

# Posudek bakalářské práce

Matematicko-fyzikální fakulta Univerzity Karlovy

**Autor práce** Ogulhan Bozkir  
**Název práce** Just Blade: A 3D melee combat game in a medieval setting  
**Rok odevzdání** 2024  
**Studijní program** Informatika  
**Specializace** Foundations of Computer Science

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**Pracoviště** UK MFF KDSS

**Role** Oponent

Prosím vyplňte hodnocení křížkem u každého kritéria. Hodnocení *OK* označuje práci, která kritérium vhodným způsobem splňuje. Hodnocení *lepší* a *horší* označují splnění nad a pod rámec obvyklý pro bakalářskou práci, hodnocení *nevyhovuje* označuje práci, která by neměla být obhájena. Hodnocení v případě potřeby doplňte komentářem. Komentář prosím doplňte všude, kde je hodnocení jiné než *OK*.

<b>K celé práci</b>	lepší	OK	horší	nevyhovuje
Obtížnost zadání	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Splnění zadání	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rozsah práce ... <i>textová i implementační část, zohlednění náročnosti</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Komentář The thesis completely solves the assignment, with an average text length. The code size is rather bigger than typical (390 kB of C# code), however it is given mostly by detailed comments and long parts of code referencing different parts of the complex 3D models – if this is taken into account, the overall size and complexity is not above average, but is definitely non-trivial and fully sufficient for a bachelor thesis.				

<b>Textová část práce</b>	<b>lepší</b>	<b>OK</b>	<b>horší</b>	<b>nevyhovuje</b>
Formální úprava ... <i>jazyková úroveň, typografická úroveň, citace</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Struktura textu ... <i>kontext, cíle, analýza, návrh, vyhodnocení, úroveň detailu</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Analýza	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Vývojová dokumentace	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Uživatelská dokumentace	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Komentář All the figures are unreferenced from text – referencing figures from text is however a common expectation to be able to read the text reasonably. Furthermore very commonly the figures even do not provide "ilustration" of the text at all (i.e. the text does not mention the content of figures at least indirectly), and the figures are just bystanders seemingly from some "parallel thesis". The language of the thesis is not consistent - in most parts the "I" is used in all the text (which is rather uncommon for bachelor thesis), other parts use exclusively "we" in similar context.

There are few typographical problems like splitting identifiers and paths on multiple lines (even short ones) making them hard to grasp. Also making quotation marks in the same font as identifier makes them part of that identifier - something probably not intended by the author.

Almost all the references go to generic sources that are used just as an anchor for term or concept definition. With the exception of related games, the thesis is actually missing any related work. In the analysis author in detail weights different approaches to solve the thesis problems, however he does not take into account any previous related work in the context.

Implementing agent movement in Unity or complex combat systems it definitely not unique - there is even a very similar bachelor thesis "3D Physics driven swordfighting simulator" by Jakub Hronik defened a year ago in June 2023, and other resources should be available as well - but author presents his ideas as if in isolated universe, missing the important point of the analysis. Similary problems like "Separating the Upper and Lower Bodies" or "Weapon Collision" must have been solved by others - but author presents these as unique problems, and describes how did he solve it in past, or even invents existing methods giving them custom author name in sentences like "... approach is what I call ...", but ignores how others solve similar problems, or that even exactly same approaches already exist and do not have to be reinvented. If the whole analysis section should be summarised, then "reinventing the wheel" seems to be the major characteristics.

The gameplay is in general not balanced. On moderate level it is hard to hit even the inical oponents, on easy level one get excessive amounts of money easily, and there is nowhere to upgrade then. The key problem is, the thesis is completely missing any actual game design document, that would in detail elaborate the game play concepts - this seems to lead to "random" setting of different game parameters negatively influencing the gameplay. Also any play test that would help balance the game mechanics is also omitted.

The developer documentation correclty provides a high level overview of the key concepts of the implementation, but strangely mixes in parts of the analysis with very personal statements like "I thought I just had to synchronize the movement" or "I decided to re-implement" or "I didn't think there was much difference between using Rigidbody or CharacterController", then actually revealing the apparent author's inability to correctly study the relevant concepts and rather focus on "trial and error" approach (not expected from bachelor level student).

The user guide is rather strange. Even the initial section "Installation" is confusing: it talks about different operating systems completely ignoring that the thesis provides build only for Windows. Futhermore is talks about unzipping something, but the Build folder (actually not referenced in the text) is not zipped, then is recommends installing and using 7zip even if the Windows OS is able to unzip archives on its own for decades. The rest of the documentation is structured as a reference list of all the menus and features, and as such has mostly no target audience. Any type of tutorial (in text, in video form, or in game), that is the most beneficial type of user documentation for game-like thesis, is missing.

**Implementační část práce**

	lepší	OK	horší	nevyhovuje
Kvalita návrhu ... <i>architektura, struktury a algoritmy, použité technologie</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kvalita zpracování ... <i>jmenné konvence, formátování, komentáře, testování</i>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stabilita implementace	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>Komentář</b> The code is nicely structured and uses valid naming conventions and contains detailed documentation comments. Game itself is stable, there are just minor glitches in leg animation especially in crowded situations. The only problematic part are the menus - there are conceptual problems, like ability to get back 1 screen, but not futher, so the player actually cannot cancel or go back in typical multiscreen flows in the game. Also the "buying menu" seems quite broken: often one have to click multiple times on "Buy" buttons, sometimes the "Confirm" button shows and sometimes not (even if the mouse does not move), sometime the "Confirm" button shows on other button than was clicked, and many other problems. The general complexity of this screen seems to be another impact of missing game design document.				

**Celkové hodnocení** Velmi dobře (spíše horší)

**Práci navrhuji na zvláštní ocenění** Ne

**Datum** 20. června 2024

**Podpis**