| **Num** | **Requirement** | **Priority** | **Requirement Category** |
| --- | --- | --- | --- |
| 1 | Multiple shapes together | 1 | User interface |
| 2 | Line segments | 1 | Functional |
| 3 | Rectangles | 1 | Functional |
| 4 | Ellipses | 1 | Functional |
| 5 | Default window | 1 | User interface |
| 6 | Menu of available shapes | 1 | User interface |
| 7 | Position of new shapes | 1 | Business flow |
| 8 | Color picker for choosing the contour color | 2 | User interface |
| 9 | Color picker for choosing the internal color | 2 | User interface |
| 10 | Shapes with colored contour | 2 | Functional |
| 11 | Colored shapes | 2 | Functional |
| 12 | Option bar on top of the window | 2 | User interface |
| 13 | Save a drawing | 2 | Business flow |
| 14 | Load a drawing | 2 | Business flow |
| 15 | Focus a shape | 3 | Business flow |
| 16 | Menu of available operations on a shape | 3 | User interface |
| 17 | Moving an already inserted shape | 4 | Business flow |
| 18 | Changing internal color of an inserted shape | 4 | Business flow |
| 19 | Changing contour color of an inserted shape | 4 | Business flow |
| 20 | Resizing an already inserted shape | 4 | Business flow |
| 21 | Cut operation | 4 | Business flow |
| 22 | Copy operation | 4 | Business flow |
| 23 | Paste operation | 4 | Business flow |
| 24 | Undo operation | 4 | Functional |
| 25 | To the front operation | 4 | Business flow |
| 26 | To the back operation | 4 | Business flow |
| 27 | List of inserted shapes | 3 | User interface |
| 28 | Zoom of the drawing window | 5 | User interface |
| 29 | Scrollable drawing surface | 5 | User interface |
| 30 | Show or hide grid | 6 | User interface |
| 31 | Size of the grid | 6 | Functional |
| 32 | Insert arbitrary polygon | 7 | Functional |
| 33 | Insert text string | 7 | Functional |
| 34 | Size of the characters | 8 | Business flow |
| 35 | Rotate a shape | 8 | Business flow |
| 36 | Mirror a shape | 8 | Business flow |
| 37 | Stretch a shape | 8 | Business flow |
| 38 | Group shapes | 9 | Functional |
| 39 | Ungroup shapes | 9 | Functional |
| 40 | Create a shape creation command | 9 | Business flow |
| 41 | Saving a shape creation command | 9 | Business flow |
| 42 | Execute a shape creation command | 9 | Functional |
| 43 | Export a set of shape creation commands | 10 | Functional |
| 44 | Import a set of shape creation commands | 10 | Functional |

We define 11 levels of priorities from 1 as the highest to 10 as the lowest.

In the following paragraph we introduce a description of the requirements with User Story (a) and Acceptance Criteria (b).

All the Stories are written **as a user.**

## User Story and Acceptance Criteria

### Multiples shapes together

* 1. I want to add one or more geometrical shapes to the drawing window

so that I can make composed drawings.

* 1. If I’ve already added at least one figure to the drawing window

when I try to add another figure

then the new figure will be inserted together with the already inserted ones.

### Line segments

* 1. I want to be able to add line segments to the current drawing.
  2. I want the line segment shape to be shown in the menu of available shapes.

### Rectangles

* 1. I want to be able to add rectangles to the current drawing.
  2. I want the rectangle shape to be shown in the menu of available shapes.

### Ellipses

* 1. I want to be able to add ellipses to the current drawing.
  2. I want the ellipse shape to be shown in the menu of available shapes.

### Default window

* 1. At the start of the program

I want to see an empty drawing window

in which I can add geometrical shapes.

### Menu of available shapes

* 1. I want to see a menu of available shapes that I can use

so that I can easily choose a shape.

