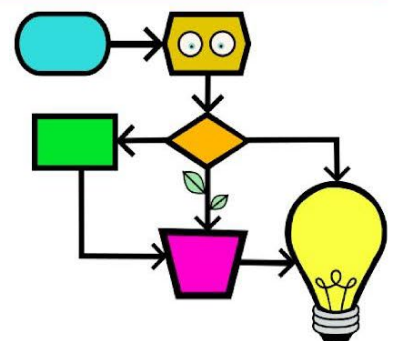
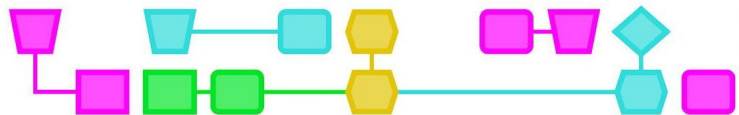


Fundeshinan di PK – Introduskhon na Rekonosé Patronchi





Resúmen

Rekonosé Patronchi ta yuda bo haña similaridatnan entre problema i sistemanan i apliká solushonnan previo pa solushoná problemanan nobo. Den e lès aki, studiantenan ta bai usa rekonosementu di patronchi pa dividí karchinan den diferente kategoria. Komo un tarea adishonal, tin e posibilidat pa skibi un algoritmo pa un kompiuter pa asina e kompiuter tambe por yega na e mesun kategorianan.

Grupo di enfoke: 6-12 aña

Durashon: 25 minüt – tarea ekstra 25 min

Metanan di enseñansa: Na final di e lès aki, studiantenan lo por:

- Identifiká patronchinan den un sèt (òf sèt di data)
- Komprondé kon patronchinan ta visibel den bida diario
- Usa solushonnan previo(ku a usa antes) pa solushoná un problema nobo

Online/offline: offline.

Pensamentu Komputashonal:

- Abilidatnan general: traha huntú, tuma desishon
- Fundeshonan di PK: Rekonosé patronchi, Apsrakshon, Algoritmo
- Konseptonan di PK: surti, klasifiká

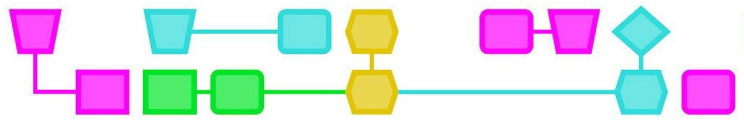
Materialnan:

- Sèt di karchinan di potrèt (Apèndix 2)
- Timer riba un bòrchi òf telefòn
- Kahanan chikitu – por lo menos kuater pa kada grupo di 3 pa 4 studiante
- Worksheet pa tareanan ekstra

Tep: plastifiká e karchinan pa hasi nan durabel.

Preparashon:

E karchinan (Apendix 1) mester keda di prent i kòrtá di antemano. Dividí e klas den gruponan di 3 pa 4 studiante i soru pa kada un tin nan mes superfisie (mesa, ets.) riba kua nan por pone e karchinan. Na inisio di e lès, duna kada grupo un sèt di karchi.



Introdukshon na lès di e kuater fundeshinan general di PK

Puntra studiantenan:

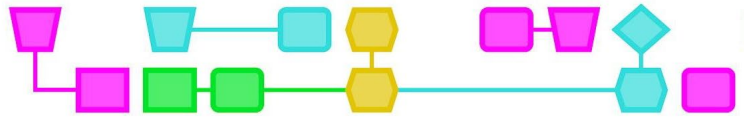
- Kiko bo sa di kon kòmputer I telefòn ta traha?
- Nan por pensa pa nan mes? (Dikon si, dikon nò?)
- Ken ta kontrolá kiko un kòmputer ta hasi?

Splika e studiantenan ku nan ta bai traha riba Pensamentu Komputashonal. Simpel bisá, esaki ta embolbí pa siña kon pa laga un kòmputer resolvé un problema pa bo. E no ta simpelmente programá, pero tambe, por ehèmpel, siña kon pa kibra un problema na pida pida, òf rekonosé patronchinan pa por resolve un problema mihó. Tin kuater fundeshi prinsipal di PK:

- Dekomposishon → dividí un problema den piesanan chikitu.
- Rekonosé patronchi → buska similaridatnan òf patronchi den e piesanan chikitu ku lo por yudabo solushoná e problema.
- Apstrakshon → hasi distinsjon entre asuntunan prinsipal i esnan sekundario. Kiko ta realmente importante pa solushoná e problema?
- Algoritmo → Yega na instrukshonnan stap pa stap kon pa solushoná e problema.

