

Dhisidda codsi ku salaysan xogta (data-driven application)



Computing

Unit Barashada mashiinka (machine learning) iyadoo la isticmaalayo micro:bit

Natiijo

Waxaan awoodi karaa inaan dhiso codsi fudud oo isticmaala saadaal (predictions) ka imanaysa moodel (model) barashada mashiinka (machine learning) si loo xakameeyo socodka barnaamijka (program flow).

Erayada muhiimka ah

**barta aqoonsiga
(recognition point)**

heerka hubinta (certainty) ee keena in input uu u dhigmaasto fasalka (class)

**socodka barnaamijka (program
flow)**

sida ay u kala horreeyaan tilmaamaha (instructions) ee barnaamijka lagu fuliyo

Qaabka casharka

Dhisidda codsi ku salaysan xogta (data-driven application)



Isticmaalka saadaasha (predictions) ka imanaysa moodel (model) si loo xakameeyo barnaamij



La qabsashada barta aqoonsiga (recognition point) si loo hagaajiyo barnaamij

Fur CreateAI.

- Tag oak.link/createai
- Ka sii warsh meeshii aad ka tagtay.

Ama:

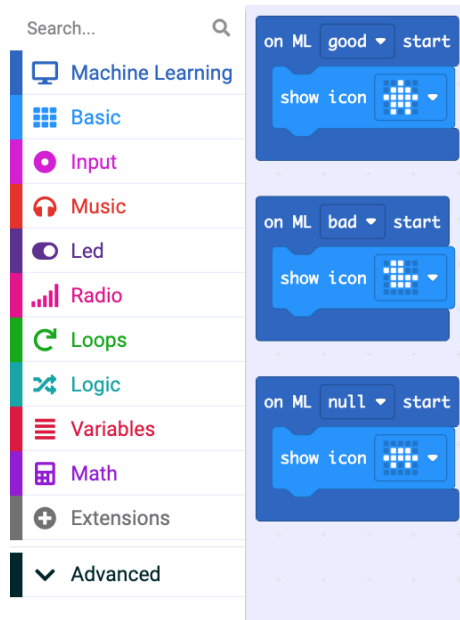
- fur kalfadhigii (session) ugu dambeeyay, ama
- si wad kalfadhigii (session) aad badbaadisay daraskii hore

Fiiro: haddii aadan haysan kalfadhi (session) jira, waxaad isticmaali kartaa faylka muunada xogta (data sample file) ee la bixiyay si dheeri ah.

Isticmaal blocks-ka code-ga barashada mashiinka (machine learning code blocks).

- Guji badhanka buluugga ah ee 'Edit in MakeCode'.

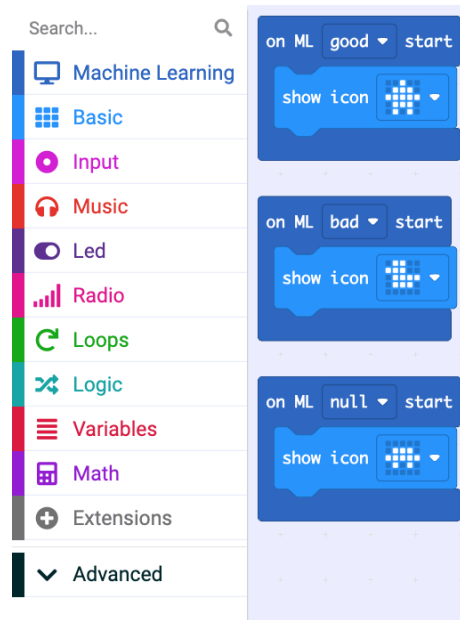
Dhacdo (event) 'muuji astaanta (show icon)' ayaa lagu daray block kasta oo 'on ML start' ah.



Soo deji (download) barnaamijkaaga (program) micro:bit-kaaga.

Tijaabi (test) in barnaamijka (program) uu muujiyo astaanta (icon) saxda ah marka moodelka (model) uu saadaaliyo (predicts) in dhaqdhaqaaq (movement) kasta uu bilaabmay.

Astaanta (icons) la muujiyey kuma xidhna magacyada fasalka (class names).



Beddel (alter) astaanta (icons) si ay u bixiyaan jawaab celin (feedback) macno badan leh oo ku saabsan dhaqdhaqaaqa (movement) isticmaalaha.

Waxaan ku daray weji dhoola cadeynaya (smiley face) marka fasalka (class) 'good' uu saadaaliyay (predicted) moodelka (model).

