



# Coding4Girls

*Dott.ssa Michela Tramonti*

*Promuovere lo sviluppo del coding attraverso la metodologia e gli strumenti del progetto Coding4Girls*

**European Training and Research Association for a Cooperation Key to business**

Questo progetto è stato finanziato con il sostegno della Commissione Europea. Questa pubblicazione rispecchia il punto di vista dell'autore e, pertanto, la Commissione non è responsabile di alcun uso che possa essere fatto di informazioni qui contenute.



# Contesto

- Secondo il Centro Nazionale per l'educazione negli Stati Uniti, le donne rappresentano appena il **18%** dei laureati nelle TIC e, nelle migliori università, questo numero scende al **14%**.
- Il settore tecnologico è l'unico ambito STEM in cui è diminuita la partecipazione femminile.
- In Europa la situazione è ancora peggiore secondo quanto riferito dalla Commissione Europea: **su 1.000 donne solo il 29%** hanno una laurea in tecnologie dell'informazione e della comunicazione (TIC) (in contrasto con il 95% costituito da uomini), e di queste solo una minima parte lavora nel settore TIC.



# Informazioni generali

**Programma:** Erasmus+

**Azione:** KA2 Partenariato Strategico - Settore Scuola **Coordinatore di**

**progetto:** UNIVERZA V LJUBLJANI (Slovenia) **Inizio:** 01/09/2018

**Durata:** 24 mesi

**Codice:** 2018-1-SI01-KA201-047013

**Principali beneficiari:** Studenti con età compresa tra 9 – 13 anni

(Scuola Primaria e Secondaria)



[www.coding4girls.eu](http://www.coding4girls.eu)



### General goal

Overcoming the gap between male and female participation in computer science education and careers by introducing more attractive learning methods for young people.



### Main objective

Introducing innovative methodological learning framework for building programming skills through the instructional support content and end-to-end learning activities based on the integration of the design thinking methodologies and the serious game approach.



### Partners

European experts in the field of didactics of informatics, education, e-learning, coding computational thinking and game-based learning from Slovenia, Bulgaria, Croatia, Greece, Italy, Portugal and Turkey.



### Participants

The direct participants are teachers from primary and secondary school with 10-16 years old students coming from Slovenia, Bulgaria, Croatia, Greece, Italy, Portugal and Turkey.

[www.facebook.com/coding4girls/](https://www.facebook.com/coding4girls/)



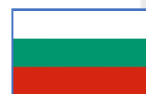
Partners



UNIVERZA V  
LJUBLJANI



EU-Track



SOUTH-WEST  
UNIVERSITY NEOFIT  
RILSKI



SVEUCILISTE U RIJECI



PANEPISTIMIO  
THESSALIAS



ISTANBUL VALILIGI



VIRTUAL CAMPUS LDA



General goal

Il progetto affronta il **divario** tra **partecipazione maschile e femminile** nell'educazione tecnologica e nelle relative carriere professionali introducendo **metodi di apprendimento** più attraenti sia per le ragazze che per i ragazzi.

Tali metodi sono rivolti ad affrontare quei fattori che inducono le ragazze a non scegliere l'informatica, ovvero:

- l'errata percezione dei ruoli e delle carriere professionali;
- mancanza di interesse nella disciplina;
- basse competenze.



Main objective

- Convalidare un **quadro di apprendimento** strutturato attraverso la **progettazione** e l'**implementazione** di un ***serious game***.
- Gli **studenti** sono stati **incoraggiati** a **progettare** e **programmare** dei game.
- Inoltre, il progetto ha sviluppato **contenuti a supporto** degli educatori per **integrare le attività** in ambito tecnologico nella **pratica didattica**.

