# Product Backlog

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| **ID** | **Title** | **Description** | **Acceptance Criteria** | **Priority** | **Story Points** |
| 1.1 | Empty window on start-up | As a user,  I want an empty window when I open the application,  So that I can start drawing from scratch | **AC1**:Given the application is properly installed,  When I launch it,  Then the application should start without any runtime errors or warnings.  **AC2:** Given the application is started,  When it loads,  Then a window should be visible to the user.  **AC3**: Given the application starts,  When the window appears,  Then the drawing area should be completely empty (no shapes, text, or UI artifacts).  **AC4**: Given the application window is open,  Then the title bar should display the correct name (e.g., "Drawing App" or similar). | High | 1 |
| 1.2 | Line drawing | As a user,  I want to be able to draw a line segment,  So that I can create drawings composed of this shape | **AC1**: Given that I have selected the "line" tool,  When I click on a first point in the drawing area,  Then the starting point of the line is recorded.  **AC2**: Given that a starting point has been selected,  When I click on a second point in the drawing area,  Then a straight line segment is drawn connecting the two points.  **AC3**: Given that the line has been drawn,  Then it becomes part of the drawing and remains visible. | High | 2 |
| 1.3 | Rectangle drawing | As a user,  I want to be able to draw a rectangle,  So that I can create drawings composed of this shape | **AC1**:Given that I have selected the "rectangle" tool,  When I click on a point in the drawing area,  Then that point is recorded as one corner of the rectangle.  **AC2**:Given that a first corner has been selected,  When I click on a second point in the drawing area,  Then a rectangle is drawn using the two points as opposite corners.  **AC3**: Given that the rectangle has been drawn,  Then it becomes part of the drawing and remains visible. | High | 2 |
| 1.4 | Ellipse drawing | As a user,  I want to be able to draw an ellipse,  So that I can create drawings composed of this shape | **AC1**: Given that I have selected the "ellipse" tool,  When I click a first point in the drawing area,  Then it is recorded as the first focus of the ellipse.  **AC2**: Given that the first focus is set,  When I click a second point,  Then it is recorded as the second focus of the ellipse.  **AC3**: Given that both foci have been set,  When I click a third point,  Then the ellipse is drawn such that the sum of the distances from this point to the two foci is the major axis length of the ellipse.  **AC4**: Given that the ellipse is drawn,  Then it becomes part of the drawing and remains visible. | High | 2 |
| 1.5 | Shape colour | As a user,  I want to choose a colour for the shape (from the following options: black, white, red, green, blue, yellow, teal, purple),  So that I can create drawings composed of coloured shapes | **AC1**: Given that I have selected a colour from the available options (black, white, red, green, blue, yellow, teal, purple),  When I draw a shape (line, rectangle, or ellipse),  Then the shape is rendered in the selected colour.  **AC2**:Given that no colour has been selected,  When I draw a shape,  Then a default colour (e.g., black) is used.  **AC3**: Given that I have selected a new colour,  When I draw additional shapes,  Then each new shape uses the newly selected colour. | Medium-High | 2 |
| 1.6 | Border colour | As a user,  I want to choose a border colour for the shape (from the following options: black, white, red, green, blue, yellow, teal, purple),  So that I can create drawings composed of coloured shapes | **AC1**:Given that I have selected a border colour from the available options (black, white, red, green, blue, yellow, teal, purple),  When I draw a shape (line, rectangle, or ellipse),  Then the border of the shape is rendered in the selected colour.  **AC2**: Given that no border colour has been explicitly selected,  When I draw a shape,  Then a default border colour (e.g., black) is applied.  **AC3**: Given that I change the border colour selection,  When I draw a new shape,  Then the new shape's border uses the newly selected colour. | Medium-High | 2 |
