

R-Type

Generated by Doxygen 1.9.1



<b>1 Hierarchical Index</b>	<b>1</b>
1.1 Class Hierarchy	1
<b>2 Class Index</b>	<b>3</b>
2.1 Class List	3
<b>3 File Index</b>	<b>5</b>
3.1 File List	5
<b>4 Class Documentation</b>	<b>7</b>
4.1 AllyComponent Struct Reference	7
4.2 AllyMissileComponent Struct Reference	7
4.3 BackgroundComponent Struct Reference	7
4.4 BasicMonsterComponent Struct Reference	7
4.5 Button Class Reference	8
4.5.1 Constructor & Destructor Documentation	8
4.5.1.1 Button() [1/5]	8
4.5.1.2 Button() [2/5]	9
4.5.1.3 Button() [3/5]	9
4.5.1.4 Button() [4/5]	9
4.5.1.5 Button() [5/5]	9
4.5.1.6 ~Button()	9
4.5.2 Member Function Documentation	9
4.5.2.1 getPosition()	9
4.5.2.2 getSize()	10
4.5.2.3 getText()	10
4.5.2.4 isHovered()	10
4.5.2.5 render()	10
4.5.2.6 setFont()	10
4.5.2.7 setFontSize()	10
4.5.2.8 setOnClick()	10
4.5.2.9 setOnHover()	11
4.5.2.10 setPosition()	11
4.5.2.11 setSize()	11
4.5.2.12 setText()	11
4.5.2.13 setTexture()	11
4.5.3 Member Data Documentation	11
4.5.3.1 bgImage	11
4.5.3.2 font	12
4.5.3.3 fontSize	12
4.5.3.4 onClick	12
4.5.3.5 onHover	12
4.5.3.6 rect	12

4.5.3.7 text	12
4.6 Client Class Reference	12
4.6.1 Constructor & Destructor Documentation	13
4.6.1.1 Client()	13
4.6.1.2 ~Client()	13
4.6.2 Member Data Documentation	13
4.6.2.1 _buffer	13
4.6.2.2 _hostName	13
4.6.2.3 _port	14
4.6.2.4 _queue	14
4.6.2.5 _sockedFd	14
4.7 ComponentManager Class Reference	14
4.7.1 Member Function Documentation	14
4.7.1.1 addComponent()	14
4.7.1.2 getComponent()	15
4.7.2 Member Data Documentation	15
4.7.2.1 components	15
4.8 componentNotFound Class Reference	15
4.8.1 Member Function Documentation	15
4.8.1.1 what()	15
4.9 EnemyComponent Struct Reference	16
4.10 EnemyMissileComponent Struct Reference	16
4.11 Entity Class Reference	16
4.11.1 Constructor & Destructor Documentation	16
4.11.1.1 Entity()	16
4.11.2 Member Function Documentation	17
4.11.2.1 getId()	17
4.11.3 Member Data Documentation	17
4.11.3.1 _id	17
4.12 EntityFactory Class Reference	17
4.12.1 Member Function Documentation	18
4.12.1.1 createAlly()	18
4.12.1.2 createAllyMissile()	18
4.12.1.3 createBackground()	18
4.12.1.4 createBasicEnemy()	18
4.12.1.5 createBasicMonster()	19
4.12.1.6 createButton()	19
4.12.1.7 createEnemyMissile()	19
4.12.1.8 createPlayer()	19
4.12.1.9 createPlayerMissile()	19
4.13 EntityManager Class Reference	20
4.13.1 Member Function Documentation	20

4.13.1.1 createEntity()	20
4.13.1.2 getAllEntities()	20
4.13.1.3 getEntity()	20
4.13.1.4 removeEntity()	20
4.13.2 Member Data Documentation	21
4.13.2.1 entities	21
4.13.2.2 entityNb	21
4.14 entityNotFound Class Reference	21
4.14.1 Member Function Documentation	21
4.14.1.1 what()	21
4.15 failedToLoadTexture Class Reference	22
4.15.1 Member Function Documentation	22
4.15.1.1 what()	22
4.16 HealthComponent Struct Reference	22
4.16.1 Member Data Documentation	22
4.16.1.1 health	23
4.16.1.2 max_health	23
4.17 HitboxComponent Struct Reference	23
4.17.1 Member Data Documentation	23
4.17.1.1 h	23
4.17.1.2 w	23
4.17.1.3 x	24
4.17.1.4 y	24
4.18 IEntity Class Reference	24
4.18.1 Constructor & Destructor Documentation	24
4.18.1.1 ~IEntity()	24
4.18.2 Member Function Documentation	24
4.18.2.1 getId()	25
4.19 IEntityFactory Class Reference	25
4.19.1 Constructor & Destructor Documentation	25
4.19.1.1 ~IEntityFactory()	25
4.19.2 Member Function Documentation	26
4.19.2.1 createAlly()	26
4.19.2.2 createAllyMissile()	26
4.19.2.3 createBackground()	26
4.19.2.4 createBasicEnemy()	26
4.19.2.5 createBasicMonster()	27
4.19.2.6 createEnemyMissile()	27
4.19.2.7 createPlayer()	27
4.19.2.8 createPlayerMissile()	27
4.20 InputComponent Struct Reference	27
4.20.1 Member Data Documentation	28