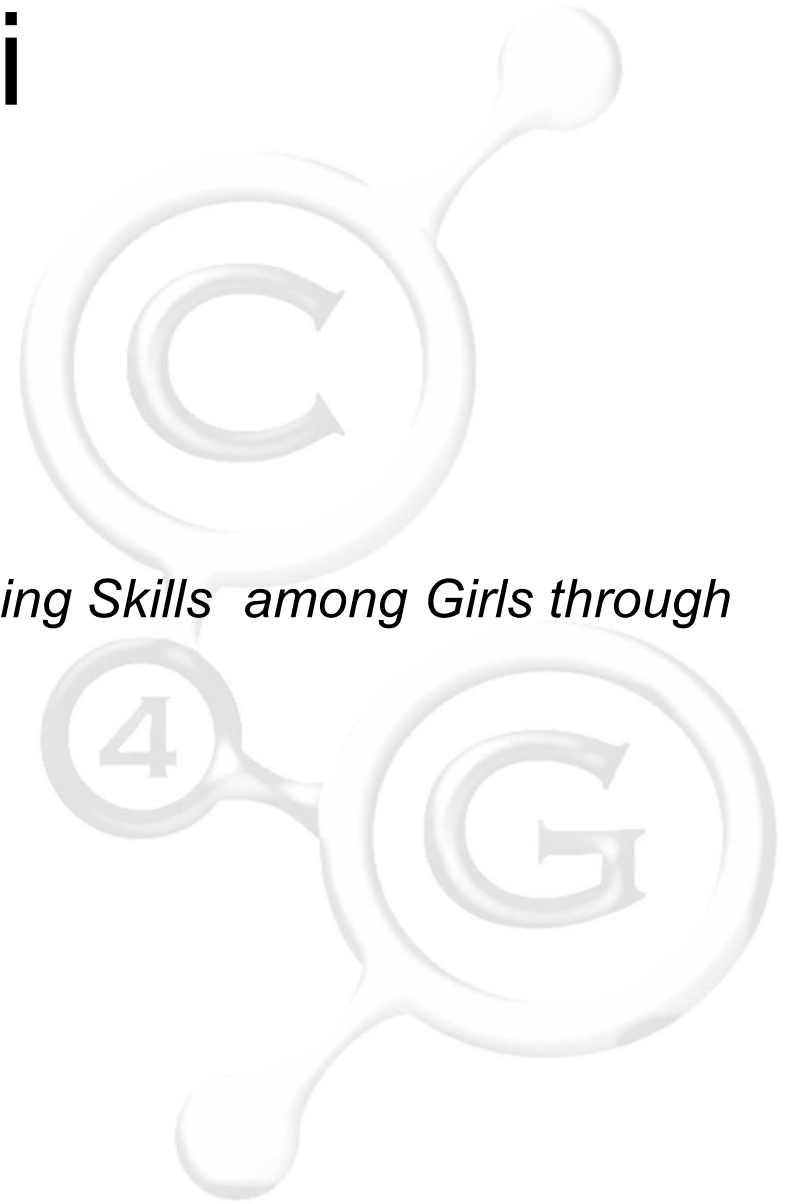


# Risultati

**IO1** - *Methodological Learning Framework*

**IO2** - *Promoting the Development of Programming Skills among Girls through Serious Games*

**IO3** - *Instructional Support Content*







# Quadro metodologico

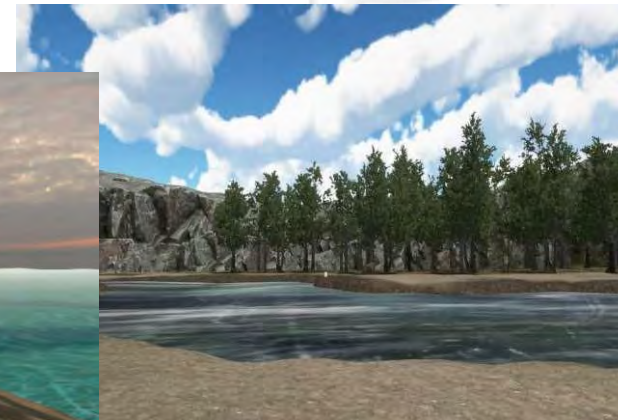
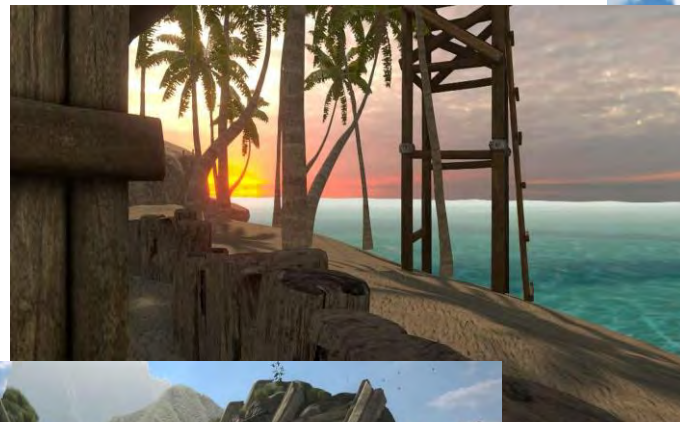
Il risultato di progetto è un **quadro di riferimento metodologico** che supporta lo **sviluppo** delle **competenze di programmazione** tra i giovani, con particolare attenzione alle ragazze, prendendo in considerazione lo **status quo** nelle scuole e i **fabbisogni emergenti nel mercato del lavoro**.



# Seriuos game

Serious Game progettati per lo sviluppo delle competenze e conoscenze tecnologiche nei ragazzi.

Sia il software e sia i materiali didattici sono stati validati in **Grecia, Turchia, Italia, Slovenia e Portogallo.**





## Promoting Serious Games

A proof-of-concept design and development approach for advanced learners, building blocks of s

<https://www.coding4girls.org/>


