Turtle Six Use Cases

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| --- | --- |
| Name: | Start Up |
| Summary: | The launch of the application through the Java compilation |
| Preconditions: | 1. System displays Turtle Six User Interface |
| Version | 2.0 |
| Triggers: | 1. User starts up application |
| Main Success Scenario: | N/A |
| Alternative Success Scenarios: | N/A |
| Postconditions: | 1. System displays User Interface 2. System displays “Pen Down” Checkbox 3. System Displays Turn Right Button 4. System Displays turn Left Button 5. System Displays “Pixel Distance” box 6. System Displays Print Button 7. System Displays End Button 8. System Displays Direction Compass w/ box showing current compass position 9. System Displays “Lines Drawn” coordinates box 10. System Displays “Begin Point” coordinates box 11. System Displays “End point” coordinates box |
| Business Rules | N/A |
| Notes: | User has option to decide direction and distance for the line to be drawn.  Once direction and distance has been set User can use move button to continue directing the line to be drawn. |
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| --- | --- |
| Name: | Pen Status |
| Summary: | User can decide whether the pen is up or down, allowing him to either draw a line or move the pen around the canvas. |
| Version: | 2.0 |
| Preconditions: | 1. While Pen is “Down” the checkbox will be checked, if pen is “Up” checkbox will be unchecked. |
| Triggers: | 1. User click on “Pen Down” checkbox |
| Main Success Scenario: | 1. System displays “Pen Down” when box is checked 2. System Displays “Pen up” when box is unchecked. |
| Alternative Success Scenarios: | N/A |
| Business Rules | N/A |
| Notes | Pen Down is the default setting of the check box |
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| --- | --- |
| Name: | Turn Right |
| Summary: | Use can decide to move the line to the right by pressing this button |
| Preconditions: | 1. System Displays Turn Right button |
| Version | 2.0 |
| Triggers: | 1. User clicks the Turn Right Button |
| Main Success Scenario: | N/A |
| Alternative Success Scenarios: | N/A |
| Postconditions: | 1. When user presses the Right Button, message is sent to Direction Arrow |
| Business Rules | N/A |
| Notes: | Direction Arrow Keeps track of current Line direction.  Compass shows current line direction |
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|  |  |
| --- | --- |
| Name: | Turn Left |
| Summary: | Use can decide to move the line to the left by pressing this button |
| Preconditions: | 1. When user presses the Left Button, message is sent to Direction Arrow |
| Version | 2.0 |
| Triggers: | 1. User click “Turn Left” Button |
| Main Success Scenario: | N/A |
| Alternative Success Scenarios: | N/A |
| Postconditions: | 1. When user presses the Left Button, message is sent to Direction Arrow |
| Business Rules | N/A |
| Notes: | Direction Arrow Keeps track of current Line direction.  Compass shows current line direction |
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| --- | --- |
| Name: | Move |
| Summary: | Current begin point location is (0,0), once user inputs a direction, a pixel distance and presses the move button, the point location will change accordingly. |
| Preconditions: | 1. System Displays Move Button 2. User has chosen a line direction 3. User has chosen pixel distance |
| Version | 2.0 |
| Triggers: | 1. User presses the Move Button |
| Main Success Scenario: | 1. User inputs a line direction 2. User inputs a valid pixel distance within the canvas boundaries |
| Alternative Success Scenarios: | N/A |
| Postconditions: | 1. When Move button is sent, new coordinates are sent to begin point. |
| Business Rules | N/A |
| Notes: | User has to move in a valid direction with a valid pixel distance or else app will throw error. |
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| --- | --- |
| Name: | Pixel Distance |
| Summary: | Determines the distance of the line to be drawn in pixels. |
| Preconditions: | 1. System displays Pixel Distance input box |
| Version | 2.0 |
| Triggers: | 1. User inputs a valid Pixel Distance (Integer) |
| Main Success Scenario: | N/A |
| Alternative Success Scenarios: | N/A |
| Postconditions: | 1. Value from Pixel Distance is sent to Distance to keep track of how far line needs to be drawn. |
