

Playsoft
Unity Programming Test
Description

Hello!

In Playsoft we use user-stories to provide information about what needs to be done. Each user story usually takes from 20 min up to 8 hours to be done.

On the second page you will find a list of user-stories for this project. The list may seem long, but each task is quite small. You should implement as many tasks as you can, but *quality is more important* than quantity. Please treat this test like a small project for company's client and do your best to protect the client from crashes, bugs, unexpected behaviors, and bad code.

You have three days for this test. If you have any questions about the tasks or the test itself, feel free to ask and we will provide answers as soon as we can. Make sure you checked gameplay videos of the original Asteroids game made by Atari (you will find the link on the following page) -- this game is the main gameplay-reference for you.

It will be a BIG plus if you provide an "architecture overview diagram" in any way, A4 sheet with hand-drawn diagram will be fine, of course.

What we will evaluate:

- **Quality of the code** (code-style, fault-tolerance, architecture, etc.).
- Quality of the final product from user point of view.
- Extensibility: how easy/hard it will be to add new new features into the game.
- Number of user-stories you finishes.

Assets (graphics, sounds) should be taken from the the Internet. You can use either 2D or 3D approach, it's up to you.

Good luck!

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User Stories

The list is not prioritized, it's up to you to choose the order of implementing.

1. **MANDATORY TASK: AAP (As a Player), I will see bullets, asteroids and my own ship being able to cross edges of the screen and appear from other side (check reference video).**
2. AAP, I will see play button and highscore text in main menu. I will go to gameplay when clicking on play button.
3. AAP, when I enter gameplay from main menu or when I restart the game, my ship appears in the center of the screen, I have zero score, maximum number of lives and there are no asteroids on the screen.
4. AAP, I will have a ship moving with inertia and I will be able to control the ship with *keyboard arrow keys*
5. **MANDATORY TASK: AAP, I will be able to shoot bullets with *spacebar*.**
6. AAP, I will have Asteroids spawning outside of the screen in gameplay and then coming into screen.
7. AAP, I will die and lose one life when my ship touches an asteroid or my own bullet, all the asteroids should disappear immediately. In 2 seconds after the death I will start a new session (center of the screen, no asteroids, the score will remain).
8. AAP, I will receive certain amount of points for each destroyed asteroid (the same for all types of them)
9. AAP, I will see number of lives and current score indicators (being updated in real time) in gameplay.
10. AAP, I will see game over menu appearing (*current score, highest score, restart button, exit button*) when player loses last life. I will restart the game when clicking on restart and will go to main menu on exit button.
11. AAP, I will see the highest score saved between launches of the game, so I can restart the game and my highest score will not reset.
12. **MANDATORY TASK: AAP, I will see asteroids of three sizes: big, medium, small. When I destroy a big asteroid, then two medium asteroids appear at the same position instead of the big one, when I destroy a medium then two small appears. If I destroy a small -- nothing appears.**
13. AAP, I will be able to play comfortably with any aspect ratio between 4:3 and 16:9, any possible resolution and orientation (portrait, landscape).
14. As a Game Designer, I will have an easy-to-use way to adjust game constants (number of lives, number of score per asteroid, speeds, timing, etc.) and a readme file explaining to a GameDesigner what to do (here we assume that GD has Unity installed too).
15. AAP, I will hear background music, sounds of shots, explosions, death and respawn of the player.
16. AAP, I will be able to play on mobile devices without keyboard.
17. AAP, I will see fx for explosions, shoots, engines, etc.

If you have any question about how the game should look like, then first check "Asteroids" game made by Atari ([https://en.wikipedia.org/wiki/Asteroids_\(video_game\)](https://en.wikipedia.org/wiki/Asteroids_(video_game))), <https://www.youtube.com/watch?v=5rjtJ2GMN8>) and then contact us if you still have questions.