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GAME DESIGN BASED LEARNING OF PROGRAMMING FOR GIRLS

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CODING 4 GIRLS Project

- Overcoming the gap between male and female,
- introducing more attractive learning methods.

- Innovative methodological learning framework for building programming skills.
- design thinking methodologies.

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

- Teachers from primary and secondary school,
- 10-16 years old students.

Game (design) based learning

- Games are widely used in the classroom,

- many learning benefits

- studies:
  - students interested in using educational games,
  - games motivate, provide feedback, support skills, influence behavior and attitudes,

- C4G: students learn by creating games.

Students will:

- Prepared for computer science careers,

- apply developed programming skills in larger contexts,

- build analytical, critical thinking,

- ICT solutions can improve quality of life,

- introduce solutions to real-world problems.

Interesting games for girls

- Social games with rewards,

- role-playing games and new identities,

- storyline motivating element,

- challenges, fun, feedback,

- nature-related themes,

- main characters animals and fantasy,

Visual programming language Snap! - https://snap.berkeley.edu/
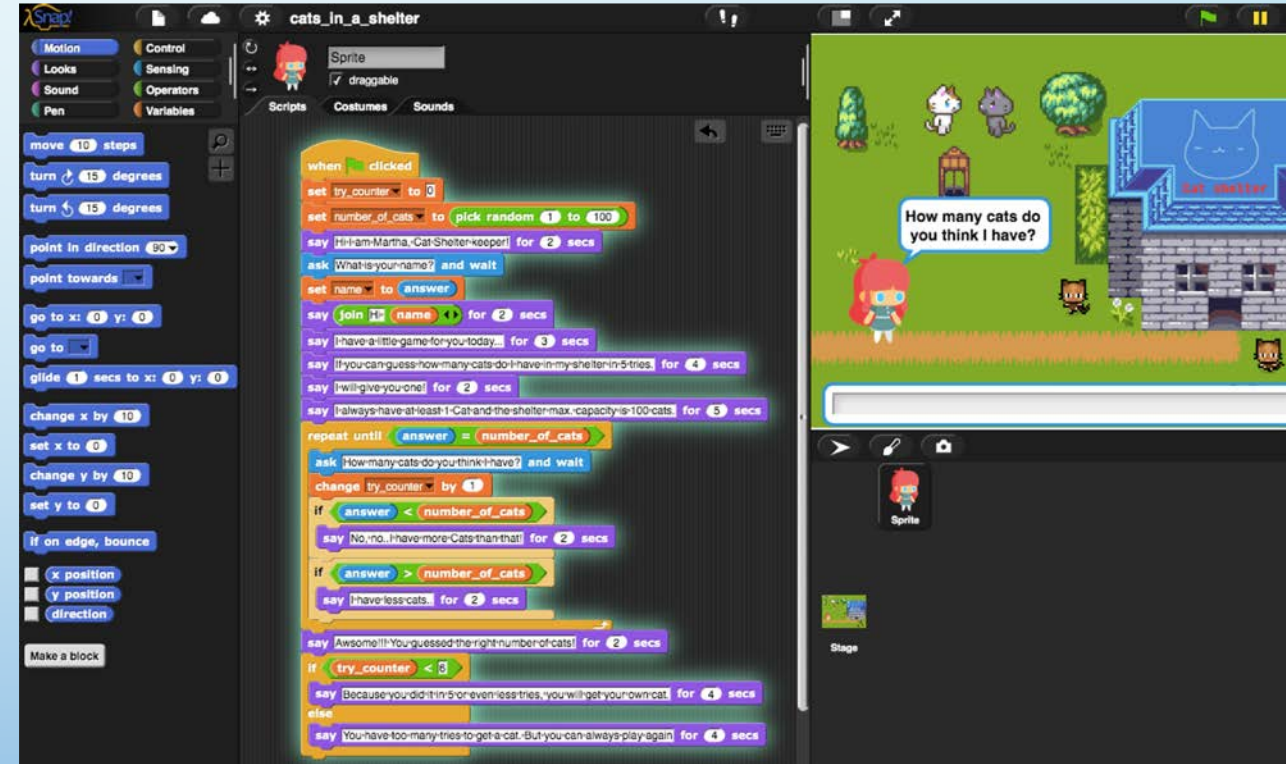
Learning sheets for teaching programming

- Real world problems,

- "low entry-high ceiling" approach,

- partially completed solutions.