| 1.7 | Saving the drawing in a file | As a user,  I want to save a drawing into a file,  So that I can access it whenever I want | **AC1**: Given that I have created a drawing\*,  When I click the "Save" button,  Then the current drawing is saved as a file on my device.  **AC2**:Given that I save the drawing,  Then the file should have a meaningful default name (e.g., drawing\_001, or include timestamp).  **AC3**: Given that a drawing is saved,  Then the visual appearance of the file reflects exactly what was on the canvas at the moment of saving. | High | 8 |
| 1.8 | Opening a drawing via file | As a user,  I want to load a drawing from a file,  So that I can keep drawing on a previously saved canvas | **AC1**: Given that I have a valid drawing file saved on my device,  When I click the "Open file" button and select the file,  Then the drawing is loaded and displayed on the canvas.  **AC2**: Given that I load a drawing,  Then all the shapes (lines, rectangles, ellipses, colours, borders, etc.) appear as they were at the time of saving.  **AC3**:Given that I open a file of unsupported format or invalid content,  Then the application shows an appropriate error message and does not crash.  **AC4**: Given that I have unsaved work on the current canvas,  When I attempt to open a new file,  Then the application prompts me to save or discard current changes before loading the new drawing. | High | 8 |
| 2.1 | Shape of the drawing | As a user,  I want to select a shape of the drawing with a mouse operation,  So that I can freely edit it | **AC1**: Given that I have created one or more shapes on the canvas,  When I click on a shape with the mouse,  Then that shape becomes selected.  **AC2**: Given that I click outside any shape,  Then any currently selected shape becomes deselected. | High | 1 |
| 2.2 | Delete operation | As a user,  I want to be able to delete a shape of the drawing,  So that I can remove an element I no longer need | **AC1**: Given that I have created one or more shapes on the canvas and I have selected a shape,  When I click the "Delete" button,  Then the selected shape is removed from the canvas.  **AC2**: Given that no shape is selected,  When I click the "Delete" button,  Then nothing happens.  **AC3**:Given that I delete a shape,  Then the shape is permanently removed and no longer visible or editable. | High | 2 |
| 2.3 | Shape preview | As a user,  I want to see a shape preview I’m drawing.  So that I can place it precisely before finalizing it | **AC1**: Given that I have selected a shape tool (e.g., line, rectangle, ellipse),  When I click and start dragging the cursor on the canvas,  Then a preview of the shape appears and updates in real-time as I move the cursor.  **AC2**: Given that a shape preview is active,  Then it is rendered with a distinct visual style (e.g., dashed border, semi-transparent fill) to indicate that it is not final.  **AC3**: Given that I release the mouse button (or complete the drawing action),  Then the preview becomes a finalized shape, rendered normally on the canvas. | High | 3 |
| 2.4 | Move operation | As a user,  I want to be able to move a shape of the drawing,  So that I can freely adjust my drawing layout | **AC1**: Given that I have created one or more shapes on the canvas and I have selected a shape,  When I click and drag the shape with the mouse,  Then the shape follows the cursor and moves accordingly.  **AC2**: Given that I am dragging a shape,  When I release the mouse button,  Then the shape is placed at its final position on the canvas.  **AC3**: Given that no shape is selected,  When I click and drag on the canvas,  Then no shape is moved.  **AC4**: Given that I move a shape,  Then its visual style (e.g., colour, border) remains unchanged.  **AC5**: Given that I move a shape near the edge of the canvas,  Then the shape cannot be dragged outside the visible drawing area | High | 5 |
| 2.5 | Changing colour operation | As a user,  I want to be able to change the colour of a shape (or its border) of the drawing,  So that I can further customize its appearance | **AC1**: Given that I have created a shape and selected it,  When I click the "Change fill colour" button and choose a new colour,  Then the fill of the selected shape is updated with the new colour.  **AC2**: Given that I have selected a shape,  When I click the "Change border colour" button and choose a new colour,  Then the border of the selected shape is updated with the new colour.  **AC3**: Given that no shape is selected,  When I attempt to change a colour,  Then no change is applied and the application may show a message like “No shape selected”.  **AC4**: Given that I have selected a shape with an existing fill and/or border colour,  Then changing the colour updates only the selected property (fill or border), not both unless explicitly done.  **AC5**:Given that I change the colour of a shape,  Then the shape remains in the same position and retains its other properties | Medium-High | 2 |