### Teachers' platform

This is a web-based platform where teachers can prepare their coding course using Snap and access a public repository of courses created by other teachers.

The platform is available at <https://coding4girls-e-ce.uth.gr/#/>

**Teachers' Platform - User Manual**

Teachers' Video Guideline - How to use the Teachers' Platform




### Students' Game Environment

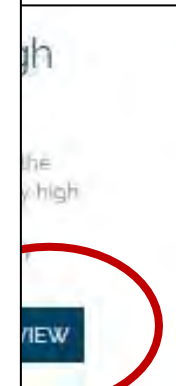
A Unity 3D video game that the students can use to discover and complete the courses in gamified fashion.

The software is available at these links:

- Windows: [https://ctile-ce.uth.gr/downloads/c4g/launcher/w64/c4g\\_win.zip](https://ctile-ce.uth.gr/downloads/c4g/launcher/w64/c4g_win.zip)
- Mac: [https://ctile-ce.uth.gr/downloads/c4g/launcher/m64/c4g\\_m64.zip](https://ctile-ce.uth.gr/downloads/c4g/launcher/m64/c4g_m64.zip)
- Linux: [https://ctile-ce.uth.gr/downloads/c4g/launcher/linux/c4g\\_linux.tar.gz](https://ctile-ce.uth.gr/downloads/c4g/launcher/linux/c4g_linux.tar.gz)

**Students' Game Environment - User Manual**







Name:

Changing Sprite's costumes

Challenge Description:

Let's the Sprite change the costume.

