



TABLE OF CONTENTS

UNDERGRADUATE THESIS	1
BACHELOR'S THESIS.....	2
APPROVAL PAGE	3
STATEMENT OF ORIGINALITY	4
TABLE OF CONTENTS	5
LIST OF FIGURES	9
ABSTRACT	10
CHAPTER I	11
1.1. Research Background.....	11
1.2. Research Problem	12
1.3. Research Scope.....	12
1.4. Research Objective	12
1.5. Research Advantage	13
CHAPTER II.....	14
CHAPTER III	17
3.1. Dota Workshop Tools	17
3.2. Asset Browser and Hammer	19
3.3. Dota 2 Directory and Scripts.....	20
3.4. Custom Games and Custom Games Templates	21
CHAPTER IV.....	22
4.1. Research Description	22
4.2. Tools and Materials	22
4.3. Research Phase.....	22
4.3.1. Learning the game engine	23
4.3.2. Creating the template	23
4.3.2.1. DotA 2 LUA, KV Files and Hammer	23
4.3.3. Creating the template	25



4.3.4. Test run	26
4.3.5. Polishing and debugging	26
4.3.6. Publishing the template	26
4.4. Literature Study	26
4.5. Data Acquisition	26
4.6. Evaluation	27
CHAPTER V	30
5.1. Specification	30
5.2. Scripting the code for the Template	30
5.2.1. Base Template Rules and Functions	30
5.2.1.1. Addon game mode	31
5.2.1.2. Events	32
5.2.1.3. Filters	35
5.2.1.4. Settings but and Settings misc	38
5.2.1.5. Start Items	42
5.2.1.6. Thinker	44
5.2.2. Internals	45
5.2.2.1. Couriers	45
5.2.2.2. Events	48
5.2.2.3. Gold Modifier	50
5.3. Creating A Custom Game	51
5.4. Template Implementation	53
CHAPTER VI	55
6.1. Data Acquisition results	55
6.2. Games Published by Valve	56
6.3. Games Made by us	56
6.4. Games Made by the Community	58
6.5. Time comparison	60
CHAPTER VII	62
7.1. Conclusions	62



7.2. Limitations.....	62
7.3. Future works	63
REFERENCES.....	64



TABLE OF CONTENTS

Table 4.1 Data Aquisition	27
Table 4.2 Evaluation Table	28
Table 6.1 Data Acquisition Results.....	55
Table 6.2 Template Feedback	60
Table 6.3 Time Comparison	60



LIST OF FIGURES

Figure 1.1 Dota Steam Menu	17
Figure 1.2 Dota Properties DLC Tab	17
Figure 1.3 Dota Launch Menu	18
Figure 1.4 Dota Workshop Tools Interface	18
Figure 2.1 Asset Browser UI	19
Figure 3.1 Dota Addons Directory.....	20
Figure 4.1 Template UI example	21
Figure 3.1 Research Phase	23
Figure 3.2 KV file example.....	25
Figure 2.1Template addon gamemode code	32
Figure 2.2 template events code	34
Figure 2.3 template filters code.....	38
Figure 2.4 template settingsbut code	40
Figure 2.5 template settingsmisc code	42
Figure 2.6 template startitems code.....	43
Figure 2.7 template thinker code	45
Figure 2.8 template couriers code48	
Figure 2.9 template events code	50
Figure 2.10 template passivegold code	51
Figure 3.1 dota workshop manager	52
Figure 3.2 dota workshop publish	53