| 2.6 | Changing size operation | As a user,  I want to be able to change the size of a shape of the drawing,  So that I can further customize its appearance | **AC1**: Given that I have created a rectangle or an ellipse and selected it,  When I click and drag its bottom right handler,  Then the shape is resized freely according to the direction of the drag.  **AC2**: Given that I have selected a shape,  When I click and drag from its handler,  Then the shape is resized while maintaining its original proportions (aspect ratio is locked).  **AC3**: Given that a shape is selected,  Then resize handles are visible and enabled around the shape.  **AC4**: Given that I resize a shape,  Then all other properties of the shape (e.g., fill colour, border, type) remain unchanged.  **AC5**: Given that I resize a shape,  Then the resizing should be visible in real time as I drag.  **AC6**: Given that no shape is selected,  When I attempt to resize,  Then no resizing occurs. | Medium-High | 8 |
| 2.7 | Cut operation | As a user,  I want to be able to cut a shape of the drawing,  So that I can paste it elsewhere whenever I want | **AC1**: Given that I have created a shape and selected it, When I click the "Cut" button, Then the selected shape is removed from the canvas and stored in the clipboard. **AC2**: Given that a shape has been cut, Then it can be pasted elsewhere using the "Paste" operation. **AC3**: Given that no shape is selected, When I click the "Cut" button, Then nothing happens and no content is added to the clipboard. **AC4**: Given that I cut a shape, Then all its properties (e.g., size, position, fill colour, border) are preserved in the clipboard for later use. | High | 2 |
| 2.8 | Copy operation | As a user,  I want to be able to copy a shape of the drawing,  So that I can paste it elsewhere whenever I want | **AC1**: Given that I have created a shape and selected it, When I click the "Copy" button, Then a copy of the selected shape is added to the clipboard without removing it from the canvas. **AC2**: Given that a shape has been copied, Then I can paste it onto the canvas using the "Paste" operation. **AC3**: Given that no shape is selected, When I click the "Copy" button, Then nothing happens and the clipboard remains unchanged. **AC4**: Given that I copy a shape, Then all properties of the shape (e.g., size, position, fill colour, border) are preserved in the clipboard. **AC5**: Given that I copy a shape, Then the original shape remains fully intact and unmodified on the canvas. **AC6**: Given that multiple shapes are selected (if multi-selection is supported), When I click "Copy", Then all selected shapes are copied together to the clipboard. | High | 2 |
| 2.9 | Paste operation | As a user,  I want to be able to paste a shape into the drawing,  So that I can reuse shapes within the drawing | **AC1**: Given that a shape has been previously cut or copied to the clipboard, When I click the "Paste" button, Then a copy of the shape is added to the canvas. **AC2**: Given that I paste a shape, Then it should appear in a default position (e.g., centered or slightly offset from the original if pasted multiple times). **AC3**: Given that the shape was copied, Then the original remains on the canvas, and the pasted shape is an identical duplicate. **AC4**: Given that the shape was cut, Then the pasted shape represents the moved object and retains all its original properties. **AC5**: Given that there is no shape in the clipboard, When I click "Paste", Then nothing happens, or an appropriate message is displayed (e.g., "Clipboard is empty"). **AC6**: Given that I paste a shape, Then all its properties (e.g., size, fill colour, border colour, type) are preserved in the new instance. **AC7**: Given that multiple shapes were copied or cut, When I click "Paste", Then all shapes are pasted together, maintaining their relative positions. **AC8**: Given that I paste a shape, Then I should be able to move, edit, or delete it like any other shape. | High | 2 |
