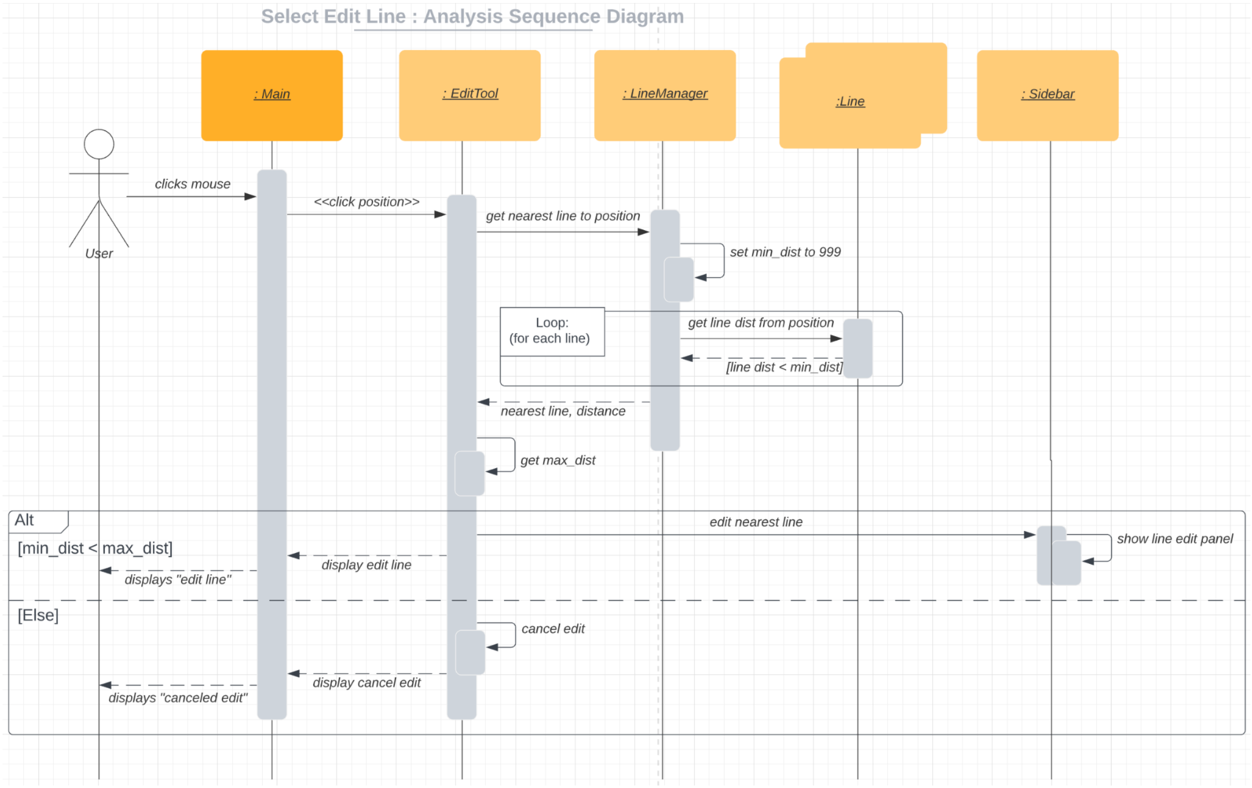

Update Orb Speed : Design Sequence Diagram
: Main
: Sidebar
: EditTool
l : Line
User
<<new orb speed slider value>>
success = setSliderValue(val: float) : bool
l = getSelectedElement() : Line
success = setOrbSpeed(val: float) : bool
Alt
[success]
[Else]
display "edit orb speed failed"

Scenario description:

