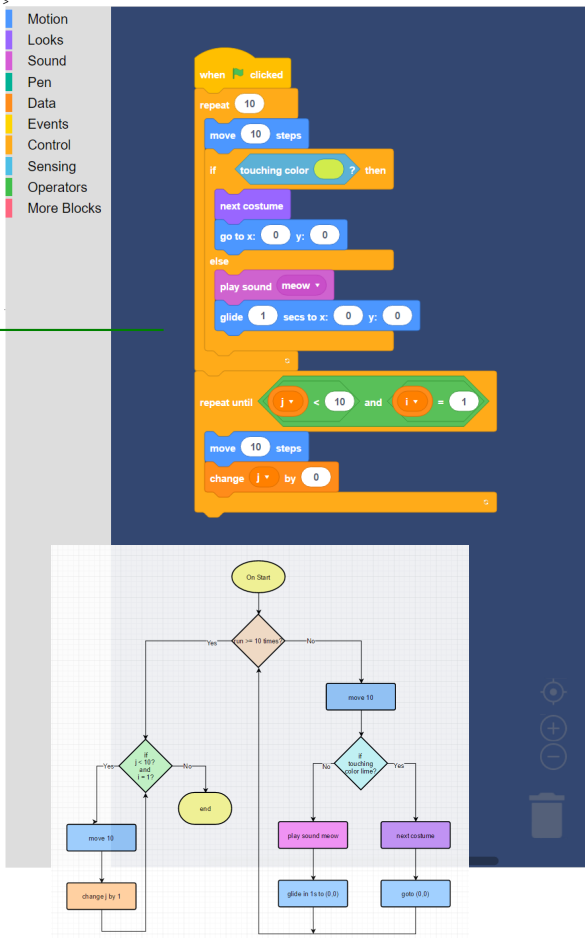


```

<xml xmlns="http://www.w3.org/1999/xhtml">
  <block type="event_whenflagclicked" id="pYooMO5a)=(D)kztwd(p' x="133" y="82">
    <next>
      <block type="control_repeat" id="tc#lyrcbsP/,lC[U]y">
        <value name="TIMES">
          <shadow type="math_whole_number" id="Fu7WlBzhja%5nK@4kAc0">
            <field name="NUM">10</field>
          </shadow>
        </value>
        <statement name="SUBSTACK">
          <block type="motion_movesteps" id="5s'gl||fbs7XoBzbX22Ut">
            <value name="STEPS">
              <shadow type="math_number" id="OziC%ND^LMuWgM2A%E">
                <field name="NUM">10</field>
              </shadow>
            </value>
            <next>
              <block type="control_if_else" id="G:7LrKfy5q.4It">
                <value name="CONDITION">
                  <block type="sensing_touchingcolor" id="pgJ5@38X-Nv8L_P/2">
                    <value name="COLOR">
                      <shadow type="colour_picker" id="V8@NfI15N8LHd/4kp">
                        <field name="COLOUR">#d1ec4</field>
                      </shadow>
                    </value>
                  </block>
                </value>
                <statement name="SUBSTACK">
                  <block type="looks_nextcostume" id="mK#f/c/E0u=K%o;e|fvef">
                    <next>
                      <block type="motion_gotoxy" id="lg-ricQm4N8kC2bGM.">
                        <value name="X">
                          <shadow type="math_number" id="10ZjDz.4wyukY%0kUn->
                            <field name="NUM">0</field>
                          </shadow>
                        </value>
                        <value name="Y">
                          <shadow type="math_number" id="LUhw3oF5y/UYZipP%R">
                            <field name="NUM">0</field>
                          </shadow>
                        </value>
                      </block>
                    </next>
                  </statement>
                </block>
              </statement>
            </block>
          </statement>
        </block>
      </block>
    </next>
  </block>
  <block type="control_repeat_until" id="9wkCSP3d3fuvntJAt9">
    <value name="CONDITION">
      <block type="operator_and" id="Qrx8B=%8UIP2p5mEvAJAN">
        <value name="OPERAND1">
          <block type="operator_lt" id="3M76^/CvJt5+H7hzf">
            <value name="OPERAND1">
              <shadow type="text" id="Zj0+lrJtI@JWSpd.f@">
                <field name="TEXT"></field>
              </shadow>
            </value>
            <block type="data_variable" id="lwj@vLEB5D*O*reTbg7">
              <value name="VARIABLE">
                <shadow type="data_variablenu" id="o^o^cRhW9Id/'S'Z2ZNIH">
                  <field name="VARIABLE"></field>
                </shadow>
              </value>
            </block>
          </value>
          <value name="OPERAND2">
            <shadow type="text" id="T%3e[W5j]uUsmx9bp">
              <field name="TEXT"></field>
            </shadow>
          </value>
        </block>
      </value>
      <value name="OPERAND2">
        <block type="operator_equals" id="j@P#j;9/qszU/%(KYK">
          <value name="OPERAND1">
            <shadow type="text" id="4kBNic_D+K75'Q3wV=6Z">
              <field name="TEXT"></field>
            </shadow>
          </value>
          <block type="data_variable" id="Z'85xHlefoJN2whk9Ov">
            <value name="VARIABLE">
              <shadow type="data_variablenu" id="VMlu/Kwmml;OPic*Xjd">
                <field name="VARIABLE"></field>
              </shadow>
            </value>
          </block>
        </value>
      </value>
    </value>
    <statement name="SUBSTACK">
      <block type="motion_movesteps" id="j@YJ43A.otbpkr45qO">
        <value name="STEPS">
          <shadow type="math_number" id="j6lt..p3'K_Ke9,jd6'k">
            <field name="NUM">10</field>
          </shadow>
        </value>
        <next>
          <block type="data_changevariableby" id="kdjVda,Rb;ZX24o|5E4">
            <value name="VARIABLE">
              <shadow type="data_variablenu" id="yyeNKhVPOAKVC6oJ">
                <field name="VARIABLE"></field>
              </shadow>
            </value>
            <value name="VALUE">
              <shadow type="math_number" id="iP[REL=s]#4H)Q(lrSy">
                <field name="NUM">0</field>
              </shadow>
            </value>
          </block>
        </next>
      </statement>
    </block>
  </block>
  </next>
</xml>

