TITLE OF THE SCENARIO	**Binary conversion**	
Keywords	Decimal, IP, binary	
Information about students?		
Age Range and grade of the learners	Over 15 years old	
Special characteristics of learners	- Not applicable -	
The learning emphasis?		
Learning subject / field / skills or dimensions	**Learning subject:** Binary conversion **Field:** Computer Networks **Skills**: calculations of decimal numbers, decimal – binary transformation	
Specific Goals	**At the end of this course students will be able to:** * transforms numbers from decimal to binary. * communicate *develop the team work skills and to increase the speed reaction * cooperate	
The teaching emphasis?		**Rate 0-5**
Learning metaphor that can support the learning objectives	Acquisition (I will transmit / present / explain content to the learners)	☐ ☐ ☐ ☐ ☒
	Imitation (I will show to the learners how to do things related to this subject / content, i.e. I will be a model for them)	☐ ☒ ☐ ☐ ☐
	Discovery (I will provide the necessary artifacts for the learners to find out / discover a specific concept / knowledge on their own. I will organize guiding activities and provide tips)	☐ ☐ ☒ ☐ ☐
	Participation (I will organize sessions in which learners will discuss, share and / or collaborate for learning a specific subject / content and I will facilitate the interaction between them)	☐ ☐ ☐ ☐ ☒
	Experimentation (I will organize activities in which learners will understand, learn how-to, practice, and / or exercise)	☐ ☒ ☐ ☐ ☐
Description of the game	**Narrative description of the game plot**	Students are connected into a session, in groups of 8 persons. Each student is a “byte”. The trainer gives them a number to be converted in binary mode. Each student (after calculation) will know if it is 0 or 1. When the calculation is completed, depending on the speed reaction, they will give a short message ““I’m 1” or “I’m

		0". After this, the roles (position) will be changed. This scenario can be used for groups of x*8 students, creating a competition between them, testing collaboration and cooperation, trust, and speed reaction.		
	Goals	Learning how to transform decimal in binary Cooperation Teamwork		
	Characters	Bytes (multiple of 8 players) Trainer		
	Scenes	Park, classroom		
			Learning settings	**Estimated Time**
Narrative Description of learning activities - step by step organization and structuring		Before the game: The trainer explains the way in which decimal numbers are transformed in binary numbers for a specific case of IP addresses (these addresses can be binary encoded on 8 bytes). Short presentation of Eutopia, choosing bytes.	In the classroom	15 min
		During the game: Trainer offers different numbers to be encoded; supervise de game sessions	In the classroom / Online / At home	25 min
		After the game: Debriefing session. The results can identify different problems for each participant.	In the classroom / Online	10 min
				Total: **50 min**
How will I evaluate students?				
Evaluation approach		➢ Recorded session ➢ Monitoring during the game ➢ Performance evaluation for each student and group based on speed reaction.		
What will learners need in order to achieve learning objectives?				
Prerequisite		➢ English basic level ➢ Computer use – basic level, especially typewriting		
Settings and materials		➢ A lab with blackboard and computers for each student ➢ "Binary conversion" game		
What is needed to implement the scenario?				
Applications	Mandatory	➢ <EUTOPIA> ➢ Accounts on EUTOPIA Server		

involved	Optional	
Infrastructure / equipment	Mandatory	➢ Internet connection ➢ A computer per learner ➢ A computer for trainer
	Optional	➢ LCD projector
Learning Resource Type		➢ Online resources ➢ Examples of transformation
Time / Space resources		➢ A computer lab ➢ Estimated time: 50 minutes
Other things to consider		
This game is an efficient funny way to learn and practice binary transformation (conversion). Stimulates learning involving also socio-human behaviors: communication, trust and team work. This scenario can be applied in any moment of a lesson, starting with second meeting.		