Data Programming with Blockly

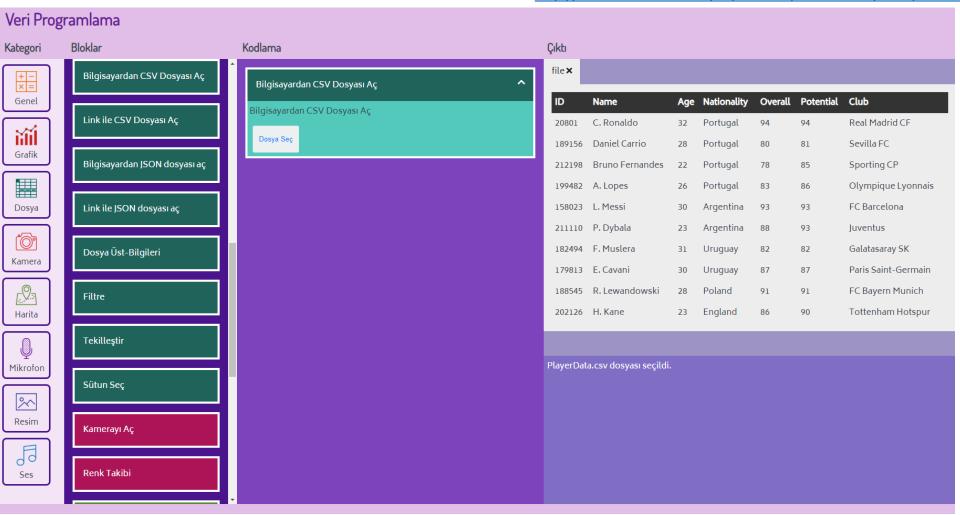Our aim is developing a familiar programming interface with appropriate abstraction level for children. The left side contains coding area and the right side shows the output of the code in different tabs for different kind of data sources.
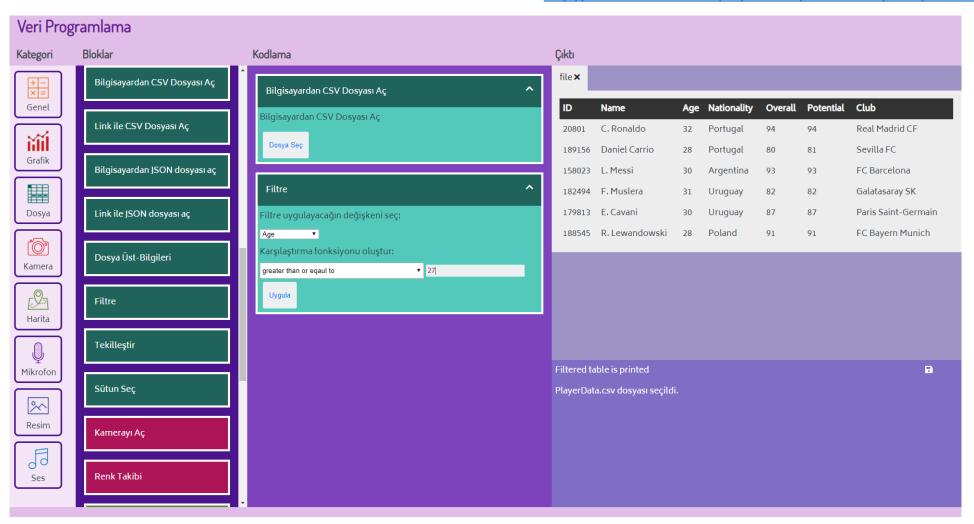
Example code shows us filtering a *Footbal Player Dataset* according to their age, to visualize the nationalities of the filtered football players onto a map.

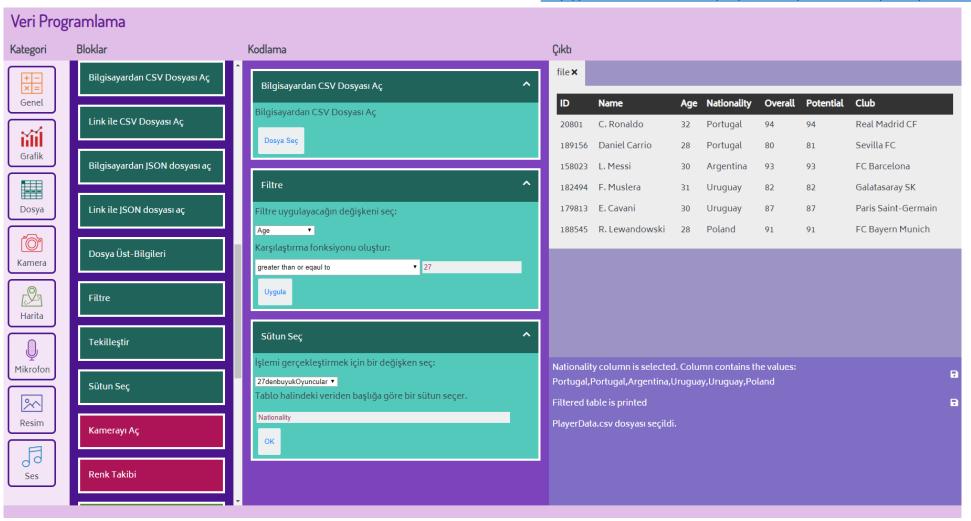# Data Programming with Real-time Output Generation

Programming with Blockly might be hard to grasp for children, since they need to run the code at right time to see some meaningful output. We developed another interface for children to generate real-time output with more detailly explained blocks. Children need to drag and drop the blocks to coding area, similar to Blockly. When a child clicks on the block, the options for this block appear. After completing the action, the result of the block appears on output area.

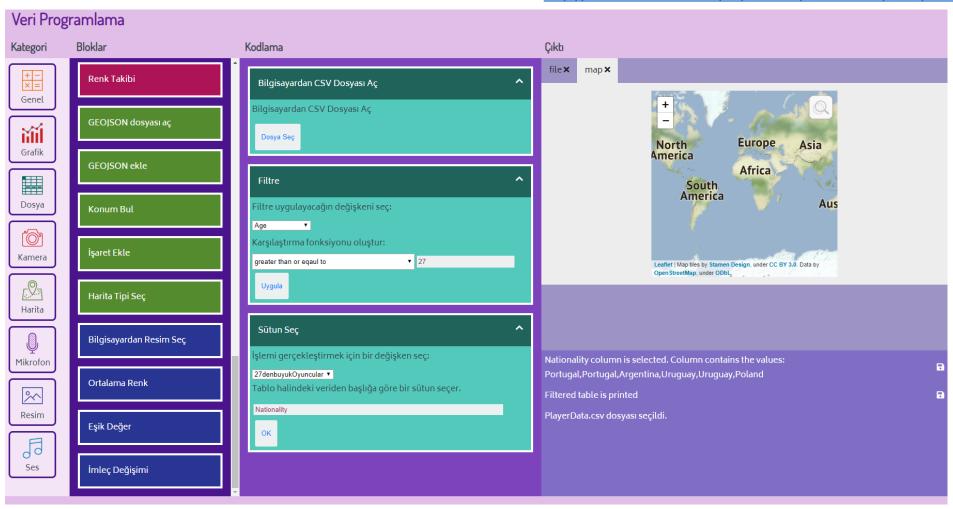# Data Programming with Real-time Output Generation

To execute the same *Football Player* data filtering, we drag the filter block to coding area, click on the block to open options and fill the required areas.

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Then, we can drag the unique values block to not have multiple markers on the same point of the map.

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After clicking on Type:Map, a new tab Map appears on output area.

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We use the previously created variable to put markers onto the map.