Mini Game Category

Drawing ▾

Mini Game

Puzzle Game ▾

Timer

120

Tag

Moviment

## Mini Game

Match3 Game ▾

Match3 Game

Find your path Game

Inventory Game

Stepping Game

Sound Game

Snake Game

Puzzle Game

Pattern Matching Game

Stepping Game

Dice Game

Multiple Questions Game

eractions



# Snap solution

The image shows the Snap! programming environment. On the left is the 'Scripts' palette with various blocks. The main workspace shows a ballerina sprite on a stage. The script for the sprite is as follows:

```
when green flag clicked
  go to x: -220 y: -40
  repeat 14
    next costume
    move 30 steps
    wait 1 secs
```

The 'Scripts' palette contains the following blocks:

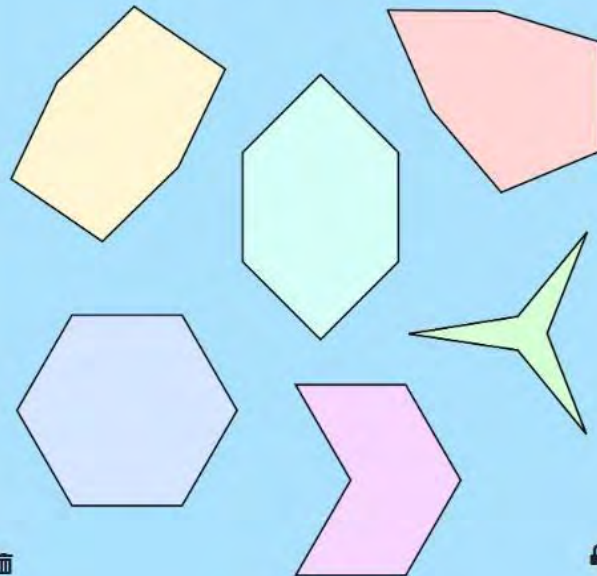
- Motion: move 10 steps, turn 15 degrees, turn 15 degrees, point in direction 90, point towards, go to x: 0 y: 0, go to, glide 1 secs to x: 0 y: 0, change x by 10, set x to 0, change y by 10, set y to 0, if on edge, bounce
- Control: when green flag clicked, repeat 14
- Looks: next costume
- Operators: wait 1 secs
- Variables: x position, y position, direction



Aggiungi una nuova nota

The activity is carried out with three different shapes: a square, a rectangle and the letter T.

Try to choose other shapes and modify the program accordingly.



Try to build and draw 3D images using previously prepared backgrounds.

Is it difficult for you?





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A proof-of-concept  
design and develop  
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[Teachers' Platform - User Manual](#)

Teachers' Video Guideline - How to use the Teachers' Platform



### Students' Game Environment

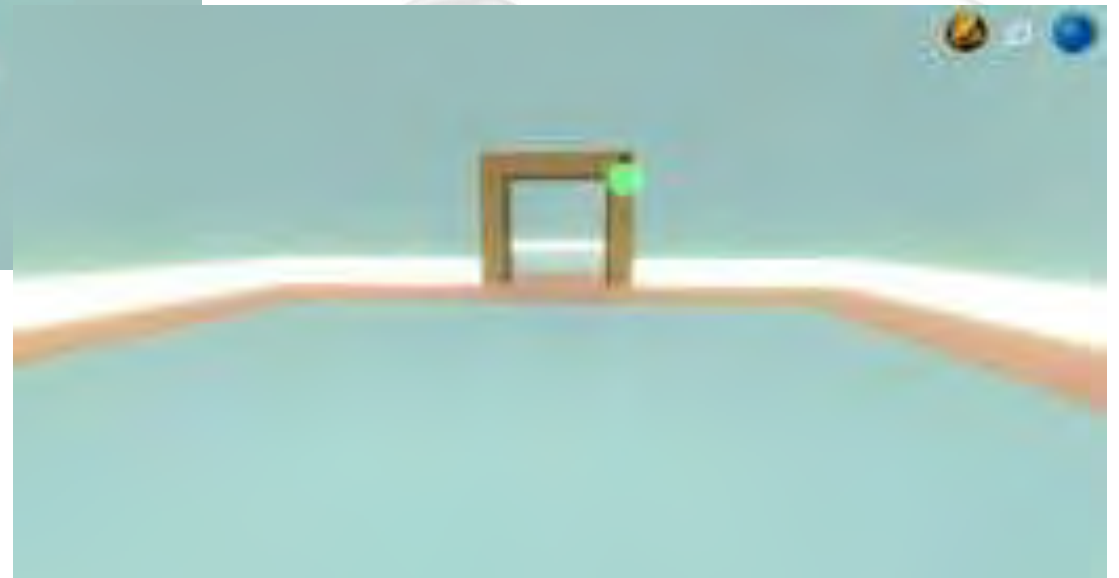
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- Mac: [https://ctile-ce.uth.gr/downloads/c4g/launcher/m64/c4g\\_m64.zip](https://ctile-ce.uth.gr/downloads/c4g/launcher/m64/c4g_m64.zip)
- Linux: [https://ctile-ce.uth.gr/downloads/c4g/launcher/linux/c4g\\_linux.tar.gz](https://ctile-ce.uth.gr/downloads/c4g/launcher/linux/c4g_linux.tar.gz)

