From the perspective of the user, I envision my software to open up with an introductory screen that will introduce what the user will learn in this module. At the beginning, I hope to have the user create their own avatar, and then the program will analyze their avatar (its characteristics: the fields) to introduce the concept of objects. For the text content of the module, I want the content to be displayed in short bite-sized paragraphs, with a next button at the bottom changing the screen to the next paragraph. There will also be snippets of code on most panels. Including a progress bar at the top will allow the user to see their growth in real time, and help them see how quickly they are learning! Every few paragraphs, a checkpoint will pop up, with a challenge to check their understanding. A few examples of possible checkpoints: type in the missing code, brainstorm possible fields. These checkpoints will aid with extending the user’s attention span, and the user will feel good about their little wins! My game will be Cake Artist! Cake Artist is a game on [tvokids.com](https://www.tvokids.com/school-age/games/cake-artist) that I used to play when I was little. The objective of the game is to receive orders from customers, and to decorate the cake they want. The cake object will already be created, however I will have the user create an instance of their cake order, with the specified decorations. After they finish decorating their cakes, the user will have to deliver the cakes to the customer (get methods). If the cake needs any last minute changes, the user will use their knowledge of set methods too. My final quiz will be like a google form, with around 10 questions. If they pass the quiz with a 80%, they will complete the module and get a certificate!

Mandatory Features:

* JButton - Used to wipe panel to show next panel, Submit answers in quiz, Start the module,
* JTextField - For fill in code checkpoint, Get username, quiz
* JProgressBar - Shows the user their progress in the module
* JLabel - Picture certificate at the end, show text
* JRadioButton, JComboBox - used in quiz
* Sound effects
* JPanel - Different panels in the same frame.

Additional Features:

* JFileChooser - Users can “hand-in” work
* Avatar Builder as Introduction (JComboBox for selection)
  + Show picture of avatar, cake in cake artist (can you stack png images on top of each other?)
* Downloadable certificate
* CSV file to save progress, so user can stop learning and come back
* Resources Page so users can find external resources at the end (video player, links to websites)
* Checkpoints between panels
* Read-Aloud option (is there a way to read aloud the text on the screen?)