Den e lès aki lo introdusí rekonosementu di patronchi

<p>Decomposition</p> <p>Take ideas and problems apart</p>	<p>Pattern recognition</p> <p>Look for similarities or trends</p>
<p>Abstraction</p> <p>Removing unnecessary information</p>	<p>Algorithms</p> <p>Create step by step instructions</p>



Deskripshon di lès – Rekonosé patronchi

Tarea 1 - Surti (10 min):

Repárti e karchinan I instruí e studentenan pa surti e karchinan den tres minüt. Si ta nesenario, splika kiko e palabra “surti” ta nifiká. No duna mas splikashon I laga e studentenan disidí den kua kategoria nan ke surti e karchinan den dje.

Pone e timer pa tres minüt. Despues ku e tres minütan terminá, interkambiá kiko e studentenan a hasi:

- Kua kategorianan nan a skohe? (Probabelmente kada grupo a krea un kategoria diferente)
- Kon nan a determiná e kategorianan?
- Kiko nan a haña difísil?

Merriam-Webster; surti:
Pone den un sierto lugá, rango,
segun sorto, klase òf naturalesa.

Kontinuá ku tarea 2.

Tarea 2 – Traha mas kategorianan (10 min):

Pa e tarea aki, studentenan mester dividí e mesun sèt di di karchinan den kuater kategoria. E ta keda na e studentenan den kua kuater kategoria nan ta disidí pa surti e karchinan den dje. Normalmente, studentenan lo tin difikultat pa surti e karchinan den kuater kategoria, pasobra nan mester integrá e kategorianan ku nan a usa den e tarea anterior.

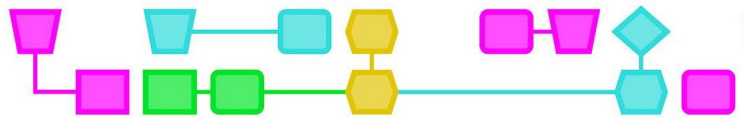
Por ehèmpel, si nan tabatin kategorianan di “opheto, bestia, humano, kuminda i koló”, awor nan mester aberiguá kon pa integrá e kategorianan aki den kuater kategoria.

Pone e timer na tres minüt. Despues di e tres minütan, interkambiá kiko e studentenan a hasi:

- Kua kategoria nan a skohe? Nan tur lo tin kategorianan diferente, pues no tin korekto i robes.
- Kon nan a determiná e kategorianan?
- Kon ta ku e aktivitat aki kompará ku esun anterior?

Splika ku mientras ta surti, nan tabata buska patronchinan: nan mester a wak kua kosnan ta mas o menos meskos i kua nò. Nan a skèn e karchinan ku nan bista I a mira por ehèmpel ku tabatin kuminda I animal. Den trahamentu di kategoria, nan mester a buska pa patronchinan: Kua similaridat i diferensha tin? Basá riba esaki, nan ta disidí hopi lihé kiko mester ta den kua kategoria.

Tep: Tin hopi wega ku ta usa rekonosementu di patronchi. Pensa riba Minecraft, kaminda bo mester di sierto “resetanan” (patronchinan) pa konstruí instrumentonan, òf den Roblox, kaminda bo ta siña kon diferente wega ta traha dor di rekonsé e patronchinan.