[Students' Game Environment - User Manual](#)









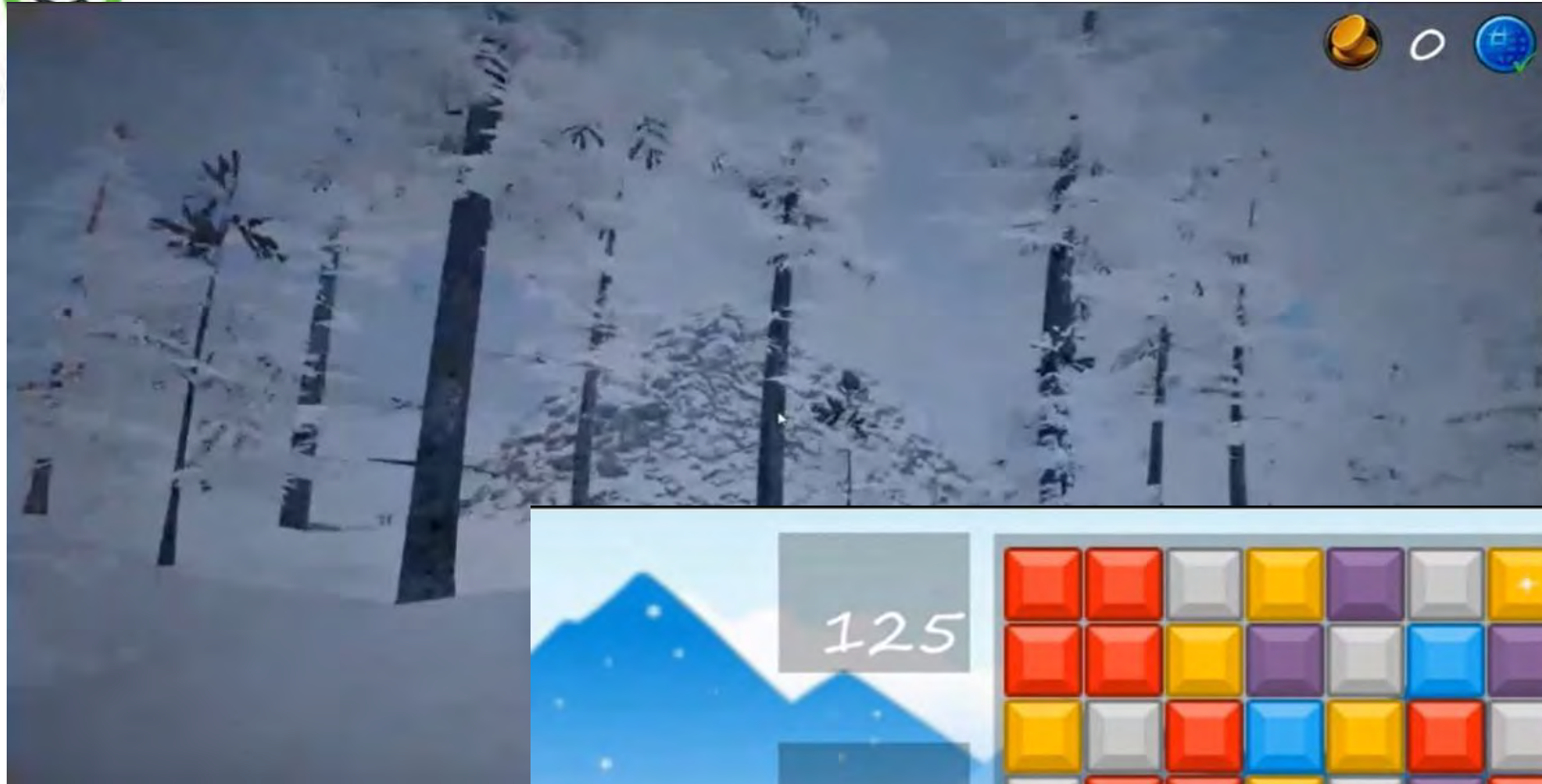
Scoprire Snap!

