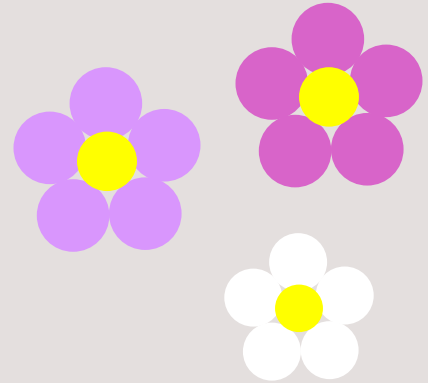
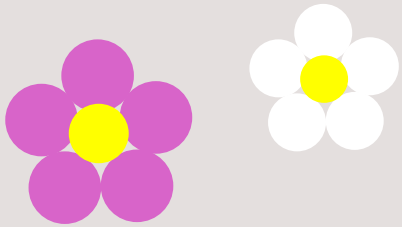


a-MAZE-ing

Sarah Au & Tabitha Dimyan

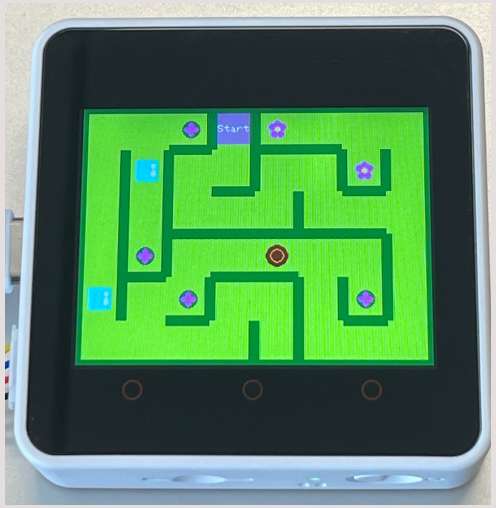
April 13, 2023

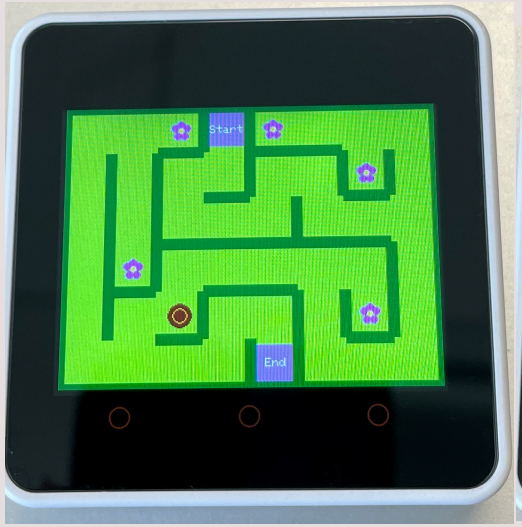


About a-MAZE-ing

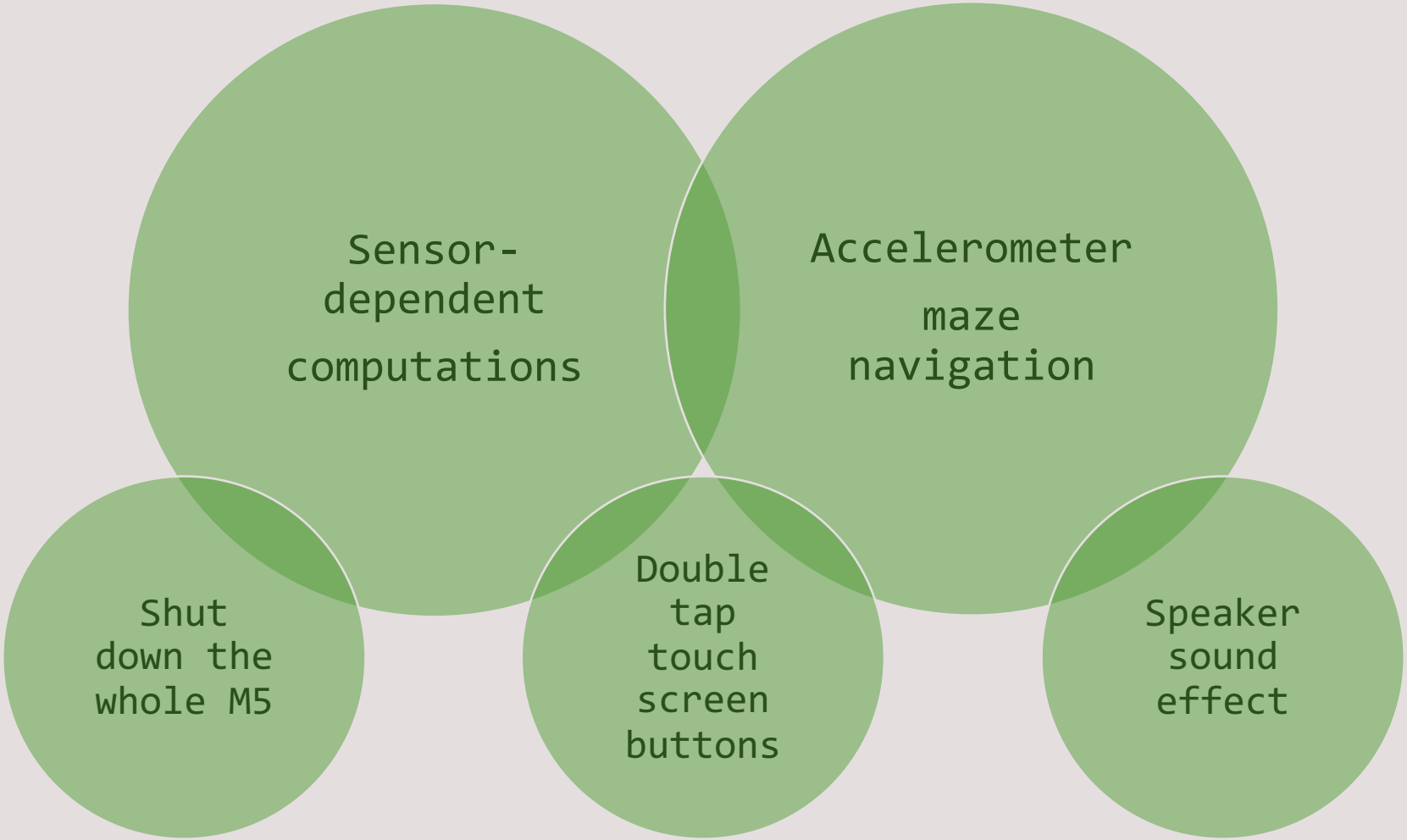
A new digital take on an old classic toy