Isra



Maxay wejiga dhoola cadeynaya (smiley face icon) u ahaa soo-saarka (output) ku habboon fasalka (class) 'good' marka loo eego astaanta (icon) caadiga ah?

a

Waxay ka dhigan tahay wax wanaagsan (positive).



b

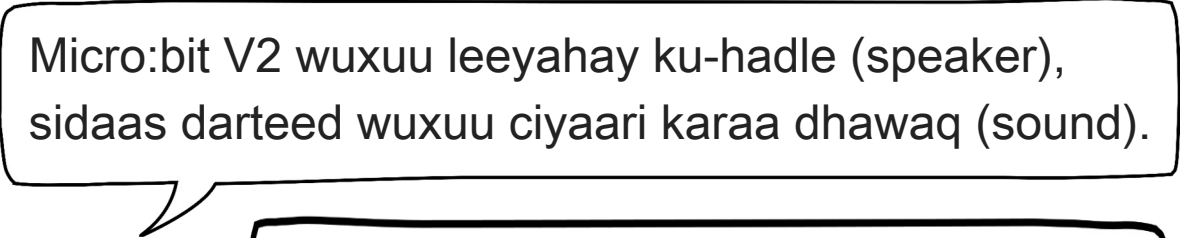
Waxay isticmaashaa LED-yo (LEDs) yar.

c

Astaanta (icons) waa in laga beddelaa barnaamij (program) kasta.

LED-yada (LEDs) micro:bit waa mid ka mid ah soo-saarkiisa (outputs).

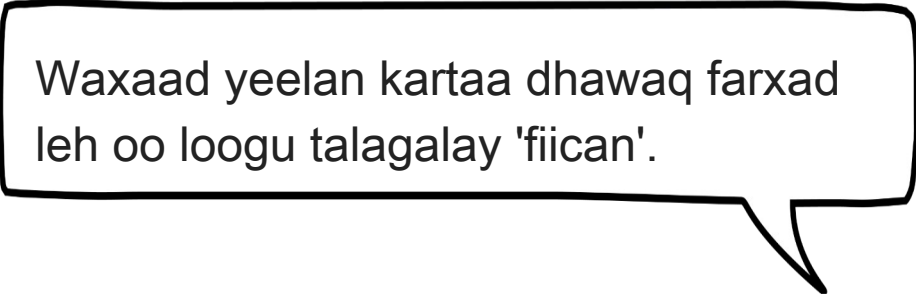
Waa maxay soo-saarka (output) kale ee micro:bit u isticmaali karo si uu ugu wargeliyo isticmaalaha dhaqdhaqaaqa (movement) 'good' ama 'bad'?



Micro:bit V2 wuxuu leeyahay ku-hadle (speaker), sidaas darteed wuxuu ciyaari karaa dhawaq (sound).



Yacquub



Waxaad yeelan kartaa dhawaq farxad leh oo loogu talagalay 'fiican'.



Cali

Run mise been?

LED-yadu waa wax soo saarka ugu habboon noocan codsiga.



Run



Been



Why?

Waxaa laga yaabaa inay adag tahay in la arko jawaabta LED-yada micro:bit inta lagu guda jiro dhaqaaqa.

Isticmaal saadaasha model si aad u xakamayso barnaamij

Run mise been?

LED-yadu waa inay ahaadaan kuwo madhan haddii cod la isticmaalo.



Run



Been



Why?

Some users may be hearing-impaired and could be disadvantaged if the application **only** plays sound. Displaying an icon on the LEDs in addition to a sound would make the application more accessible.

- 1) Ku dar wax soo saar cod oo ku habboon codsigaaga, si aad u siiso jawaab celin isticmaalayaasha ku saabsan dhaqaaqyada 'wanaagsan' iyo 'xun'.

Waxaad isticmaali kartaa blocks-ka kooxda Music.



Tijaabi ilaa aad ka helayso codad u shaqeeya isticmaalayaashaada.

- 1) Ku dar wax soo saar cod oo ku habboon codsigaaga, si aad u siiso jawaab celin isticmaalayaasha ku saabsan dhaqaaqyada 'wanaagsan' iyo 'xun'.

Waxaad isticmaali kartaa baloogyada kooxda Muusika



Tijaabi ilaa aad hesho dhawaaqyo u shaqeeya dadka adeegsada.

Qaar ka mid ah dhawaaqyada ayaa ka habboon kuwa kale.

You may need to think about the meaning users could attach to a sound or its volume in a particular environment.

Dhismaha codsi (application) ku salaysan xog (data)



Isticmaal saadaal (predictions) ka timaadda moodel (model) si aad u xakamayso barnaamij (program)



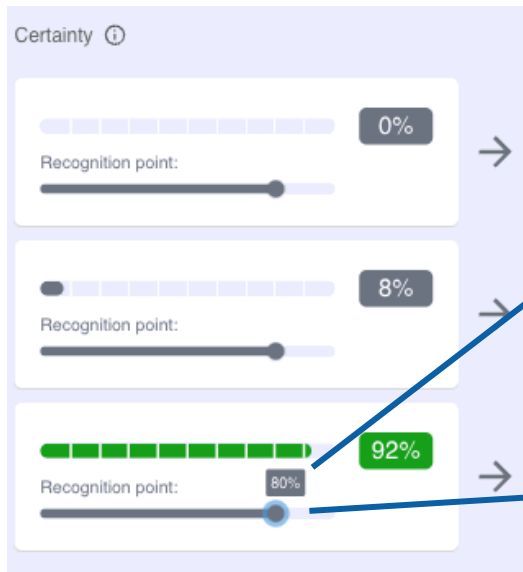
Adapt recognition points to refine a program

Waxaad abuurtaay soosaarayaal (outputs) LED iyo dhawaq (sound) marka moodelka (model) uu saadaaliyo in dhaqdhaqaaq (movement) uu ku habboon yahay fasalka (class).