| 2.10 | Undo operation | As a user,  I want to be able to undo an operation with no limit,  So that I can restore the canvas to any previous state | **AC1**: Given that I have performed at least one operation,  When I click the "Undo" button,  Then the last operation is reverted, and the canvas is updated to reflect the previous state.  **AC2**: Given that I have performed multiple operations,  When I click "Undo" repeatedly,  Then each previous state is restored step-by-step, with no limit on the number of undo levels.  **AC3**: Given that I have not performed any operation,  When I click "Undo",  Then nothing happens, and the canvas remains unchanged.  **AC4**: Given that I undo an operation,  Then all properties affected by that operation (e.g., position, size, colour, presence on canvas) are accurately restored.  **AC5**: Given that I undo a cut, delete, or move operation,  Then the affected shape is returned to its original state and position on the canvas.  **AC6**: Given that I undo a draw operation,  Then the shape that was added is removed. | High | 8 |
| 2.11 | Bring to the front | As a user,  I want to be able to bring a shape to the front,  So that I can make an old shape more visible than newer ones | **AC1**: Given that there are multiple overlapping shapes on the canvas and one is selected,  When I click the "Bring to the Front" button,  Then the selected shape is moved above all other shapes, making it fully visible.  **AC2**: Given that no shape is selected,  When I click the "Bring to the Front" button,  Then nothing happens.  **AC3**: Given that the selected shape is already in the foreground,  When I click "Bring to the Front",  Then its position remains unchanged.  **AC4**: Given that I bring a shape to the front,  Then its position on the canvas (X/Y coordinates) remains unchanged — only its z-order is updated.  **AC5**: Given that I undo the operation,  Then the shape returns to its previous layering order.  **AC6**: Given that multiple shapes are selected (if supported),  When I click "Bring to the Front",  Then all selected shapes are brought to the top, preserving their relative stacking order. | Medium-High | 2 |
| 2.12 | Send to the back | As a user,  I want to be able to send a shape to the back,  So that I can make a new shape less visible than old ones | **AC1**: Given that there are multiple overlapping shapes on the canvas and one is selected,  When I click the "Send to the Back" button,  Then the selected shape is moved behind all other shapes, placing it at the bottom of the stacking order.  **AC2**: Given that no shape is selected,  When I click the "Send to the Back" button,  Then nothing happens.  **AC3**: Given that the selected shape is already at the back,  When I click "Send to the Back",  Then its position remains unchanged.  **AC4**: Given that I send a shape to the back,  Then its position on the canvas (X/Y coordinates) remains unchanged — only its z-order is updated.  **AC5**: Given that I undo the operation,  Then the shape returns to its previous layering order.  **AC6**: Given that multiple shapes are selected (if supported),  When I click "Send to the Back",  Then all selected shapes are sent to the back together, preserving their relative stacking order. | Medium-High | 2 |
| 3.1 | Zoom levels | As a user,  I want to be able to zoom in and out of the canvas,  So that I can better view specific part of the canvas | **AC1**: Given that the drawing area is displayed,  When the user selects a different zoom level (e.g., via a slider, buttons, or dropdown),  Then the entire drawing content scales up or down accordingly.  **AC2**: Given that zooming occurs,  Then the shapes and canvas content maintain their proportions and aspect ratio (no distortion).  **AC3**: Given that the user zooms in,  Then details become larger and easier to see, while the canvas area may become scrollable.  **AC4**: Given that the user zooms out,  Then the content becomes smaller, showing a larger portion of the drawing area.  **AC5**: Given that a zoom level is applied,  Then the position of shapes relative to each other remains unchanged.  **AC6**: Given that the zoom level reaches minimum or maximum limits,  Then further zooming in or out is disabled or prevented.  **AC7**: Given that the user zooms,  Then the zoom level control UI updates to reflect the current zoom percentage or factor. | Medium | 3 |
