**Team Members**

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**Language:** Java

**Framework:** JavaFXML

**IDE:** NetBeans

**Product Backlog**

There is a unique type of user.

Priority Order : 1(High) ~ 5(Low)

\* : More details about the user story at the end of the table.

| ID | USER STORY | DESCRIPTION | PRIORITY | CATEGORY | STORY POINT |
| --- | --- | --- | --- | --- | --- |
| 1 | Shape Select | I want to select a geometrical shape in order to add it to the draw. | 1 | Individual Functionality | 2 |
| 2 | Last Selected Shape | I want to save the last selected shape in order to draw it again without reselecting it. | 1 | Individual functionality | 2 |
| 3 | Initial Window | When I start the application I want to see an empty window in order to begin a new draw. | 1 | User Interface | 1 |
| 4 | Draw a Line in a selected position | I want to draw a Line in a certain position of the window indicated by the mouse | 1 | Individual Functionality | 8 |
| 5 | Draw a Rectangle in a selected position | I want to draw a Rectangle in a certain position of the window indicated by the mouse | 1 | Individual functionality | 8 |
| 6 | Draw a Ellipse in a selected position | I want to draw a Ellipse in a certain position of the window indicated by the mouse | 1 | Individual functionality | 8 |
| 7 | Select Border Color\* | I want to be able to choose the color of the shape border from a set of, at least, 8 different colors. | 1 | Individual functionality | 2 |
| 8 | Select Interior Shape Color\* | I want to be able to choose the color of the shape interior from a set of, at least, 8 different colors. | 1 | Individual functionality | 2 |
| 9 | Save Draw | I want to be able to save a drawing on a file so that I can reuse it. | 1 | Individual functionality | 13 |
| 10 | Load Draw | I want to load a drawing from a file so that I can reuse it. | 1 | Individual functionality | 13 |
| 11 | Select Drawn Shape | I want to select a specific shape on the drawing, using the mouse, in order to perform different operations on it. | 2 | Individual functionality | 13 |
| 12 | Delete Drawn Shape | I want to delete a selected shape from the drawing. | 2 | Individual functionality | 5 |
| 13 | Move Drawn Shape | I want to move a selected shape to a different position, using the mouse. | 2 | Individual functionality | 5 |
| 14 | Change Drawn Shape Border Color | I want to change the border color of a selected shape. | 2 | Individual functionality | 5 |
| 15 | Change Drawn Shape Interior Color | I want to change the interior color of a selected closed contour shape. | 2 | Individual functionality | 5 |
| 16 | Change Drawn Shape Size | I want to change the size of a selected shape in order to increase or decrease its dimension. | 2 | Individual functionality | 5 |
| 17 | Cut Operation | I want to perform cut operations so that I can cut a shape and insert it into another position. | 2 | Individual functionality | 8 |
| 18 | Copy Operation | I want to perform copy operations so that I can duplicate a shape. | 2 | Individual functionality | 8 |
| 19 | Paste Operation | I want to perform paste operations so that I can paste a previous copied or cutted shape. | 2 | Individual functionality | 8 |
| 20 | Undo operation\* | I want to undo operations done before so that I can cancel the last operation. | 2 | Individual functionality | 13 |
| 21 | “To the front” operation | I want to put a selected shape in the foreground in order to increase its visibility. | 2 | Individual functionality | 21 |
| 22 | “To the back”  operation | I want to put a selected shape in the background in order to decrease its visibility. | 2 | Individual functionality | 21 |
| 23 | Zoom | I want to be able to zoom the drawing choosing, at least, among 8 different zoom levels. | 3 | Individual functionality, User interface | 8 |
| 24 | Window Size | I want to scroll the window in order to draw in a different portion of the drawing surface | 3 | User interface | 3 |
| 25 | Show Grid | I want to decide to turn on an optional grid in order to place the shapes easily. | 3 | User interface,  Individual functionality | 21 |
| 26 | Hide Grid | I want to decide to turn off an optional grid. | 3 | User interface, Individual functionality | 13 |
| 27 | Grid size | I want to decide to modify the size of the optional grid. | 3 | User interface,  Individual functionality | 5 |
| 28 | Arbitrary polygon |  | 4 | User interface,  Individual functionality |  |
| 29 | Text in shape |  | 4 |  |  |
| 30 | Rotation of shape |  | 4 |  |  |
| 31 | Mirror of shape |  | 4 |  |  |
| 32 | Stretch of shape |  | 4 |  |  |
| 33 | Group/or not of shape |  | 5 |  |  |
| 34 | Shape creation commands |  | 5 |  |  |
| 35 | Add group of shape |  | 5 |  |  |
| 36 | Save new shape creation |  | 5 |  |  |
| 37 | Export |  | 5 |  |  |
| 38 | Import |  | 5 |  |  |

