UNITY DEVELOPMENT

Congratulations, you made it to the next phase of DTT's job application procedure!

This phase will consist of a development test made in the Unity Game Engine. During your time at DTT, you will work for strong international brands, such as ING, Philips, Rabobank, FOX Sports, and KPMG. Through this test, you should demonstrate that you are capable of contributing to contribute to DTT and her clients. Details, quality of deliverables, and going the extra mile to satisfy the customers are crucial. This is what DTT stands for. We look for tests that reflect these values.

THE TEST

The goal of this test is to generate a perfect maze using an algorithm of your choice. A perfect maze is defined as having no loops or closed circuits, and no inaccessible areas. In a perfect maze, any two points are connected through a singular, unbroken path. There are multiple algorithms to generate such a maze, as is detailed on this Wikipedia page.

Keep in mind

  I. Log the hours you spend on the project in the provided Excel document, provide a detailed description of your activities to help us in the grading process.
  II. We strongly advise you to complete the assignment within 15 hours, and to adjust your scope based on this advisory deadline.

Functional requirements

The project you deliver should implement the following functional requirements.

  I.   A perfect maze generator;
  II. The game requires UI elements to:
       a. Change the width of the maze;
       b. Change the height of the maze;
       c. (Re)generate the maze;
  III. The maze is to be displayed in its entirety on the screen regardless of its size, with minimum white space surrounding it;

IV. Your game will be tested on desktop in the editor - exporting to mobile is not required;

V. Your code will undergo the most scrutiny during our review, make sure it is well structured and extensively commented;

VI. You are free to design the appearance of both the maze and interface - a basic/simple design will not be judged negatively, but a good design will leave a good impression;

VII. Your delivery should include 'development documentation' that reflects your solution. The form of documentation is up to you to decide; class diagram/ flowchart/ state diagram/ etc.. The quality, accuracy and understandability of documentation forms a significant portion of the grade.

VIII. Use C#.

Bonus points for a good impression (all optional)

I. Implement more than one maze generating algorithm and allow the user to change algorithms using the interface;

II. Implementing (UI) animations is encouraged - DTT makes use of the LeanTween animation asset, but you are free to choose your own;

III. Add a character that is able to navigate through the maze via user input;

IV. Create your own shaders to spice up the visuals;

V. Create and use your own 3D models/animations/particle effects/etc.;

VI. Have a fun idea? Feel free to implement it :)

As stated above, we will primarily focus our review on your code and your ability as a developer. However, as we get many applications for the Unity team, we highly encourage you to invest time in the visual and gameplay aspects of your test, as these will help you to differentiate yourself from other candidates. As a Unity intern, you are expected to be productive and useful across the full stack of game development, from writing back-end code to crafting the user experience, UI-animations and gameplay. We are more likely to invite candidates for a follow-up interview when we can accurately gauge their ability on every level of game development.

Limitations

1. It is not allowed to make use of the Unity Asset Store for anything directly related to the essence of this test. Assets related to design, animations, particle effects, etc. are allowed, but use them sensibly and with clear purpose.

2. When consulting an online source for the generation, it would aid our grading process if you'd refer to this in your hour logs. After a few years of receiving tests, we can recognise pretty much every maze tutorial out there; we are OK with a tutorial being used as long as the tests deviates/adds enough for us to grade your ability to create something of your own,

Delivery

When you are satisfied with your game, **zip** your project (including your hour log and documentation) and send a WeTransfer link to your person of contact at DTT.

Our review

As mentioned earlier, the quality and structure of your code will be the foremost subject of our review. This table stipulates the criteria by which we will review your test; keep these in mind during development.

Criteria	Maximum score
Completeness of functional requirements	6
Quality of code	4
Structure of code and unity set-up	6
User experience (UI/UX and visuals)	3
Development documentation	2
Completeness of hour log and Deadline management	3
Maximum score	24

Questions?

If you have any question regarding the requirements of the assignment, or if you are stuck on a problem for too long, please don't hesitate to contact us.

More DTT

Feel free to have a look at all our apps at: https://en.d-tt.nl/app-developer-amsterdam.