# Final exam AB-2010 (Episode 2/2)

## Storyline

Congratulations! You have saved the town! (Or at least, we firmly believe that you have completed previous episode successfully!) But guess what, inhabitants caught a terrible disease from the dying Alien and are wandering in confusion around the city. You need to take them all to the science factory where you can cure them! Yes, it is true that the army could do it, but scientists decided to try out their new "Guide" agent for this task. You know, the research is not all you have to do. You must also test your stuff and write papers, so the scientists has left the high-level behavior for the Guide unfinished. And you better do it, because they have already started to write a paper that describes agent's performance in glorious manner. And the last detail, the deadline for the paper is in 3 hours! You better get hurry again! ☺

## Assignment

Your task is to create an agent, that can guide the last civilien down to the science factory.  Civilian reacts to different commands (their concrete implementation is available in the template project). Commands are simple, but they are sufficient - „stop", „turn", or „follow me". Unfortunately the civilian is not smart (and is ill). So it will follow your agent only if it can see it. Whenever the Civilian loose your agent from sight, it will stop. Also the Civilian is ill-minded, so it will stop following you from time to time. You have to prepare for that.

The scenario takes place on the DM-UnrealVille-ub again.

## Terms of exam

To obtain A for a final exam, the agent must fulfill these requirements:

1. The agent must be able to finish the scenario, i.e., it must be able to guide the Civilian to the factory.

2. The agent must be able to actively search for the civilian.

3. The agent must observe whether the Civilian is following him.

4. Whenever the agent finds out, that the Civilian has stopped, it has to go back for the Civilian (not to start walking randomly).

To obtain C for a final exam, the agent must fulfill this requirement:

1. The agent must be able to finish the scenario, i.e., collect 50 blood samples.

## Template project

You will be given a template project again. All required behavior primitives (actions, senses) are already implemented, all you have to do is create high-level plan. The only difference is in the communication handling. There are a few methods, that serves as a hooks for implementing behavior to certain Civilian's answers. You will find these methods clearly marked in the code.

# Rules of play

1. Position of the factory can be obtain from the object `GameInfo.getFactoryLocation()`. This location is very close to one of navigation point, so it is possible to obtain the navpoint and use it instead of the bare location.

2. Civilian is running around randomly and never walks into the factory on its own.

3. To communicate with the Civilian, you have to use correct action primitives that are present in the template project. Take care whether the Civilian is close enough to understand you, use sense `isPlayerInTalkingDistance()`, otherwise the Civilian will reply that it does not understand you. Available commands:

    a. `commandCivilianStop()` - the Civilian will stop and reacts with `answerStopped()`

    b. `commandCivilianTurn()` - the Civilian will turn 90 degress and reacts with `answerTurning()`

    c. `commandCivilianFollowMe()` - if the Civilian can see your agent, it will answer `answerFollowingOk()` and starts following you, otherwise it will react with `answerCantFollowCantSee()` and will stand-still.

    d. `questionCivilianCanSee()` - query, whether the Civilian can see your agent. If it can, it will react with `answerCanSee()`, if not, it will react `answerCantSee()`

4. Civilian is listening to you very carefully, but you can't command him often, if you issue 6 commands in 2 seconds, it may pissed it off and start to ignore you for 20 seconds.

5. Be warned, the Civilian is ill-minded, it may stop to follow you on its own. You have to re-issue the following command from time to time..

6. Again, just to be sure, the Civilian will be following you only if it can see you and it will understand your commands only if it is close enough.

7. The Civilian is moving slower than your bot. The concrete constant and primitives for setting speed of your agent are present in the template project..

8. You have 3 hours to create the agent.

# Additional rules of play

1. It is good to know that you may face a different location while running, just call `faceCivilian()`, which will be effective if you can see the Civilian.

2. You can use sample projects from Pogamut and all agents that we have been creating throughout the practices, but we do not guarantee their functionality.

3. You must not use OWN, pre-created bots.

4. You must not use command `Respawn` to move around in the town or in any other manners.

5. You must not alter GameBots2004.ini, to run GB2004 use only `start-scenario.bat`, that will also start the Civilian.