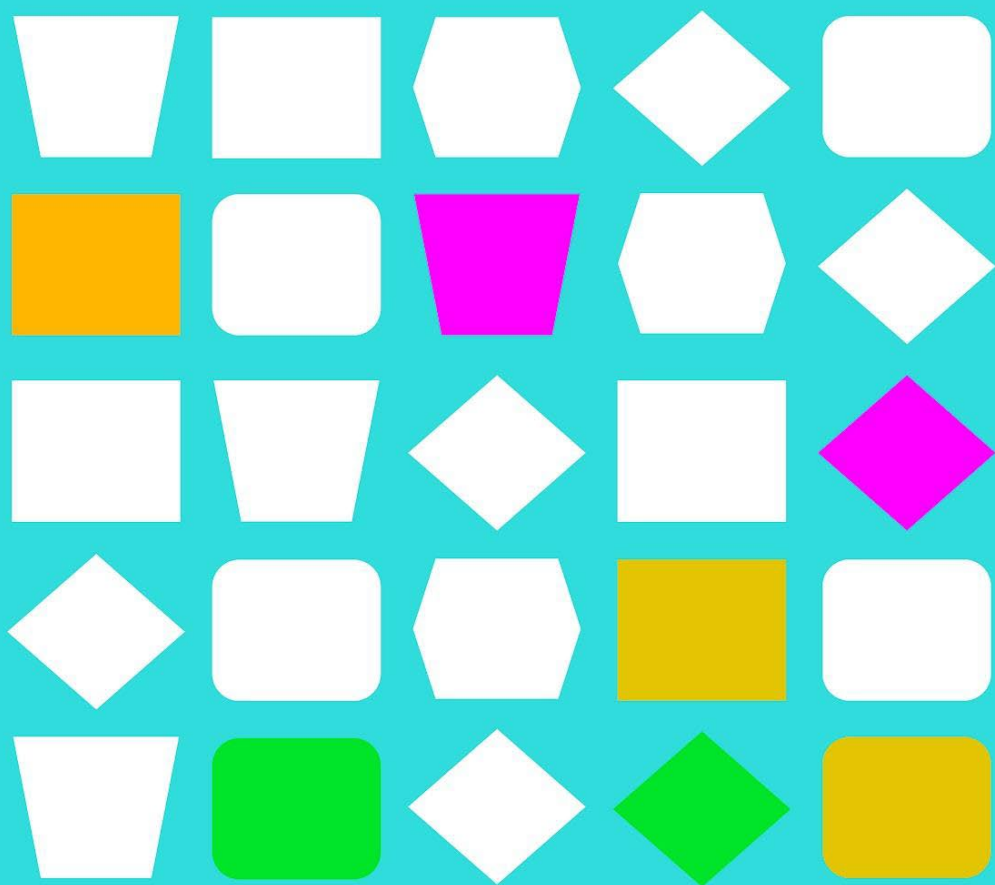


Konklushon (5 min):

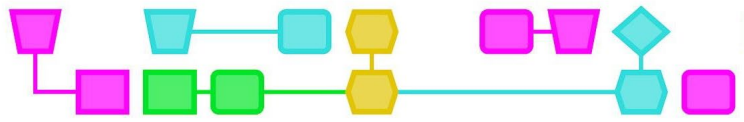
Tur e kartanan aki huntu por referí na nan komo data. Kompiuternan hopi biaha ta traha ku hopi data. Pa por bisa e kompiuter kon pa dil ku tur e data aki, ta di vital importansia pa rekonosé e patronchinan den e data. Ora ta diseñá un app tokante kuminda, por ehèmpel e kompiuter no mester di pensa di artikulonnan spesífiko, pero mas riba karakteristikanan nan ku tur tin komo e kategoria(p.e.sorto, prosesá, peso, koló I mas) Den e forma aki ta modelá e struktura di data, I e por keda yená ku datanan aktual spesífiko. E struktura modelo di data ta super spesífiko, pasobra na momentu ku ta diseñá un app pa usa den un supermarket, p.e. e puntonan ariba no ta di interes. Nos ta mas interesá den preis, deskuento, kalidat ets. Pa esaki e patronchinan ta hopi spesífiko pa usa, loke ku por hasi difísil pa determiná kua patronchi eksakto abo ta buskando den e data.

Rekonosé Patronchu ta hopi importante tambe den bida diario. Por ehèmpel, studiantenan por solushoná problemanan di kalkulo mas lihé si nan sa kua e patronchinan ta. Pensa pa resolve seis biaha sinku si nan sa kaba kiko ta sinku biaha sinku. Nan por rekonosé tambe animalnan mas fasil pasobra nan sa na kua patronchinan nan ta pertenesé (e tin pata, e tin lana, barba ets?) Pues patronchinan ta hasi e bida un poko mas fasil.

Tep: Bo por usa kontestanan di studiante pa splika e konseptu di apstrakshon. Apstrakshon ta ora bo por ignorá e detayenan spesífiko I mira e bista amplio mas importante. Loke bo ta hasi ora bo skèn e karchinan aki, por ehèmpel, determiná e kategorianan. Bo no ta bai wak e detayenan di kada kos, pero kua kosnan ta fet mas o menos ku otro. Si bo mester solushoná un problema, por hasié mirando e bista amplio, na lugá di kada detaye. Bo ta komprondé ku bo por bin ku un solushon mas lihé.



Apèndix



Appendix 1: additional activity - sorting algorithm for animal cards (25 min)

Conditions and rules (5 min):

Use a set of animal cards and explain to the students that they can also use a computer to sort the cards (the data) for them. In this assignment they will create an algorithm for a computer that sorts the cards.

To make the instructions as clear as possible for the computer, you can use conditions. This is an if-then rule that states that something must happen before the other thing happens. An example of a condition for sorting could be: 'if it has legs, it is an animal and it must go in the first bin' or 'if it has feathers, it must go in the second bin.'