About a-MAZE-ing





New a-MAZE-ing features

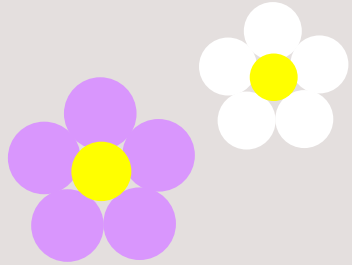


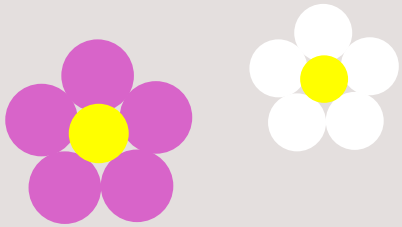
Code Snippets

```
//~ ~ ~ ~ ~ ~ ~ ~ ~ ~ check for flower tile ~ ~ ~ ~ ~ ~ ~ ~ ~ ~
if (mazeFloorPlan[currentY][currentX].floor == FLOWER)
{
    uint16_t whiteLight = vcnl4040.getWhiteLight();

    if (whiteLight >= bloomBrightness)
    {
        // bloom the flower
        mazeFloorPlan[currentY][currentX].floor = BLOOMED;
        numFlowersBloomed++;
        M5.Spk.DingDong();

        if (numFlowersBloomed == numFlowersToBloom)
        {
            drawEndTile();
        }
    }
}
```

```
float accX; // postive val: tilt to the left    negative val: tilt to the right
float accY; // positive val: tilt down          negative val: tilt up
float accZ; // don't need this data
M5.IMU.getAccelData(&accX, &accY, &accZ);
accX *= 9.8;
accY *= 9.8;

// figure out which way the device is tilting the most
if (abs(accX) > 1 || abs(accY) > 1)
{ // only if it's tilted at least a little
    if (abs(accX) > abs(accY))
    {
        // tilt left/right
        if (accX > 0)
        {
```

```
//~ ~ ~ ~ ~ ~ ~ ~ ~ ~ check for ice tile ~ ~ ~ ~ ~ ~ ~ ~ ~ ~
if (mazeFloorPlan[currentY][currentX].floor == ICE)
{
    sensors_event_t rHum, temp;
    sht4.getEvent(&rHum, &temp);

    if (iceMeltTemp == 0)
    {
        // set the melting temp to 2 C higher than current
        iceMeltTemp = temp.temperature + 2.0;
    }
    else if (temp.temperature >= iceMeltTemp)
    {
        // melt the ice!
        M5.Spk.DingDong();
        drawTileCover();
        drawHat(convertCoor(currentX), convertCoor(currentY));
        mazeFloorPlan[currentY][currentX].floor = WALKABLE;
        // reset the iceMeltTemp to frozen for the next ice tile
        iceMeltTemp = 0;
    }
}
```





Thank You!

Any Questions?