* 1. I want to be able to see a menu on the left side of the window containing all the shapes that can be added to the drawing window

so that I can select one of them by clicking on it.

### Position of new shapes

* 1. I want to be able to select, using the mouse on the window, the position of the new shape.
  2. If I’ve selected a shape from the menu of the available shapes

when I left click with the mouse on the drawing window

then I want that the selected shape is added in that position.

### Color picker for choosing the contour color

1. I want to see a color picker for choosing the contour color of the next shape that will be added to the drawing window.
2. I want to see a color picker on the left side of the window

so that I can select the contour color of the next shape that will be added to the drawing window.

### Color picker for choosing the internal color

1. I want to see a color picker for choosing the internal color of the next shape with a closed contour that will be added to the drawing window.
2. I want to see a color picker on the left side of the window

so that I can select the internal color of the next shape with a closed contour that will be added to the drawing window.

### Shapes with colored contour

1. I want to be able to add to the drawing window shapes with different contour colors.
2. Given that I’ve selected a shape from the menu of available shapes and I’ve selected a contour color from the relative color picker

when I add the selected shape in the drawing window

then I want that the contour of the added shape will be of the selected color.

### Colored shapes

1. I want to be able to add to the drawing window shapes with a closed contour characterized by different internal colors.
2. Given that I’ve selected a shape with a closed contour from the menu of available shapes and I’ve selected an internal color from the relative color picker

when I add the selected shape in the drawing window

then I want that the interior of the added shape will be of the selected color.

### Option bar on top of the window

1. I want to be able to see the operations that can be performed on the drawing window.
2. I want to see an option bar on top of the window containing the operations that can be performed on the window

so that I can perform one of them by clicking on it.

### Save a drawing

1. I want to be able to save the drawing window

so that I can have a file in which is saved the current state of it.

1. When I left click on the save button in the option bar of the window

then a save window is opened.

### Load a drawing

1. I want to be able to load a drawing from a file

so that I can continue to work on an already started drawing.

1. Given that I have a file in which is saved a drawing

when I click on the load button in the option bar of the window

then a load window is opened and if a drawing file is selected, then the current content of the drawing window will be overwritten by the content of the file.

### Focus a shape

1. If there is at least one shape in the window,

I want to be able to give focus to one of them.

1. When I left click on a shape in the list of inserted shapes

then that shape appears with a blue halo in the drawing window.

### Menu of available operations on a shape

1. If there is at least one shape in the window,

I want to be able to see all the operations that can be performed on it.

1. Given that I’m a user

when I right click on an item in the list of inserted shapes

then I want to see a menu containing the operations that can be performed on it.

### Moving an already inserted shape

1. I want to be able to move a shape to a different position from the current one.
2. When I open the menu of the available operations on a shape and I click on the move button

then I want to be able to change the position of it through a left click on the drawing window.

### Changing internal color of an inserted shape

1. I want to be able to change the internal color of an already inserted closed contour shape.
2. When I open the menu of the available operations on a shape with a closed contour and I click on the change color button

then I want that the internal color of that shape is setted to the selected color of the relative color picker.

### Changing contour color of an inserted shape

1. I want to be able to change the contour color of an already inserted shape.
2. When I open the menu of the available operations on a shape and I click on the change contour color button

then I want that the contour color of that shape is setted to the selected color of the relative color picker.

### Resizing an already inserted shape

1. I want to be able to resize a shape already inserted in the drawing window.
2. When I open the menu of the available operations on a shape and I click on the resize button

then I want to be able to resize it through left clicks.

### Cut Operation

1. I want to be able to perform a cut operation on an already inserted shape

so that i can remove the shape from the window and save it on the clipboard.

1. When I select the list of the available operations on a shape and I click on the cut button

then I want to be able to perform a cut operation on it, removing the shape from the drawing window and copying it to the clipboard.

### Copy Operation

1. I want to be able to perform a copy operation on an already inserted shape

so that I can copy the shape from the window and save it on the clipboard.