```



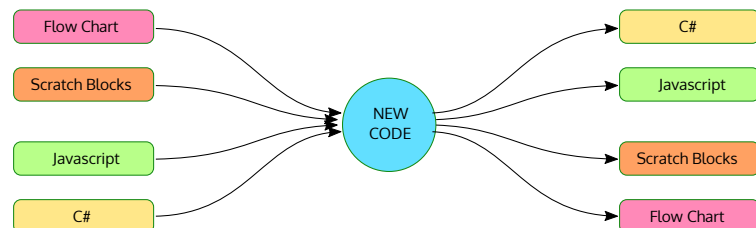
Scratch Blocks

Scratch blocks have been released to developers of educational software so it would make sense for us to use it. In fact, it may be the place to start.

Already, you can generate XML from the blocks you configure. In Scratch, this will presumably be interpreted as Javascript. In our program, it will be compiled to Javascript or C#.

Our program is also expected to allow users a choice of different visual programming languages (eg. ScratchBlocks, Flowcharts) which means our program needs to be able to represent all languages we will use symbolically and it needs to be able to interpret this as either Javascript or C#.

Our program should also allow for coding in Javascript and C# directly and so should be able to interpret either into our new symbolic representation and thus converted back into either Scratch Blocks and Flowchart form.



The symbolic representation of Scratch Blocks has been done for us. It is already representable as XML. Perhaps all we need for our "new code" to represent programs in the other languages is a specialized version of XML.

Scratch Blocks uses XML by having lines of code be XML elements, all stacked one-after-another. For branching, conditional elements contain up to 2 child nodes named "SUBSTACK". These are stacks of XML elements too.

Scratch doesn't include "return", "continue" or "break" blocks, but adding custom blocks with custom XML is not hard to do. With these blocks, the classes of flow charts that I can imagine can be represented as XML too, but there may be other classes that I haven't thought of yet that may be easy to draw in a graph editor but that may be harder to represent in this way.