Sida caadiga ah, saadaal (prediction) waa in ay gaadho heer hubaal (certainty level) ah 80% si ay u keento in gelinta (input) ay ku habboonaato fasalka (class).

CreateAI waxay tixraacaysaa tan dhibcaha aqoonsiga (recognition point).

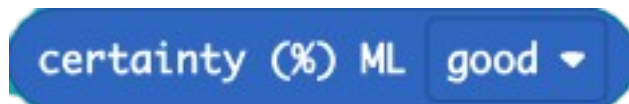
Waxaad beddeli kartaa dhibcaha aqoonsiga (recognition point).



Marka dhibic aqoonsi (recognition point) la gaadho, block-ka 'is ML [] detected' wuxuu noqonayaa True.

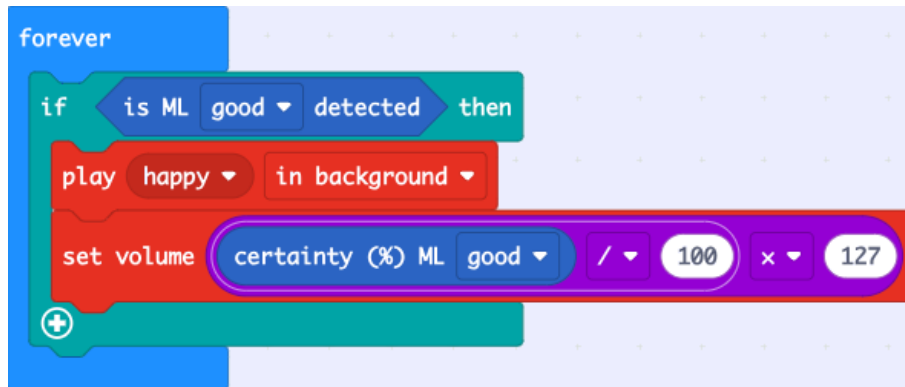


Waxaad sidoo kale u isticmaali kartaa hubaalmimada (certainty) (ee %) saadaasha (predictions) moodelka (model) sida qiime (value) ku jira koodhka (code) codsigaaga (application).



Waxaad u isticmaali kartaa block-yadan si aad u xakamayso socodka barnaamijka (program flow).

Waxaad sidoo kale u isticmaali kartaa si aad u xakamayso codka (volume) ama sarjebinta (pitch) dhawaqa (sound) (ama iftiinka (brightness) LED-yada).



Isticmaal block-yada koodhka (code blocks) barashada mashiinka (machine learning).

- Tijaabo (Experiment) ku beddelashada barnaamijkaaga (program) si aad uga faa'iidayso qiimaha (value) hubaalnimada (certainty) saadaasha (prediction).

Maxaa xakameeya ciyaarista muusigga (music) ee koodhkan?

a

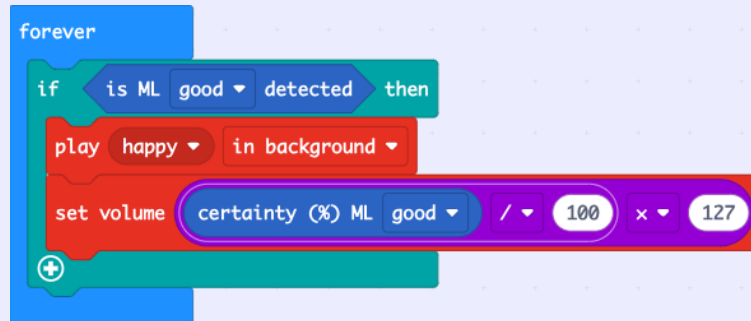
Qaybta la ogaaday waa False.

b

Qiimaha (value) codka (volume) waxaa lagu dejiyay iyadoo la isticmaalayo qaacido (formula) xisaabeed (mathematical).

c

Boqolleyda hubanti (certainty %) ee ah in waxa la geliyay uu u dhigmaan fasalka 'good' wuu ka sarreeyaa dhibcaha aqoonsiga (recognition point).



Run mise been?

Waa inaad dejisaa dhibcaha aqoonsiga (recognition point) si koodhku u shaqeeyo.



Run



Been



Sababta?

Dhibcaha aqoonsiga (recognition point) ee caadiga ah waa 80%.

- 1) Tijaabo (experiment) adiga oo isticmaalaya qaybaha barashada mashiinka (machine learning blocks) ee koodhkaaga si aad u dhisto codsigaaga (application).

Dhacdooyinka barnaamijka (program events) waxaa la kici karaa marka dhibcaha aqoonsiga (recognition points) la gaaro.

Habka barnaamijka (program flow) waxaa la beddeli karaa adiga oo isticmaalaya qaybaha (blocks) kuwaas oo ogaada haddii dhibcaha aqoonsiga (recognition point) la gaaray, ama adiga oo isticmaalaya qiimaha hubantida (certainty values).