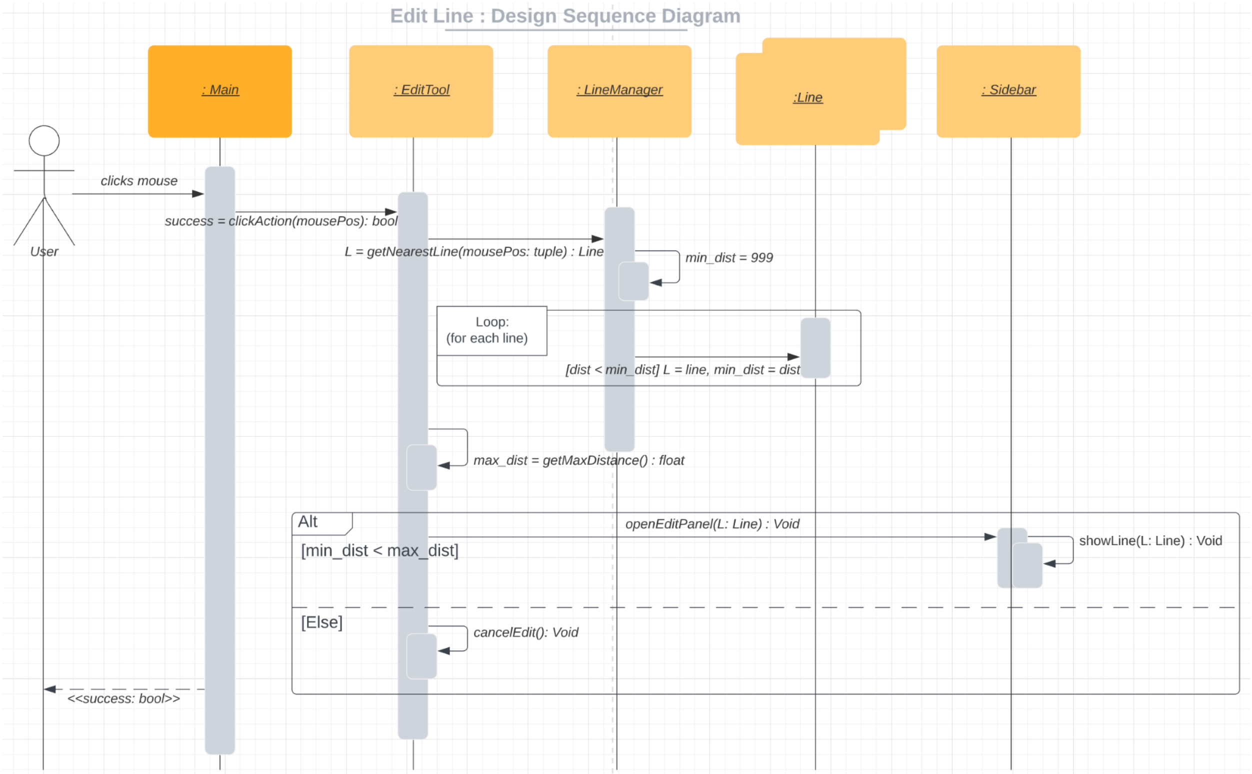
#	Subject	Subject Action	Parameters	Object Acted Upon
1	User	updates	orb speed	Main
2	Main	sends	orb speed slider value	Sidebar
3	Sidebar	gets	selected element	EditTool
4	EditTool	returns	selected element (Line and orb ID)	Sidebar
5	Sidebar	updates orb speed	Line, orb ID	Line
6	Line	returns bool	orb speed changed	Sidebar
7	If orb speed changed:			
7.1	Sidebar	returns msg	success	Main
8	Else:			
8.1	Sidebar	returns msg	error	Main
8.2	Main	displays msg	“edit orb speed failed”	User

7) SELECT EDIT LINE

Analysis sequence diagram:



Design Sequence Diagram:


Edit Line : Design Sequence Diagram
: Main
: EditTool
: LineManager
:Line
: Sidebar
User
clicks mouse
success = clickAction(mousePos): bool
L = getNearestLine(mousePos: tuple) : Line
min_dist = 999
Loop:
(for each line)
[dist < min_dist] L = line, min_dist = dist
max_dist = getMaxDistance() : float
Alt
[min_dist < max_dist]
openEditPanel(L: Line) : Void
showLine(L: Line) : Void
[Else]
cancelEdit(): Void
<<success: bool>>

Scenario description:

#	Subject	Subject Action	Parameters	Object Acted Upon
1	User	clicks mouse	position	Main
2	Main	sends click	position	EditTool
3	EditTool	gets nearest Line	position	LineManager
4	LineManager	sets	min_distance to 999	LineManager
5	For each line in LineManager:			
5.1	LineManager	gets line position		Line
5.1.1	If line distance < min_distance:			
5.1.2	Line	returns	min_dist, line	LineManager
5.2.2	Else: (nothing happens, not included in diagram)			
6	LineManager	returns	nearest line, distance	EditTool

7	EditTool	gets	max_distance	EditTool
8	If min_dist < max_dist:			
8.1	EditTool	edits	nearest line	Sidebar
8.2	Sidebar	shows	Line edit	Sidebar
8.3	EditTool	sends	edit line msg	Sidebar
8.4	EditTool	display	edit line	Main
8.5	Main	displays msg	“edit line”	User
9	Else:			
9.1	EditTool	cancels edit		EditTool
9.2	EditTool	display	cancel edit	Main
9.3	Main	displays msg	“canceled edit”	User