| 3.2 | Multiple predefined zoom levels | As a user,  I want at least 4 different levels of zooming,  So that I can easily zoom in and out of the canvas. | **AC1**: Given that the zoom control is available,  When the user selects one of the predefined zoom levels (at least 4 levels, e.g., 50%, 100%, 150%, 200%),  Then the drawing area adjusts to the selected zoom level.  **AC2**: Given that the user selects a predefined zoom level,  Then the drawing content scales proportionally without distortion.  **AC3**: Given that a zoom level is selected,  Then the zoom control visibly indicates the current zoom level.  **AC4**: Given that the user changes zoom levels repeatedly,  Then the zoom transitions smoothly and accurately to the selected level.  **AC5**: Given that the user selects the same zoom level currently active,  Then no unnecessary redraw or scaling occurs.  **AC6**: Given that the user selects a zoom level outside the predefined options,  Then the selection is either disallowed or snapped to the nearest available level. | Medium | 3 |
| 3.4 | Scrollable Canvas | As a user,  I want to scroll the drawing area when it's larger than the window,  So that I can access hidden areas of the drawing | **AC1**. Given that I write drawing area width and height, When the the drawing area realizes a new width and/or height has been set, Then the drawing area changes its size according to the input set by the user; **AC2**. Given that the drawing area exceeds the visible window size, When the user scrolls horizontally or vertically, Then the viewport moves accordingly, revealing different parts of the drawing | Medium | 3 |
| 3.5 | Grid on / Grid off | As a user,  I want to turn the background grid on or off,  So that I can chose whether to use it or hide it | **AC1**: Given that a grid overlay is available,  When the user enables the grid toggle,  Then the grid is displayed on the background of the canvas.  **AC2**: Given that the grid is currently visible,  When the user disables the grid toggle,  Then the grid is hidden from the canvas.  **AC3**: Given that the grid is shown or hidden,  Then the change is immediate and does not affect the existing shapes on the canvas.  **AC4**: Given that the grid visibility has been changed,  Then the new state (on/off) is retained until the user changes it again, even if switching tools.  **AC5**: Given that I zoom in or out of the canvas,  Then the grid (if enabled) scales proportionally to remain consistent with the zoom level.  **AC6**: Given that the grid is visible,  Then it does not obstruct or alter the drawing or selection of shapes (i.e., purely a visual aid).  **AC7**: Given that snapping to grid is a feature (if supported),  Then turning off the grid does not necessarily disable snapping, unless specified elsewhere. | Medium | 2 |
| 3.6 | Adjustable  Grid Size | As a user,  I want to choose the spacing of the grid lines,  So that I can easily change size | **AC1**: Given that the grid is currently visible,  When the user changes the grid spacing setting (e.g., via a slider, dropdown, or input field),  Then the canvas updates to show the new spacing between grid lines.  **AC2**: Given that the user selects a larger grid size,  Then the grid lines become more widely spaced on the canvas.  **AC3**: Given that the user selects a smaller grid size,  Then the grid lines become more densely spaced.  **AC4**: Given that the grid spacing is changed,  Then existing shapes and drawings on the canvas are not affected — only the grid appearance is updated.  **AC5**: Given that the grid is not visible,  When the user adjusts the grid spacing,  Then the change is applied, and the updated spacing will be shown when the grid is made visible again.  **AC6**: Given that the user zooms in or out,  Then the adjusted grid spacing scales proportionally with the zoom level.  **AC7**: Given that snapping to grid is enabled (if applicable),  Then snapping behavior uses the new grid spacing immediately after the change. | Medium | 3 |
| 4.1 | Drawing an irregular polygon | As a user,  I want to draw a polygon that isn’t regular,  So that I’m not limited by default shapes | **AC1**: Given that I have selected the “polygon” tool,  When I click in the drawing area,  Then a vertex of the polygon is created at the cursor position.  **AC2**: Given that I continue clicking in the drawing area,  Then each new click adds a new vertex to the polygon.  **AC3**: Given that I have added at least two vertices,  Then a visible preview line connects the last vertex to the current cursor position.  **AC4**: Given that I want to complete the polygon,  When I double-click or click on the first vertex (or press a confirm key),  Then the polygon is closed, and the final shape is created.  **AC5**: Given that I am drawing a polygon,  When I press the Escape key,  Then the drawing operation is cancelled, and no shape is created.  **AC6**: Given that snapping is enabled (e.g., to grid or angles),  Then each vertex position snaps accordingly while drawing.  **AC7**: Given that I finish drawing an irregular polygon,  Then I can still select, move, resize, or edit it like any other shape. | Medium | 8 |