**More Details**:

\* ID7 : If the user doesn't choose a color, the default color for each shape border is black. The user can change the border shape color before drawing it. Each shape must have only one border color.

\* ID8: If the user doesn't choose a color, the default interior color for each shape is transparent. The user can change the interior shape color before drawing it. Each shape must have only one interior color.

\* ID20: undo operation must have an unlimited number of undo levels.

**Acceptance Criteria**

ID1: Given that the user can select different shapes, when he chooses a specific one then the selected shape is highlined.

ID2: Given that the user has already selected a shape, when he tries to draw without changing the previous selection then the new shape must be the same as the last one.

ID3: Given that the user starts the application, when the program is ready to be used then it has to display an empty window as a drawing surface.

ID4: Given that the user has selected a Line, when he uses the mouse to choose a position on the window then the shape must be added there.

ID5: Given that the user has selected a Rectangle, when he uses the mouse to choose a position on the window then the shape must be added there.

ID6: Given that the user has selected an Ellipse, when he uses the mouse to choose a position on the window then the shape must be added there.

ID7:

* Given that the user has selected a shape but not its border color, when he tries to draw it then the border color must be black.
* Given that the user has selected a shape and its border color, when he tries to draw it then the border color must be the selected one.

ID8:

* Given that the user has selected a shape but not its interior color, when he tries to draw it then the interior color must be transparent.
* Given that the user has selected a shape and its interior color, when he tries to draw it then the interior color must be the selected one.

ID9: Given that the user decides to save the drawing on a file, when he starts this operation, then the application must prevent the saving of a file in that directory if its name already exists. Else if the name of the file does not exist, it will be saved.

ID10: Given that the user decides to use a file that already exists on his machine, when he starts this operation, if he tries to open a file that does not represent an image then the application must prevent this operation. Else if the file is simply opened.

ID11: Given that the user chooses a shape on the drawing window, when he selects the shape, this last must be marked.

ID12: Given that the user wants to delete a shape previously added, when he does it, then the shape must disappear.

ID13: Given that the user wants to move a shape previously added in other positions, when he does it, then the shape changes its coordinates from the old one to the new one, indicated by the user with the mouse .

ID14: Given that the user wants to change the border color of a shape previously added, when he selected the specific shape and the new color, then the border of the selected shape must be changed to the new chosen color.

ID15: Given that the user wants to change the interior color of a shape previously added, when he selects the specific shape and the new color, then the interior of the selected shape must be changed to the new chosen color.

ID16: Given that the user wants to change the size of a shape previously added, when he selected the specific shape and modified the size effectively with mouse movement, then the previous dimension must be different from the new one.

ID17: Given that the user wants to cut a selected shape with a button or a short-cut, when he does it, then the shape must disappear and save. The saved shape must be the same as the selected one.

ID18: Given that the user wants to copy a selected shape with a button or a short-cut, when he does it, then the shape must be saved and the saved shape must be the same as the selected one.

ID19: Given that the user wants to paste a previously cut or copy shape, with a button or a short-cut, when he does it, then the shape must be added in the position indicated by the mouse.

ID20: Given that the user wants to restore the last modification of the drawing, when he does it with a button or a short-cut, then the current state of the drawing must be the same as the state before modification .

**Definition of done**

An user story is considered done when:

* The code is written.
* The code compiles correctly.
* Each developer has checked the code written by another one.
* Unit tests are written, executed and passed.
* Integration testing is performed and passed.