

# Artificiell Intelligens för Spel DV1569

## Project Assignment

### 1. Introduction

The goal of this project is to implement an AI bot for the popular real time strategy game Starcraft:Broodwar. Implementing a complete bot for Starcraft is a quite time consuming task, but in the project you will create code that can serve as a start for a more complex bot. This will give you an idea of how to build AI systems for complex games. The programming language to use is C++.

### 2. Getting started

On the course page on It's Learning you will find all the files you need. Start by downloading Starcraft.zip and unpack to Desktop or Documents on your computer (or another folder where the user have full read and writeaccess). Download Resource1.zip and Resource2.zip and place the contents of both zip files in your Starcraft folder. Open the \_README textfile for further instructions.

### 3. API

The bot uses an API called BWAPI (version 3.7.4) to communicate with the Starcraft game engine. To solve the tasks you need to use classes and methods from the BWAPI, so a good idea is to read the documentation at <https://code.google.com/p/bwapi/wiki/OldDocumentation>.

### 4. Project tasks

The project will be graded with a fail (U) or a Pass (G) grade. The functionality to implement is divided into five steps. It is recommended you complete one step at a time. To receive a Pass grade you must complete Step 1, 2 and 3 and either Step 4 or Step 5.

Step	Construct	Logic
1	2 x Supply Depot 1 x Barracks 10 x Marine	The marines shall be sent to guard the choke point around the home base.
2	Same as step 1 plus: 1 x Academy 1 x Refinery 3 x Medic 5 x Worker	The Refinery must be built on a vespene gas vein. Once the refinery is built, use two workers to gather gas. The gas is needed to construct the Medics. Medics shall move to the choke point. The new workers shall gather gas and minerals.
3	Same as step 2 plus: 1 x Factory 1 x Machine Shop add on 3 x Siege Tank Siege Mode upgrade	The Siege Tanks shall move to the choke point. Once an enemy unit is within sight range of a Siege Tank, the tank shall go into Siege Mode. When no enemy is seen, the tank shall be in normal mode.

4	Same as step 3 plus: 1 x Command Center 4 x Workers	The bot shall expand to a new base location. At the selected base location a Command Center shall be built. Once the Command Center is ready, four additional workers shall be constructed at the new Command Center and be assigned to gather minerals.
5	Same as step 3 plus: Attack!	When all units have been constructed (Marines, Medics, Siege Tanks) they shall be sent to attack the opponent base.

## 5. Groups

You are allowed to work alone or in groups of two students.

## 6. Submission

Submit your source code and the compiled dll file (is in the folder bwapi data/AI/) at the course page on It's Learning. You will also need to submit a short report that explain how you approached and solved the assignment (Maximum 1 page).