0 1 2 3

**Instructions**

**Challenges' activities**

The image shows a digital interface for a game titled "Scoprire Snap!". At the top, there is a title bar with the text "Scoprire Snap!" and a red close button. Below the title bar is a large, light-brown rectangular area containing four cards numbered 0, 1, 2, and 3. Each card has a small illustration of a person. A red arrow points from the "Instructions" box to the card with the number 0. Three red arrows point from the "Challenges' activities" box to the cards with numbers 1, 2, and 3. The interface is set against a dark background with a blue vertical bar on the left and a white decorative swirl on the right.





**Snap!** Untitled

**Character:** Girl (draggable)

**Scripts:**

- clicked
- when clicked, say "canta la principessa e il principe a trovare gli animali" for 4 secs
- when clicked, say "mostra loro il percorso giusto disegnandolo" for 4 secs
- when clicked, say "attenzione, i percorsi non possono incrociarsi" for 4 secs

**Key Presses:**

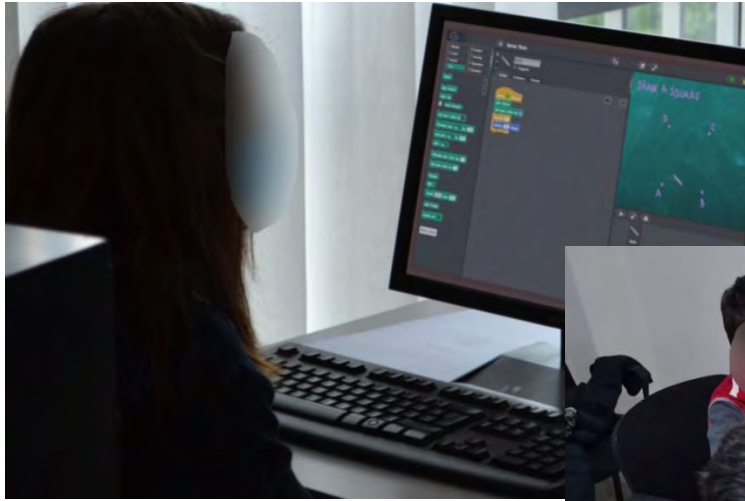
- when right arrow key pressed: point in direction 90, move 10 steps, if touching, move -10 steps
- when down arrow key pressed: point in direction 180, move 10 steps, if touching, move -10 steps
- when left arrow key pressed: point in direction -90, move 10 steps, if touching, move -10 steps

**Stage:** A maze on a grassy background with a Girl, Cal (cat), Princess, Prince, and Dog.

**Character List:** Girl, Cal, Princess, Prince, Dog




# Attività di validazione





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*Grazie per l'attenzione!*

A large, faded version of the logo from the top-left corner is positioned in the background on the right side of the slide.