Logicblocks by Techligence Robotics Task

February 12, 2024

Important All the **underlined** text are **links**, which might not be visible based on your application, so do not forget to click any underlined text throughout the document and make sure to follow the coding standards given in the file.

Task

Task 1: Identify and Catalog "Event" and "Variables" Blocks

- Catalog all blocks that belong to the "Event" and "Variables" category in Scratch.

Task 2: Implement Block Functionality

- Program the functional logic for each "Event" and "Variables" block.

Task 3: A button to execute all the blocks in the workspace

- Create a button which when clicked should execute all the code that is present in the workspace.
- The feature that when a block is clicked it should, along with the other connected blocks, should also be included.

Task 3: Testing "Event" and "Variables" Blocks

- Ensure each "Event" and "Variables" block works as intended and is bug-free.
- Action Items:
  1. Write unit tests for each block's functionality.
  2. Fix any bugs and refine functionality based on test results.

Task 4: Documentation

- Document the implementation details and usage of the "Event" and "Variables" " category blocks.
- Action Items:
  1. Document the code and functionality for future reference.
  2. Create user manuals and help documents for the "Event" and "Variables" blocks.

Some snippets

To render a block :

```
Blockly.Blocks['move_steps'] = {
    init: function() {
        this.appendDummyInput().appendField("Move")
            .appendField(new Blockly.FieldNumber(10), "STEPS")
            .appendField("steps");
        this.setPreviousStatement(true, null);
        this.setNextStatement(true, null);
        this.setColour(230);
    }
};
```

The corresponding generated JavaScript code would be

```
Blockly.JavaScript['move_steps'] = function(block) {
    var steps = block.getFieldValue('STEPS');
    return `moveSteps(${steps});\n`;
};
```

Dispatch action to the store with appropriate reducer :

```
Blockly.JavaScript['move_steps'] = function(block) {
    var steps = block.getFieldValue('STEPS');
    // Assuming moveSprite takes two arguments: steps to move right and steps to move up
    return `store.dispatch(moveSprite(${steps}, 0));\n`;
};

function moveSprite(rightSteps, upSteps) {
    return {
        type: 'MOVE_SPRITE',
        payload: { rightSteps, upSteps }
    };
}
```

Some relevant links for the task :

- For converting all the blocks in workspace to Javascript
- Also look here
- Scratch
- data.js in Scratch
- event.js