4.20.1.1 input . . . . .	28
4.21 ISystem Class Reference . . . . .	28
4.21.1 Constructor & Destructor Documentation . . . . .	28
4.21.1.1 ISystem() . . . . .	28
4.22 OffsetComponent Struct Reference . . . . .	29
4.22.1 Member Data Documentation . . . . .	29
4.22.1.1 offset . . . . .	29
4.23 OnClickComponent Struct Reference . . . . .	29
4.23.1 Constructor & Destructor Documentation . . . . .	29
4.23.1.1 OnClickComponent() . . . . .	29
4.23.2 Member Data Documentation . . . . .	30
4.23.2.1 isClicked . . . . .	30
4.23.2.2 onClick . . . . .	30
4.24 OnHoverComponent Struct Reference . . . . .	30
4.24.1 Constructor & Destructor Documentation . . . . .	30
4.24.1.1 OnHoverComponent() . . . . .	30
4.24.2 Member Data Documentation . . . . .	30
4.24.2.1 isHovered . . . . .	31
4.24.2.2 onHover . . . . .	31
4.25 PlayerComponent Struct Reference . . . . .	31
4.26 PlayerMissileComponent Struct Reference . . . . .	31
4.27 PositionComponent Struct Reference . . . . .	31
4.27.1 Constructor & Destructor Documentation . . . . .	32
4.27.1.1 PositionComponent() . . . . .	32
4.27.2 Member Data Documentation . . . . .	32
4.27.2.1 x . . . . .	32
4.27.2.2 y . . . . .	32
4.28 RenderSystem Class Reference . . . . .	32
4.28.1 Constructor & Destructor Documentation . . . . .	33
4.28.1.1 RenderSystem() . . . . .	33
4.28.2 Member Function Documentation . . . . .	33
4.28.2.1 render() . . . . .	33
4.28.3 Member Data Documentation . . . . .	33
4.28.3.1 _window . . . . .	33
4.29 Rtype Class Reference . . . . .	33
4.29.1 Constructor & Destructor Documentation . . . . .	34
4.29.1.1 Rtype() . . . . .	34
4.29.2 Member Function Documentation . . . . .	34
4.29.2.1 gameLoop() . . . . .	34
4.29.2.2 handleEvents() . . . . .	35
4.29.2.3 mainMenu() . . . . .	35
4.29.2.4 processServerMessages() . . . . .	35

4.29.2.5 renderGame()	35
4.29.2.6 run()	35
4.29.2.7 updateGame()	35
4.29.3 Member Data Documentation	35
4.29.3.1 _scenes	35
4.29.3.2 _window	36
4.30 Scenes Class Reference	36
4.30.1 Member Enumeration Documentation	37
4.30.1.1 DaltonismMode	37
4.30.1.2 GameMode	37
4.30.1.3 Scene	37
4.30.2 Constructor & Destructor Documentation	38
4.30.2.1 Scenes()	38
4.30.2.2 ~Scenes()	38
4.30.3 Member Function Documentation	38
4.30.3.1 gameLoop()	38
4.30.3.2 inGameMenu()	38
4.30.3.3 mainMenu()	38
4.30.3.4 render()	38
4.30.3.5 setDaltonism()	38
4.30.3.6 setGameMode()	39
4.30.3.7 setScene()	39
4.30.3.8 settingsMenu()	39
4.30.3.9 shouldQuit()	39
4.30.4 Member Data Documentation	39
4.30.4.1 _window	40
4.30.4.2 currentDaltonismMode	40
4.30.4.3 currentGameMode	40
4.30.4.4 currentScene	40
4.31 ScoreComponent Struct Reference	40
4.31.1 Member Data Documentation	40
4.31.1.1 score	40
4.32 ShootSystem Class Reference	41
4.32.1 Constructor & Destructor Documentation	41
4.32.1.1 ShootSystem()	41
4.32.2 Member Function Documentation	41
4.32.2.1 fireMissle()	41
4.32.3 Member Data Documentation	41
4.32.3.1 _fireRate	42
4.32.3.2 _lastShotTime	42
4.32.3.3 _playerId	42
4.33 SpriteComponent Struct Reference	42