1. When I select the list of the available operations on a shape and I click on the copy button

then I want to be able to perform a copy operation on it, saving the shape on the clipboard.

### Paste Operation

1. I want to be able to perform a paste operation of a shape previously saved on the clipboard

so that I can add the shape into the drawing window.

1. Given that I’ve previously performed a cut or copy operation on a shape

when I left click on the drawing window

then I want that the shape previously saved on the clipboard is added to it.

### Undo Operation

1. I want to be able to perform the undo of every operations that change the state of the drawing, without limits on the number of undo levels

so that i can move back to a previous drawing state.

1. When I left click on the undo button in the option bar of the window

then I want the drawing to be taken back to its previous state.

### To the front operation

1. I want to be able to take an inserted shape in front of the others.
2. When I select the list of the available operations on a shape and I click on the to the front button

then I want the selected shape to be put in front of the others present in the drawing window.

### To the back operation

1. I want to be able to take an inserted shape in the back of the others.
2. When I select the list of the available operations on a shape and I click on the to the back button

then I want the selected shape to be put in back of the others present in the drawing window.

### List of inserted shapes

1. I want to see a list of the shapes that has been inserted in the drawing window

so that I can easily have an overview and I can perform operations on them.

1. I want to be able to see a list on the right side of the window containing all the shapes that have been added to the drawing window

so that I can perform operations on one of them by clicking on it.

### Zoom of the drawing window

* 1. I want to be able to zoom the drawing window with at least 8 different levels

so that I can view the drawn shapes bigger or smaller .

* 1. When I click on the zoom button

then I want the drawing to be enlarged or dwindled.

### Scrollable drawing surface

* 1. I want a drawing surface that is larger than the size of the window

so that I have a bigger surface where I can draw.

* 1. When I scroll on the drawing

then I want to see the portion of the drawing that interests me.

### Show or hide grid

* 1. I want an option for show/hide a grid on the drawing

so that I can place the shapes more precisely.

* 1. When I check the grid option

So I want to see a grid over the drawing or if it is already visible it gets hidden.

### Size of the grid

* 1. I want to choose the size of the grid

so that I can adapt my drawing to real problems more easily.

### Insert arbitrary polygon

* 1. I want to be able to enter an arbitrary polygon, not just a regular one, as a shape.

### Insert text string

* 1. I want to be able to enter a text string as a shape.

### Size of the characters

* 1. I want to be able to choose the size of the characters

### Rotate a shape

* 1. I want to be able to rotate a shape by an arbitrary angle, not necessarily a multiple of 90°.

### Mirror a shape

* 1. I want to be able to mirror a shape horizontally or vertically.

### Stretch a shape

* 1. I want to be able to stretch a shape horizontally or vertically.

### Group shapes

* 1. I want to be able to select more than one shape and group them

so that they behave as a single shape in successive operations.

### Ungroup shapes

* 1. I want to be able to ungroup a previously grouped shapes

so that they break down into basic shapes.

### Create a shape creation command

* 1. I need to be able to create “shape creation commands” by selecting a figure I can assign it a new command with a unique name.
  2. When I create a new shape creation command a copy of the shape's properties at that time is associated with it.

### Saving a shape creation command

* 1. I want that when I save the drawing the "shape creation commands" defined within it must be saved within the drawing file.

### Execute a shape creation command

* 1. I want to be able to execute a previously created shape creation command.
  2. When I execute a shape creation command a copy of the shape associated with it must be added to the drawing.

### Export a set of shape creation commands

* 1. I want to be able to export a set of previously created set of shape creation commands to a “shapes library file”.
  2. When I export a set of shape creation commands a new “shapes library file” will be created.

### Import a set of shape creation commands

* 1. I want to be able to import a set of shape creation commands from a “shapes library file”.
  2. When I import a set of shape creation commands these become executable in the drawing where I imported them.