Scenarij učenja 6 – Kameleonov ljetni odmor

| Naziv scenarija	Kameleonov ljetni odmor
Potrebno predznanje iz programiranja	Dodavanje i uređivanje pozadine i lika Omogućiti da lik govori Korištenje naredbe *Ako ... onda ...* Kretanje objekta pomoću određenih tipki (npr. strelica)
Ishodi učenja	Koncepti programiranja: • kretanje objekta na temelju događaja • očitavanje jedne ili više boja • čitanje logičke vrijednosti u logičkim izrazima • definiranje, razlikovanje, dinamičko provjeravanje i reagiranje na različita stanja igre

I am between the forest and the beach
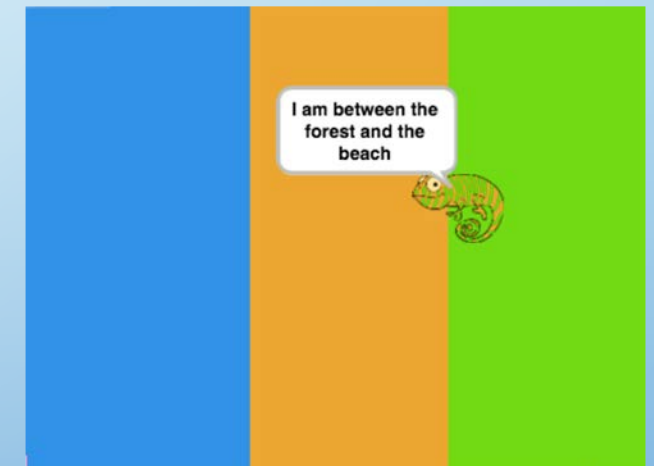
Learning sheets for teaching programming

- Overall educational objective for each learning activity,
- concepts covered by the learning activity,
- specific learning objectives,
- expected learning outcomes,
- step-by-step use of the Coding4Girls game design-based learning approach,
- assessment methods for evaluating the developed knowledge,
- questions to stimulate discussion among learners,
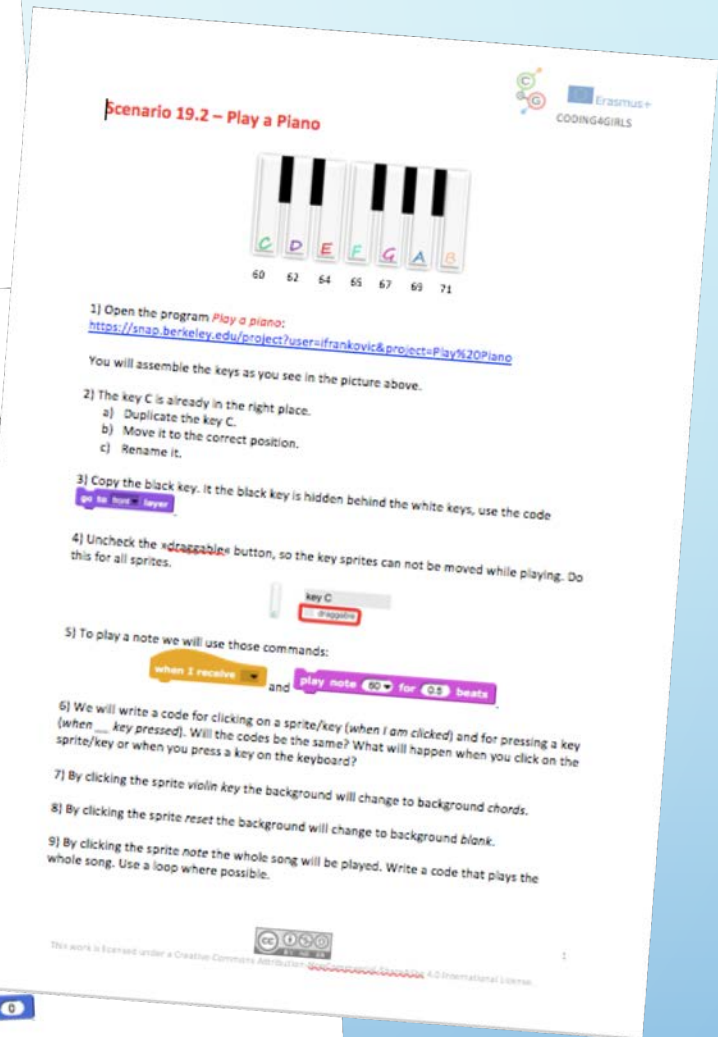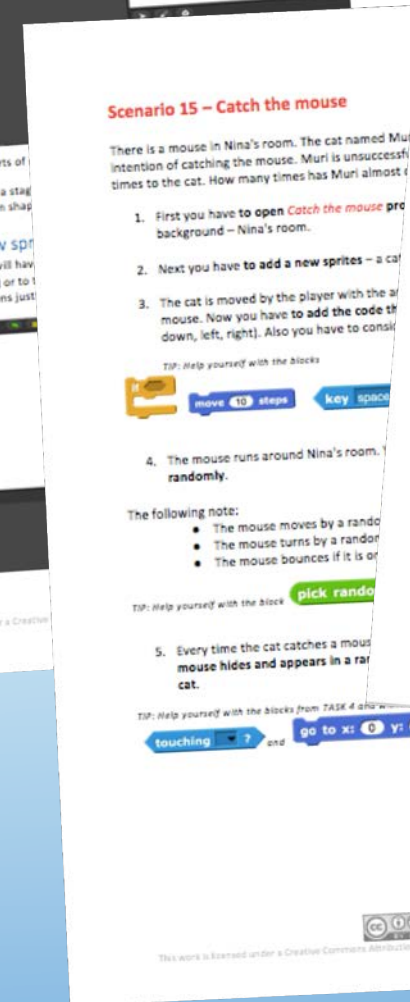- additional tasks for more advanced students.
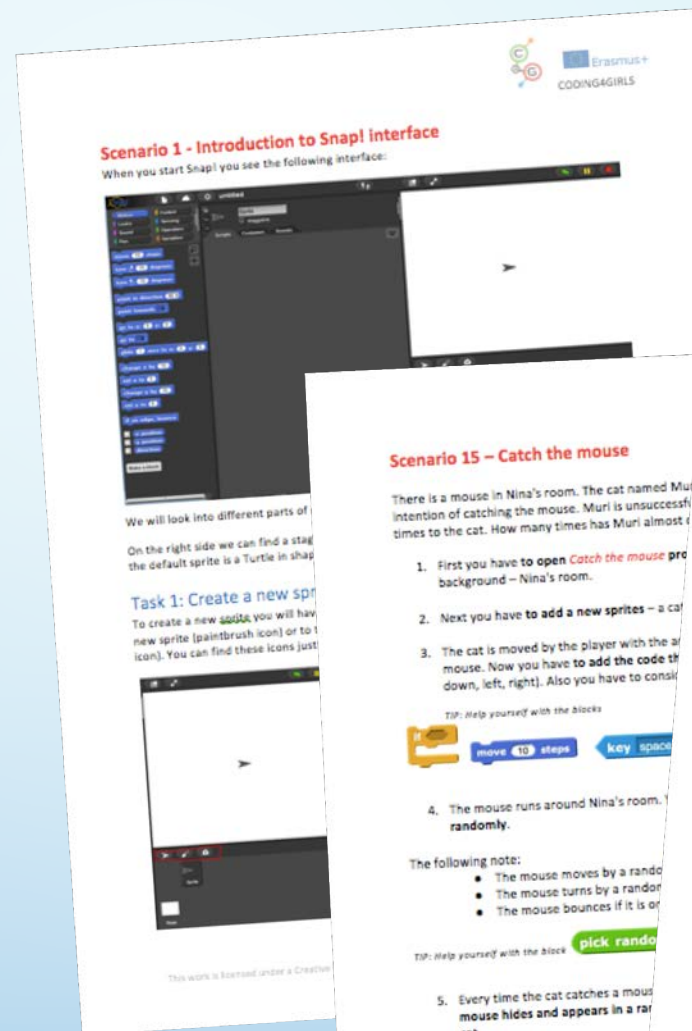
Learning sheets for teaching programming