4.33.1 Constructor & Destructor Documentation	42
4.33.1.1 SpriteComponent()	42
4.33.2 Member Data Documentation	43
4.33.2.1 sprite	43
4.34 TextComponent Struct Reference	43
4.34.1 Constructor & Destructor Documentation	43
4.34.1.1 TextComponent()	43
4.34.2 Member Data Documentation	43
4.34.2.1 _text	43
4.35 TextureManager Class Reference	44
4.35.1 Member Function Documentation	44
4.35.1.1 getTexture()	44
4.35.2 Member Data Documentation	44
4.35.2.1 textures	44
4.36 UpdateSystem Class Reference	44
4.36.1 Constructor & Destructor Documentation	45
4.36.1.1 UpdateSystem()	45
4.36.2 Member Function Documentation	45
4.36.2.1 update()	45
4.36.2.2 updateBackground()	45
4.36.2.3 updatePlayerMissile()	46
4.36.3 Member Data Documentation	46
4.36.3.1 _window	46
4.37 VelocityComponent Struct Reference	46
4.37.1 Member Data Documentation	46
4.37.1.1 speed	46
4.38 WeaponComponent Struct Reference	46
4.38.1 Member Data Documentation	47
4.38.1.1 bullet_lifetime	47
4.38.1.2 bullet_speed	47
4.38.1.3 damage	47
4.38.1.4 fire_rate	47
<b>5 File Documentation</b>	<b>49</b>
5.1 /home/runner/work/R-Type/R-Type/Client/Interface/Include/button.hpp File Reference	49
5.2 /home/runner/work/R-Type/R-Type/Client/Interface/Include/client.hpp File Reference	49
5.3 /home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/ally_component.hpp File Reference	49
5.4 /home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/ally_missile_component.hpp File Reference	50
5.5 /home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/background_component.hpp File Reference	50



5.6	/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/basic_monster_component.hpp File Reference . . . . .	50
5.7	/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/component_manager.hpp File Reference . . . . .	50
5.8	/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/components.hpp File Refer- ence . . . . .	51
5.9	/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/enemy_component.hpp File Reference . . . . .	51
5.10	/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/enemy_missile_component.hpp File Reference . . . . .	51
5.11	/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/health_component.hpp File Reference . . . . .	51
5.12	/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/hitbox_component.hpp File Reference . . . . .	52
5.13	/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/input_component.hpp File Reference . . . . .	52
	5.13.1 Enumeration Type Documentation . . . . .	52
	5.13.1.1 InputType . . . . .	52
5.14	/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/offset_component.hpp File Reference . . . . .	52
5.15	/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/on_click_component.hpp File Reference . . . . .	53
5.16	/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/on_hover_component.hpp File Reference . . . . .	53
5.17	/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/player_component.hpp File Reference . . . . .	53
5.18	/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/player_missile_component.hpp File Reference . . . . .	53
5.19	/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/position_component.hpp File Reference . . . . .	53
5.20	/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/score_component.hpp File Reference . . . . .	54
5.21	/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/sprite_component.hpp File Reference . . . . .	54
5.22	/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/text_component.hpp File Reference . . . . .	54
5.23	/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/velocity_component.hpp File Reference . . . . .	54
5.24	/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/weapon_component.hpp File Reference . . . . .	54
5.25	/home/runner/work/R-Type/R-Type/Client/Interface/Include/Entities/entity.hpp File Reference . . . .	55
5.26	/home/runner/work/R-Type/R-Type/Client/Interface/Include/Entities/entity_factory.hpp File Reference	55
5.27	/home/runner/work/R-Type/R-Type/Client/Interface/Include/Entities/entity_manager.hpp File Reference	55
5.28	/home/runner/work/R-Type/R-Type/Client/Interface/Include/Entities/i_entity.hpp File Reference . . .	55
5.29	/home/runner/work/R-Type/R-Type/Client/Interface/Include/Entities/i_entity_factory.hpp File Reference	56
5.30	/home/runner/work/R-Type/R-Type/Client/Interface/Include/error_handling.hpp File Reference . . .	56
5.31	/home/runner/work/R-Type/R-Type/Client/Interface/Include/mainmenu.hpp File Reference . . . . .	56

