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| ***(Module Design Mode):*** *Made the action class ActionAddDesignedModule, which whether load a design module or make a new on in the modulation mode* | **(Delete)**  **DeleteComponent function:**delete chosen component. | **(Undo-Redo)** :  List to save last 10 actions | ***(Load):***  Fixed some errors in the load from Phase (connections) |
| ***(Simulate Circuit):*** *made the action class ActionAmmeter, which display the current of a component that user select* | **(Delete)**  **DeleteConnection function:**delete chosen Connection | **(Undo-Redo)** :  **AddToUndoList**  **AddToRedoList**  Function to add Actions to list | **getResistance function:** to get the resistance value |
| ***(Save):*** *Fixed an error in the ActionSave in the loop of saving the connection.* | **(Delete)**  **removeTerm2Connection function:** remove decrease the number of connections (term 2) | **(Undo-Redo):**  **ExcuteUndo**  **ExcuteRedo**  Function to make undo and redo | **getSourceVoltage function:** to get the voltage value |
| ***(Module Design Mode):*** *made a mode for the modulation* | **(Delete)**  **removeTerm1Connection function:** remove decrease the number of connections (term 1) | **Connection:**  **IsInRegion**  **“modifying”**  To know if the user selected the connection | **setResistance function:** to set the value of the resistance |
| *Prevented the values of voltor resistance of any component to be less than or equal zero (the component than must have either of them or take their value from the user)* | **(MultipleDelete)**  **MultipleDelete function:**  To delete both of connections and components. | **Connection:**  **CopyConnection**  Two functions one to create a new connection with the same two terminals  One to exchange one of the two terminals with another one | **setSourceVoltage function:** to set the value of the source voltage. |
| **ValidateCircuit**: check if the circuit validate or not and doesn't break some rules like (two grounds) | **(MultipleDelete)**  **multipleStoreComp function:**  storing multiple components until we delete them. | **Move:**  To move object | **(Battery) Determine the polarity direction in the Battery component:**: to identify the direction of the current in the circuit. |
| **ValidateModule**: checking if the module valid to be drawn or not | **(MultipleDelete)**  **multipleStoreCon function:**  storing multiple connections until we delete them. | **Operate:**  To bulb and buzzer | **(*Copy*) SetCopyComp function:** setter for the component which is copied or cut |
| **ValidateClear**: make sure that the design area is clear | **(MultipleDelete)**  **DrawConfirm function:**draw a small square when multiple delete actions start and end the action after clicking on it. | **GetOutStatus**  returns status of output if BULB/BUZZER, return -1 | **(*Copy*)**  **GetCopyComp function:** getter for the component which is copied or cut |
| **void ToSimulation**: Switches to simulation mode | **(UI)**  **getWidth:**  returns window width | **GetInputStatus**  returns status of SWITCH, return -1 | **(*Copy*)**  **Class AddCopy:** to initialize a class from type copy |
| **void ToModulation**: moving from the design mode to the modulation mode | **(UI)**  **getCompHeight function:**  returns Component height. | **AcionOperate:**  To execute operation function  For bulb and buzzer | **(*Copy*)**  **Function Copy (component):** to make a copy from the component data |
| **saveModule**: save the designed module | **(UI)**  **getStatusBarHeight function**:returns Status Bar Height | **getOne:**  To get one terminal of componnect | **(Cut)**  **Class AddCut**: to initialize a class from type cut. |
| **CreateModulation**  **ToolBar:** Create a toolbar for modulation mode | **(UI)**  **getToolBarHeight function**:returns Toolbar Height | **Operation:**  Function to execute operate function in each componnent | ***(Paste)*Class AddPaste:** to initialize a class from type paste. |
| **Create Design ToolBar:** create a Toolbar of the design mode. | **(UI)**  **getToolItemWidth function**:returns Tool Item Width | **DrawON**  To draw lamb on | ***(Simulation)***  **CalculateCurrent function**: calculate the current by dividing the total voltage on the total resistance. |
| **CreateModulationToolBar**:  Create a toolbar for modulation mode | **(UI)**  **getCompWidth function**: returns Component width | **detectMouse:**  To know the position of the mouse for move |  |
| **DrawModule:** draw a Module which is saved in the project | **(UI) getHeight function:** returns Component width | **Getbuttonstate:**  To get the button state of the mouse | ***(Simulation)***  **setTerm1Volt function:** To set the voltage of the term 1 |
| ***(Simulation)***  **CalculateVoltages function:** to calculate the voltage starting from the ground | **(Modification) CalculateCurrent:** to get the voltage value. | **DrawActionBar:**  To create list of possible actions | ***(Simulation)***  **setTerm2Volt function:** To set the voltage of the term 2 |
| **whichTerminal:** returns the terminal to which a connection is connected | **(Switch between schematic and realistic)**  **Draw Realistic function**:  Change variable IsRealV from false to true or the opposite | **ActionTestSwi:**  Change switch state in simulation | ***(Simulation)***  **getTerm1Volt function:** to return the voltage value of term 1 |
| **getTermConnections:** return an array for the connections which is connected to the term | **(Switch between schematic and realistic)**  **DrawReal function:** draw a small black square which will use to move from schematic to realistic and the opposite | **ActionVoltmeter:**  To calculate voltage | ***(Simulation)***  **getTerm2Volt function**: to return the voltage value of term 2 |
| **Delete all:** Delete all the components and the connections | **(Edit)(modify)**  Change the value of voltage or the resistance | **getm\_pGfxInfo**  To get m\_pGfxInfo | ***(Documentation)****:* making easy documentation for the whole code (project) to help the user later. |
| ActionSimulate | **(Edit)(modify)**  **Remove from the number of chosen terminal on component and add to another component when we change connection** | **setm\_pGfxInfo**  To set m\_pGfxInfo  For move |  |
| ActionDesign | **getTermConnCount function function** |  |  |

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