| 4.2 | Text as shape | As a user,  I want to write a text as a shape,  So that I can further customize the drawing using elements that aren’t shapes | **AC1**: Given that I have clicked the “text” button,  When I click on the drawing area,  Then a text input area is created at the position of the cursor.  **AC2**: Given that the text area is active,  Then I can type and edit text directly within the shape.  **AC3**: Given that I finish typing (e.g., by pressing Enter or clicking outside),  Then the text is rendered as a shape element on the canvas.  **AC4**: Given that the text shape is selected,  Then I can move, resize, delete, or change its colour and border like any other shape.  **AC5**: Given that I resize the text shape,  Then the font size scales proportionally with the shape unless otherwise specified.  **AC6**: Given that I click the text button again and click elsewhere on the canvas,  Then a new text shape is created at that position.  **AC7**: Given that I apply a font or style setting (e.g., bold, italic, font family),  Then the text shape reflects the chosen styling.  **AC8**: Given that snapping is enabled,  Then the position of the text shape snaps to the grid or other guidelines when placed or moved. | Medium | 3 |
| 4.3 | Rotate a shape | As a user,  I want to rotate a shape of the drawing,  So that I can easily edit it | **AC1**: Given that I have selected an existing shape on the canvas,  When I click the “rotate” button,  Then the shape is rotated by a default increment (e.g., 15° or 45°).  **AC2**: Given that the shape has been rotated,  Then its position and proportions are preserved, but its orientation changes accordingly.  **AC3**: Given that I repeatedly click the rotate button,  Then the shape continues to rotate by the same angle increment with each click.  **AC4**: Given that I want precise control,  When I hold a modifier key (e.g., Shift) or open a rotation input,  Then I can enter or select a custom rotation angle.  **AC5**: Given that snapping is enabled,  Then the shape rotation snaps to common angles (e.g., 0°, 45°, 90°) unless overridden.  **AC6**: Given that the shape is rotated,  Then it remains fully interactive, allowing me to move, resize, or recolour it afterward.  **AC7**: Given that I undo the rotation action,  Then the shape returns to its previous orientation. | Medium | 2 |
| 4.4 | Mirror a shape | As a user,  I want to mirror a shape of the drawing, both vertically and horizontally,  So that I can easily edit it | **AC1**: Given that I have selected an existing shape on the canvas,  When I click the “mirror” button,  Then the shape is mirrored either vertically or horizontally depending on the selected option.  **AC2**: Given that I click “mirror vertically,”  Then the shape is flipped along its vertical axis (left ↔ right).  **AC3**: Given that I click “mirror horizontally,”  Then the shape is flipped along its horizontal axis (top ↔ bottom).  **AC4**: Given that the shape is mirrored,  Then its size and position remain consistent relative to the original center.  **AC5**: Given that the shape contains text or asymmetric features,  Then these elements are also mirrored accordingly.  **AC6**: Given that snapping is enabled,  Then the mirrored shape snaps to the same grid or alignment rules as the original.  **AC7**: Given that I want to undo the mirror operation,  Then clicking the undo button restores the shape to its previous orientation.  **AC8**: Given that I have multiple shapes selected,  Then the entire group can be mirrored together as one unit. | Medium | 2 |
| 4.5 | Stretch a shape | As a user,  I want to stretch a shape of the drawing, both vertically and horizontally,  So that I can easily edit it | **AC1**: Given that I have selected an already drawn shape,  When I click and drag a side border,  Then the shape is stretched in that direction only (horizontally or vertically).  **AC2**: Given that I click and drag a corner handle,  Then the shape is stretched both horizontally and vertically, modifying its proportions.  **AC3**: Given that I hold a modifier key (e.g., Shift),  Then the shape is resized proportionally rather than being stretched.  **AC4**: Given that I am dragging to stretch the shape,  Then a live preview of the stretch is shown during the interaction.  **AC5**: Given that snapping is enabled,  Then the stretched dimensions snap to the nearest grid or guide.  **AC6**: Given that I complete the stretching operation,  Then the new shape dimensions are immediately applied and editable.  **AC7**: Given that the shape includes text or grouped elements,  Then all components are stretched proportionally along with the shape.  **AC8**: Given that I press the Undo button after a stretch,  Then the shape reverts to its original dimensions. | Medium | 3 |