| Business Rules | N/A |
| Notes: | If user does not input a valid pixel distance, the app will default to 0 |
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| --- | --- |
| Name: | End |
| Summary: | Ends the current direction and distance of the line to be drawn. Allows for multiple lines to be drawn. |
| Preconditions: | 1. System Displays “End” Button 2. User inputs valid line direction 3. User inputs valid pixel Distance 4. User successfully moves the pen across canvas |
| Version | 2.0 |
| Triggers: | 1. User Presses End Button |
| Main Success Scenario: | 1. User chooses the direction of the line 2. User inputs a valid pixel distance 3. User successfully moves the pen across the canvas by pressing “End” Button 4. User repeats 1- 4 as many times as necessary/desired |
| Alternative Success Scenarios: | N/A |
| Postconditions: | 1. End sends a message every time it is pressed to Lines Drawn 2. Lines drawn keeps track of current and all previous lines drawn. |
| Business Rules | N/A |
| Notes: | Multiple lines can be charted, as long as they are within the boundaries of the canvas |
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| --- | --- |
| Name: | Print |
| Summary: | App prints the lines to be drawn that the User has charted. |
| Preconditions: | 1. System Displays Print Button 2. User inputs valid line direction 3. User inputs valid pixel Distance 4. User successfully moves the pen across canvas 5. User Presses End button |
| Version | 2.0 |
| Triggers: | 1. User Presses Print Button |
| Main Success Scenario: | 1. User chooses the direction of the line 2. User inputs a valid pixel distance 3. User successfully moves the pen across the canvas by pressing “End” Button 4. User repeats 1- 4 as many times as necessary/desired 5. User Pressed End button to chart lines 6. User Presses print button 7. System Displays charted lines |
| Alternative Success Scenarios: | N/A |
| Postconditions: | 1. Print send message to lines drawn and canvas 2. System prints lines with values taken from lines drawn into canvas |
| Business Rules | N/A |
| Notes: | After user presses print button, they can repeat the process to once again chose direction, distance of a line to be charted and printed. |
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| --- | --- |
| Name: | Map |
| Summary: | Keeps track of currently drawn lines on the canvas |
| Preconditions: | 1. User chooses the direction of the line 2. User inputs a valid pixel distance 3. User successfully moves the pen across the canvas by pressing “End” Button 4. User repeats 1- 4 as many times as necessary/desired 5. User Pressed End button to chart lines 6. User Presses print button 7. System Displays charted lines 8. User repeats steps 1 – 6 as desired |
| Version | 2.0 |
| Triggers: | 1. User Presses print once or multiple times |
| Main Success Scenario: | 1. User chooses the direction of the line 2. User inputs a valid pixel distance 3. User successfully moves the pen across the canvas by pressing “End” Button 4. User repeats 1- 4 as many times as necessary/desired 5. User Pressed End button to chart lines 6. User Presses print button 7. System Displays charted lines 8. User repeats steps 1 – 6 as desired 9. Map keeps track of all lines on canvas |
| Alternative Success Scenarios: | N/A |
| Postconditions: | N/A |
| Business Rules | N/A |
| Notes: | If done successfully the process can be repeated multiple times until project is completed. |
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|  |  |
| --- | --- |
| Name: | Canvas |
| Summary: | Displays all valid lines that have been successfully drawn. |
| Preconditions: | 1. System Displays canvas |
| Version | 2.0 |
| Triggers: | 1. User chooses the direction of the line 2. User inputs a valid pixel distance 3. User successfully moves the pen across the canvas by pressing “End” Button 4. User repeats 1- 4 as many times as necessary/desired 5. User Pressed End button to chart lines 6. User Presses print button 7. System Displays charted lines 8. User repeats steps 1 – 6 as desired |
| Main Success Scenario: | 1. User chooses the direction of the line 2. User inputs a valid pixel distance 3. User successfully moves the pen across the canvas by pressing “End” Button 4. User repeats 1- 4 as many times as necessary/desired 5. User Pressed End button to chart lines 6. User Presses print button 7. System Displays charted lines 8. User repeats steps 1 – 6 as desired 9. Map keeps track of all lines on canvas |