- More than 20 learning sheets,
- suggested order,
- generic functionality,
- user interaction process,
- Snap! activities,
- half-baked scenarios,
- basic and advanced activities.
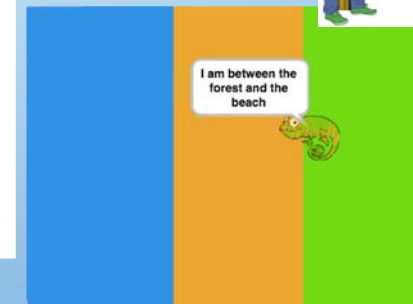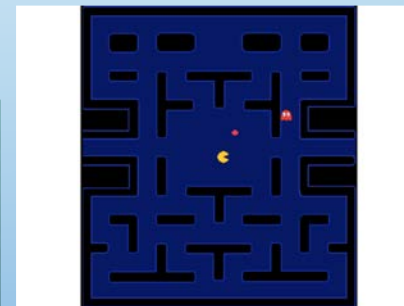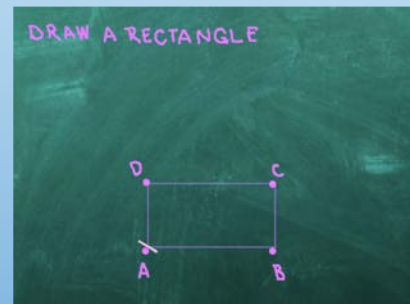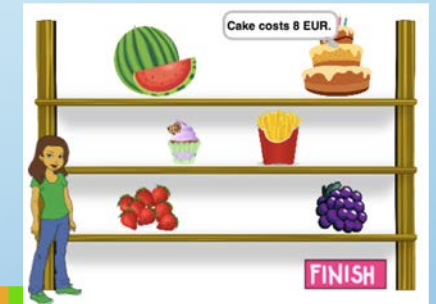
Instructions for students

- Instructions for individual work,
- in English, Italian and Slovenian.

YouTube channel

- A collection of videos,

- video structure:
  - previous programming experience,
  - learning outcomes,
  - duration, methods, forms,
  - composition of the code,
  - remarks.

Scan QR code or visit
https://www.youtube.com/channel/UC0DEd
wkV9PsJ4Fb70MAJQrg

Conclusions

Testing (in progress):

- more than 900 students,
- more than 230 teachers,
  - questionnaire,
    observations, interview.

In Slovenia:

- winter school,
- course in primary school,
- Workshops.

THANK YOU ☺

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