| 5.1 | Group shape | As a user,  I want to group two or more shapes in one,  So that I can edit them at the same time | **AC1**: Given that I have selected two or more shapes,  When I click the “group” button,  Then the selected shapes are combined into one grouped shape.  **AC2**: Given that the shapes are grouped,  Then I can move, resize, rotate, delete, or style them as a single unit.  **AC3**: Given that I perform an operation (e.g., change color or stretch) on a group,  Then the operation affects all shapes within the group simultaneously.  **AC4**: Given that I select a grouped shape,  Then the individual components are not directly editable unless ungrouped.  **AC5**: Given that I click the “ungroup” button,  Then the grouped shape is split back into the original individual shapes, retaining their positions and properties.  **AC6**: Given that I select a group,  Then its bounding box reflects the overall dimensions of all included shapes.  **AC7**: Given that snapping is enabled,  Then the entire group snaps to the grid or other alignment guides as a single shape.  **AC8**: Given that I undo a grouping operation,  Then the shapes return to their previous ungrouped state. | Medium-Low | 5 |
| 5.2 | Ungroup shape | As a user,  I want to ungroup a grouped shape,  So that I can edit each shape separately | **AC1**: Given that I have selected a grouped shape,  When I click on the “ungroup” button,  Then the group is split into its original individual shapes.  **AC2**: Given that the shapes are ungrouped,  Then I can move, edit, delete, or style each shape independently.  **AC3**: Given that the group was previously transformed (e.g., moved, resized),  Then the individual shapes retain the final position, size, and styling applied while grouped.  **AC4**: Given that the shape is not a group,  Then clicking the “ungroup” button has no effect.  **AC5**: Given that I undo the ungroup operation,  Then the shapes are restored to their grouped state.  **AC6**: Given that I reselect some or all of the ungrouped shapes,  Then I can reapply grouping as desired.  **AC7**: Given that snapping is enabled,  Then the ungrouped shapes can each individually snap to the grid or alignment guides. | Medium-Low | 3 |
| 5.3 | Saving a group of shapes | As a user,  I want to save grouped shapes as a custom shape,  So that I can immediately use that custom shape | **AC1**: Given that I have selected a grouped shape,  When I click the “save custom shape” button,  Then the grouped shape is saved as a new reusable custom shape.  **AC2**: Given that the custom shape is saved,  Then it appears in the custom shape library or palette, ready for future use.  **AC3**: Given that I save a custom shape,  Then I am prompted to enter a name or confirm a default name for the shape.  **AC4**: Given that I insert the saved custom shape later,  Then it behaves like a normal grouped shape (can be resized, moved, ungrouped, etc.).  **AC5**: Given that the custom shape is saved,  Then all styles, positions, and transformations of the grouped shapes are preserved.  **AC6**: Given that I edit the original group after saving,  Then the saved custom shape remains unchanged, unless manually updated or replaced.  **AC7**: Given that I want to overwrite an existing custom shape,  Then I am prompted to confirm replacement before saving.  **AC8**: Given that I undo the save operation,  Then the custom shape is removed from the library, and the group remains selected on the canvas. | Low | 8 |