| Alternative Success Scenarios: | N/A |
| Postconditions: | N/A |
| Business Rules | N/A |
| Notes: | If done successfully the process can be repeated multiple times until project is completed. To start a new canvas user has to restart the program. |
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| --- | --- |
| Name: | Lines Drawn |
| Summary: | Keeps track of all charted lines to be drawn. |
| Preconditions: | 1. System displays canvas 2. System displays turn left/right buttons 3. System displays pixel distance box 4. System displays pen status checkbox |
| Version | 2.0 |
| Triggers: | 1. User chooses the direction of the line 2. User inputs a valid pixel distance 3. User successfully moves the pen across the canvas by pressing “End” Button 4. User repeats 1- 4 as many times as necessary/desired |
| Main Success Scenario: | 1. User chooses the direction of the line 2. User inputs a valid pixel distance 3. User successfully moves the pen across the canvas by pressing “End” Button 4. User repeats 1- 4 as many times as necessary/desired 5. User Pressed End button to chart lines |
| Alternative Success Scenarios: | N/A |
| Postconditions: | Lines Drawn keeps track of all charted lines |
| Business Rules | N/A |
| Notes: | N/A |
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| --- | --- |
| Name: | Boundaries |
| Summary: | Keeps track of liens drawn use case making sure all lines to be charted are valid (within the boundaries) |
| Preconditions: | 1. System displays canvas 2. System displays turn left/right buttons 3. System displays pixel distance box   System displays pen status checkbox |
| Version | 2.0 |
| Triggers: | 1. 1. User chooses the direction of the line 2. User inputs a valid pixel distance |
| Main Success Scenario: | 1. User chooses the direction of the line 2. User inputs a valid pixel distance 3. User successfully moves the pen across the canvas by pressing “End” Button |
| Alternative Success Scenarios: | N/A |
| Postconditions: | N/A |
| Business Rules | N/A |
| Notes: | If an invalid line is attempted to be charted, an error will be thrown and an error message will be shown to the user. |
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|  |  |
| --- | --- |
| Name: | Begin Point |
| Summary: | Keeps track of the begging point of each line to be drawn |
| Preconditions: | 1. User inputs valid direction 2. User inputs valid pixel distance |
| Version | 2.0 |
| Triggers: | 1. User inputs valid direction  2. User inputs valid pixel distance |
| Main Success Scenario: | N/A |
| Alternative Success Scenarios: | N/A |
| Postconditions: | N/A |
| Business Rules | N/A |
| Notes: | Begin point is default to ( 0, 0), each time a new line is charted, begin point will keep track of the beginning of each new line to be drawn. |
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| Date: | 6/17/2017 |

|  |  |
| --- | --- |
| Name: | End Point |
| Summary: | Keeps track of the begging point of each line to be drawn |
| Preconditions: | 1. User inputs valid direction 2. User inputs valid pixel distance |
| Version | 2.0 |
| Triggers: | 1. User inputs valid direction  2. User inputs valid pixel distance |
| Main Success Scenario: | N/A |
| Alternative Success Scenarios: | N/A |
| Postconditions: | N/A |
| Business Rules | N/A |
| Notes: | End point is default to ( 0, 0) if no pixel distance is specified by the user |
| Author: | Victor Velasco |
| Date: | 6/17/2017 |

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| --- | --- |
| Name: | Direction Arrow |
| Summary: | Keeps track of current line direction to be charted and drawn. Displays current direction to the user with a Up, Right, Down, Left compass on the screen. |
| Preconditions: | 1. System displays direction compass 2. System displays left turn button 3. System displays right turn button |
| Version | 2.0 |
| Triggers: | 1. User presses Left/ Right turn button |
| Main Success Scenario: | N/A |
| Alternative Success Scenarios: | N/A |
| Postconditions: | Direction Arrow sends message to compass to display current line direction to user |
| Business Rules | N/A |
| Notes: | Default line direction is “Right” |
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