5.31.1 Function Documentation . . . . .	56
5.31.1.1 MainMenu() . . . . .	56
5.32 /home/runner/work/R-Type/R-Type/Client/Interface/Include/r_type_client.hpp File Reference . . . . .	57
5.33 /home/runner/work/R-Type/R-Type/Client/Interface/Include/scenes.hpp File Reference . . . . .	57
5.34 /home/runner/work/R-Type/R-Type/Client/Interface/Include/Systems/button_system.hpp File Reference . . . . .	57
5.35 /home/runner/work/R-Type/R-Type/Client/Interface/Include/Systems/i_system.hpp File Reference . . . . .	57
5.36 /home/runner/work/R-Type/R-Type/Client/Interface/Include/Systems/render_system.hpp File Reference . . . . .	57
5.37 /home/runner/work/R-Type/R-Type/Client/Interface/Include/Systems/shoot_system.hpp File Reference . . . . .	58
5.38 /home/runner/work/R-Type/R-Type/Client/Interface/Include/Systems/systems.hpp File Reference . . . . .	58
5.39 /home/runner/work/R-Type/R-Type/Client/Interface/Include/Systems/update_system.hpp File Reference . . . . .	58
5.40 /home/runner/work/R-Type/R-Type/Client/Interface/Include/texture_manager.hpp File Reference . . . . .	58
5.41 /home/runner/work/R-Type/R-Type/Client/Src/client.cpp File Reference . . . . .	59
5.42 /home/runner/work/R-Type/R-Type/Client/Src/Components/temp.cpp File Reference . . . . .	59
5.43 /home/runner/work/R-Type/R-Type/Client/Src/Entities/entity_factory.cpp File Reference . . . . .	59
5.44 /home/runner/work/R-Type/R-Type/Client/Src/main.cpp File Reference . . . . .	59
5.44.1 Function Documentation . . . . .	59
5.44.1.1 main() . . . . .	59
5.44.1.2 simpleClient() . . . . .	60
5.45 /home/runner/work/R-Type/R-Type/Server/Src/main.cpp File Reference . . . . .	60
5.45.1 Function Documentation . . . . .	60
5.45.1.1 main() . . . . .	60
5.46 /home/runner/work/R-Type/R-Type/Client/Src/r_type_client.cpp File Reference . . . . .	60
5.47 /home/runner/work/R-Type/R-Type/Client/Src/scenes.cpp File Reference . . . . .	60
5.48 /home/runner/work/R-Type/R-Type/Client/Src/simpleClient.cpp File Reference . . . . .	61
5.48.1 Function Documentation . . . . .	61
5.48.1.1 simpleClient() . . . . .	61
5.49 /home/runner/work/R-Type/R-Type/Client/Src/Systems/render_system.cpp File Reference . . . . .	61
5.50 /home/runner/work/R-Type/R-Type/Client/Src/Systems/shoot_system.cpp File Reference . . . . .	61
5.51 /home/runner/work/R-Type/R-Type/Client/Src/Systems/update_system.cpp File Reference . . . . .	61
5.52 /home/runner/work/R-Type/R-Type/Server/Src/server.cpp File Reference . . . . .	61
<b>Index</b>	<b>63</b>

# Chapter 1

## Hierarchical Index

### 1.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

AllyComponent . . . . .	7
AllyMissileComponent . . . . .	7
BackgroundComponent . . . . .	7
BasicMonsterComponent . . . . .	7
Button . . . . .	8
Client . . . . .	12
ComponentManager . . . . .	14
EnemyComponent . . . . .	16
EnemyMissileComponent . . . . .	16
EntityManager . . . . .	20
std::exception	
componentNotFound . . . . .	15
entityNotFound . . . . .	21
failedToLoadTexture . . . . .	22
HealthComponent . . . . .	22
HitboxComponent . . . . .	23
IEntity . . . . .	24
Entity . . . . .	16
IEntityFactory . . . . .	25
EntityFactory . . . . .	17
InputComponent . . . . .	27
ISystem . . . . .	28
RenderSystem . . . . .	32
UpdateSystem . . . . .	44
OffsetComponent . . . . .	29
OnClickComponent . . . . .	29
OnHoverComponent . . . . .	30
PlayerComponent . . . . .	31
PlayerMissileComponent . . . . .	31
PositionComponent . . . . .	31
Rtype . . . . .	33
Scenes . . . . .	36
ScoreComponent . . . . .	40
ShootSystem . . . . .	41