| 5.4 | Use grouped shapes | As a user,  I want to use a custom shape previously saved,  So that I don’t have to re-create the custom shape | **AC1**: Given that I have selected a saved custom shape from the library,  When I click on the drawing area,  Then a copy of the custom shape is drawn at the position of my cursor.  **AC2**: Given that the custom shape is placed on the canvas,  Then I can move, resize, rotate, recolor, or ungroup it just like any other shape.  **AC3**: Given that multiple copies of the custom shape can be placed,  Then each instance behaves independently.  **AC4**: Given that the custom shape contains multiple shapes grouped together,  Then the group’s relative positions and styles are preserved upon insertion.  **AC5**: Given that I want to cancel the insertion,  Then clicking outside the canvas or pressing Esc cancels the operation without placing the shape.  **AC6**: Given that I undo the insertion,  Then the last placed custom shape is removed from the canvas.  **AC7**: Given that snapping is enabled,  Then the inserted custom shape snaps to the grid or alignment guides at the placement position. | Low | 3 |
| 5.5 | Save custom shape after the saving of the file | As a user,  I want to save the drawing file, including any custom shape,  So that I don’t need to re-create the shape when I open the saved file | **AC1**: Given that I have created and saved one or more custom shapes in my drawing,  When I click on the “save file” button,  Then the custom shapes are saved within the drawing file.  **AC2**: Given that I open a previously saved drawing file,  Then all the custom shapes saved in that file are available and loaded in the custom shapes library.  **AC3**: Given that I save a file without any custom shapes,  Then the file is saved normally without any custom shape data.  **AC4**: Given that I modify or add new custom shapes before saving,  Then the latest versions of all custom shapes are saved along with the file.  **AC5**: Given that I save the file multiple times,  Then the custom shapes data remains consistent and up-to-date with the last save.  **AC6**: Given that I undo or revert changes before saving,  Then only the custom shapes present at the moment of saving are stored in the file.  **AC7**: Given that I share or move the saved drawing file to another system,  Then all custom shapes saved with the file are preserved and accessible. | Medium-Low | 8 |
| 5.6 | Export custom shape in a library | As a user,  I want to export custom shapes to a library file,  So that I can import all custom shapes whenever I want | **AC1**: Given that I have saved one or more custom shapes in the application,  When I click the “export to library” button,  Then a file containing all saved custom shapes is generated and saved externally.  **AC2**: Given that the export operation is completed successfully,  Then I am notified that the custom shapes library file has been saved.  **AC3**: Given that no custom shapes have been saved,  Then clicking the export button results in a message indicating there are no custom shapes to export.  **AC4**: Given that I choose a location and name for the export file,  Then the file is saved to that location with the specified name.  **AC5**: Given that I export multiple times,  Then each export creates a separate file with the custom shapes at the time of export.  **AC6**: Given that the export file is opened by the application later,  Then all custom shapes in the file are correctly imported and usable.  **AC7**: Given that the export file format is standardized,  Then it can be shared or transferred between different installations of the application. | Low | 8 |
| 5.7 | Import custom shape from a library | As a user,  I want to import custom shapes from a library file,  So that I can use all custom shapes I have previously created | **AC1**: Given that I have an external custom shapes library file,  When I click the “import from library” button and select the file,  Then all custom shapes from the file are loaded and added to my application’s custom shapes library.  **AC2**: Given that some custom shapes in the imported library have the same name as existing ones,  Then I am prompted to choose whether to overwrite, rename, or skip those shapes.  **AC3**: Given that the import is successful,  Then I am notified that the custom shapes have been imported and are ready to use.  **AC4**: Given that the imported library file is invalid or corrupted,  Then an error message is shown and no shapes are imported.  **AC5**: Given that the import operation is canceled by the user,  Then no changes are made to the existing custom shapes library.  **AC6**: Given that I import shapes multiple times,  Then each import adds new shapes without duplicating shapes already present (unless overwritten explicitly).  **AC7**: Given that I import a large number of custom shapes,  Then the application remains responsive, and the shapes are imported correctly. | Low | 8 |