Algorithms (25 min):

The students use the worksheet, sorting cards (both in the appendix) and four bins, in order to write an algorithm for a computer to sort the cards into categories. They create four (or more) categories and try to come up with conditions to write a program that sorts the cards into these categories.

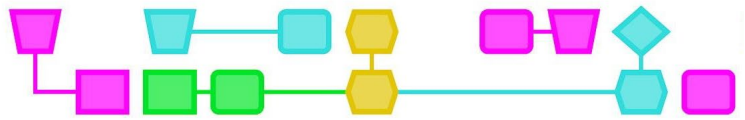
After the students have written the sorting program, let them exchange the programs and try out the sorting algorithm from another group. Discuss how the algorithm worked and whether the instructions were clear enough?

The students probably did not write a perfect sorting algorithm, as it is very difficult to accurately explain the conditions. For example, students can have the condition 'if it has feathers, it is a bird, and it must go in the first bin labelled 'birds''. However, if they also have a bin labelled 'farm animals,' then it is unclear where exactly a chicken would go. A computer cannot think for itself at all, which is why sorting algorithms are very difficult to write, even if you are only sorting animal cards.

Closing (5 min):

Explain to the students that they have made if-then rules (=condition) to write an algorithm that a computer can use to sort the animal cards. By creating conditions, the computer can decide which item belongs in which bin. Since a computer cannot think for itself at all, sorting algorithms require precision and a lot of explaining, which is why they are usually very difficult to write.

Explain that they themselves also perform algorithms in their everyday lives! Think about brushing your teeth or doing a dance. These are all step-by-step instructions that they follow in order to make a particular task easier or smoother.



Surti e kartanan - Algoritmo

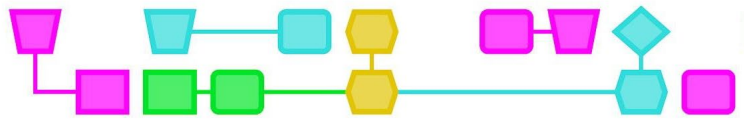
Surti e karchinan di bestia den kuater kategoria.

Nos kategorianan ta:

-
-
-
-

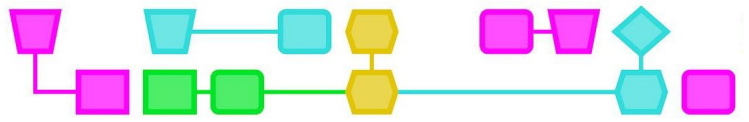
E reglanan pa e kòmputer ta:

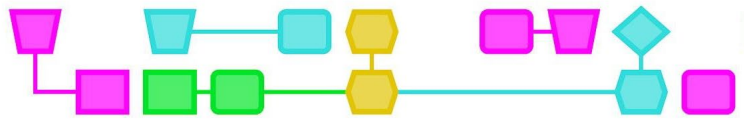
- Si..... → E ora ei.....
- Si..... → E ora ei.....
- Si..... → E ora ei.....
- Si..... → E ora ei.....
- Si..... → E ora ei.....
- Si..... → E ora ei.....
- Si..... → E ora ei.....

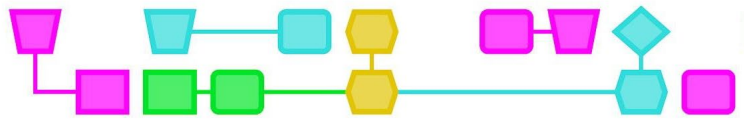


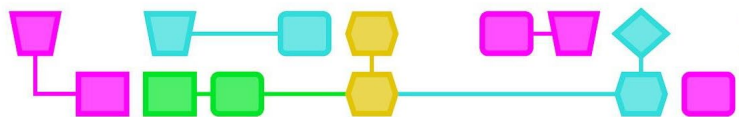
Apèndix: Karchinan pa prent











Kolofon

© CTPrimED

E publikashon aki ta un produkto di CTPrimED (2021-1-NL01-KA210-SCH-000031319), finansiá ku sosten di Erasmus+ Programme of the European Union. E publikashon aki ta reflehá bista di solamente e outornan, i e Komishon no por keda poné responsabel pa niun uso ku ta keda hasí di e informashonnan aki den.

Kordinadó di proyekto

NEMO Science Museum, The Netherlands

Partnernan

Universidad de la Iglesia de Deusto Entidad Religiosa, Spain
Stichting Children's Science Museum Curacao, Curacao



Co-funded by the
Erasmus+ Programme
of the European Union



Universidad de Deusto
University of Deusto

Deusto

