

Breve introduzione all'informatica

-- seconda lezione 18 febbraio --

G. Barbara Demo

Dipartimento di Informatica
Università degli studi di Torino

SECOND MEETING

About Scratch: we become familiar with the Scratch environment and

- work on the translations the students propose*,
- show how the sequence of instructions and how the selection are expressed in Scratch by considering the GoingHomeFromSchool project.

An important component of our activities is introduced: → see achievements

* See the Russian translation

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When deciding about introducing computing in schools the problem is partly WHAT but mostly HOW: → methodology

- **What:** programming among short introduction to basic aspects such as architecture, formal languages, etc.
- *for introducing programming to persons with little knowledge of computing story-telling is the approach currently followed*

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HOW: → methodology

- Story-telling is the approach we currently follow for introducing programming to persons with little knowledge of computing
- *has proved to be quite appealing for both students and teachers who need retraining*
- recommended to begin with a **look-seeInside-modify methodology** where teachers look at an already running activity with their students, explore the inside of what they have seen and then change it developing a story of their own.

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What about stories

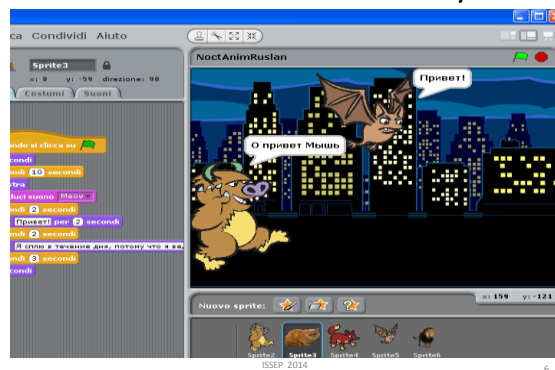
The story named “Nocturnal animals”, has been conceived and developed by an English student 11 years old

In it, a “monster”, out for a walk in a modern city, meets different animals learning that they are going around by night because they are nocturnal animals, but a lion, when challenged, says, “Of course not (nocturnal animal), silly! I am lost!”

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The translation of a Russian boy:

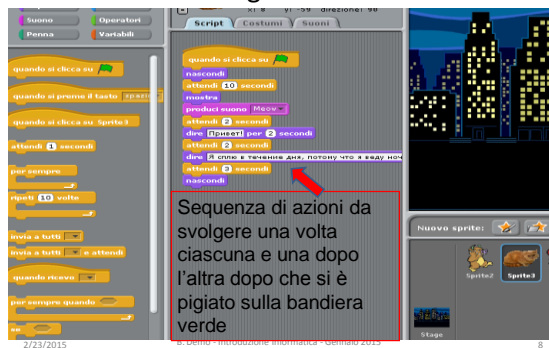


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Guardiamo lo script (cioè la parte) del gatto nella storia degli Animali Notturni:



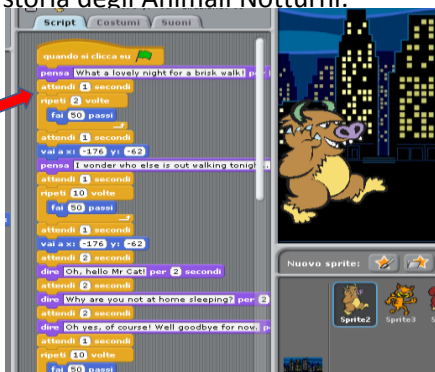
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Guardiamo lo script (cioè la parte) del mostro nella storia degli Animali Notturni:

Sequenza di azioni che saranno svolte **una o più volte** una dopo l'altra dopo che si è pigiato sulla bandiera verde



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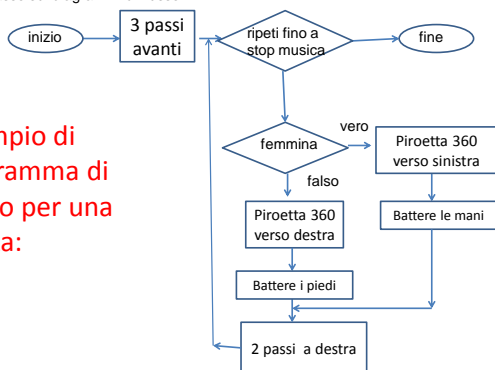
- **Step-1)** short introduction of the Scratch environment while we work on some translations the students had as assignment to show today
- **Step-2)** As a recall of what we went through during our first meeting I ask if someone can tell other examples of tasks from our everyday life that we need to communicate quite precisely.
 - One of my favorite and easiest example is the table: “What to do in case the alarm sounds” present in every school. The order of the actions is important.
 - Other examples are dances: they can be very easy sequences of instructions. Specify a dance in a flow diagram

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Breve ripasso sui diagrammi di flusso:



Esempio di diagramma di flusso per una danza:

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- We analyse what is going on in schools for deciding HOW

Stories can be backgrounds for schoolchildren performances

An evolution of the projects described in the previous meeting concern using if-then and if-then-else commands learnt developing our-on-stories into more sophisticated general stories and producing “stories-with-crossroads” [...], i.e. stories having not only sequential actions yet having a development that depends on **user interactions** or on other interactions among characters

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- **Step 3)** *we continue working on other translations the students propose:*
 - introduce the recording possibility,
 - try to synchronize reading aloud the messages and how long the message is visible. Playing with longer messages we consider how to make them more readable, i.e. the need to have longer times for showing dialogues is introduced, which means also longer times for synchronizing the scenes
 - See how to create a new sprite from an image found on the web, as an example

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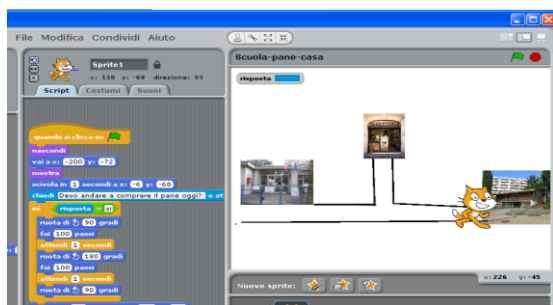
- **Step 4)** *we analyse the language used to speak to the computer and introduce other forms of synchronization of the scenes (messages, keyboard buttons).*
- **Step 5)** *we see the execution of the Scratch project GoingHomeFromSchool and its inside.*
 - It is important to be able to read programs.

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From Story-telling to Telling-my-story GoingHomeFromSchool



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Algorithm: is the solution of a problem P written as a detailed sequence of actions

Programs or, better, digital programs are what we have seen in Scratch:

- the specification of a story
- the specification of the solution to a problem, i.e. the specification of an algorithm

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Assignment:

1. learn how to change the background by reading Lawrence's web pages and practice on the Nocturnal animals
2. draw a storyboard to describe some topic dealt with in current lectures of any discipline

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Accomplishments:

1. there are many "precise" languages, already seen flow diagrams and a pseudoLanguage: the Scratch language is the third one we see and this one is precise or formal.
2. **Grammars** are a way to specify a formal language such as a programming language.

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Walking through New York:



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