SpriteComponent . . . . .	42
TextComponent . . . . .	43
TextureManager . . . . .	44
VelocityComponent . . . . .	46
WeaponComponent . . . . .	46

## Chapter 2

# Class Index

### 2.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

AllyComponent	7
AllyMissileComponent	7
BackgroundComponent	7
BasicMonsterComponent	7
Button	8
Client	12
ComponentManager	14
componentNotFound	15
EnemyComponent	16
EnemyMissileComponent	16
Entity	16
EntityFactory	17
EntityManager	20
entityNotFound	21
failedToLoadTexture	22
HealthComponent	22
HitboxComponent	23
IEntity	24
IEntityFactory	25
InputComponent	27
ISystem	28
OffsetComponent	29
OnClickComponent	29
OnHoverComponent	30
PlayerComponent	31
PlayerMissileComponent	31
PositionComponent	31
RenderSystem	32
Rtype	33
Scenes	36
ScoreComponent	40
ShootSystem	41
SpriteComponent	42
TextComponent	43
TextureManager	44
UpdateSystem	44
VelocityComponent	46
WeaponComponent	46



## Chapter 3

# File Index

### 3.1 File List

Here is a list of all files with brief descriptions:

/home/runner/work/R-Type/R-Type/Client/Interface/Include/button.hpp	49
/home/runner/work/R-Type/R-Type/Client/Interface/Include/client.hpp	49
/home/runner/work/R-Type/R-Type/Client/Interface/Include/error_handling.hpp	56
/home/runner/work/R-Type/R-Type/Client/Interface/Include/mainmenu.hpp	56
/home/runner/work/R-Type/R-Type/Client/Interface/Include/r_type_client.hpp	57
/home/runner/work/R-Type/R-Type/Client/Interface/Include/scenes.hpp	57
/home/runner/work/R-Type/R-Type/Client/Interface/Include/texture_manager.hpp	58
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/ally_component.hpp	49
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/ally_missile_component.hpp	50
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/background_component.hpp	50
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/basic_monster_component.hpp	50
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/component_manager.hpp	50
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/components.hpp	51
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/enemy_component.hpp	51
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/enemy_missile_component.hpp	51
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/health_component.hpp	51
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/hitbox_component.hpp	52
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/input_component.hpp	52
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/offset_component.hpp	52
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/on_click_component.hpp	53
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/on_hover_component.hpp	53
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/player_component.hpp	53
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/player_missile_component.hpp	53
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/position_component.hpp	53
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/score_component.hpp	54
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/sprite_component.hpp	54
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/text_component.hpp	54
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/velocity_component.hpp	54
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/weapon_component.hpp	54
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Entities/entity.hpp	55
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Entities/entity_factory.hpp	55
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Entities/entity_manager.hpp	55
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Entities/i_entity.hpp	55
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Entities/i_entity_factory.hpp	56
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Systems/button_system.hpp	57

/home/runner/work/R-Type/R-Type/Client/Interface/Include/Systems/i_system.hpp . . . . .	57
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Systems/render_system.hpp . . . . .	57
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Systems/shoot_system.hpp . . . . .	58
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Systems/systems.hpp . . . . .	58
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Systems/update_system.hpp . . . . .	58
/home/runner/work/R-Type/R-Type/Client/Src/client.cpp . . . . .	59
/home/runner/work/R-Type/R-Type/Client/Src/main.cpp . . . . .	59
/home/runner/work/R-Type/R-Type/Client/Src/r-type_client.cpp . . . . .	60
/home/runner/work/R-Type/R-Type/Client/Src/scenes.cpp . . . . .	60
/home/runner/work/R-Type/R-Type/Client/Src/simpleClient.cpp . . . . .	61
/home/runner/work/R-Type/R-Type/Client/Src/Components/temp.cpp . . . . .	59
/home/runner/work/R-Type/R-Type/Client/Src/Entities/entity_factory.cpp . . . . .	59
/home/runner/work/R-Type/R-Type/Client/Src/Systems/render_system.cpp . . . . .	61
/home/runner/work/R-Type/R-Type/Client/Src/Systems/shoot_system.cpp . . . . .	61
/home/runner/work/R-Type/R-Type/Client/Src/Systems/update_system.cpp . . . . .	61
/home/runner/work/R-Type/R-Type/Server/Src/main.cpp . . . . .	60
/home/runner/work/R-Type/R-Type/Server/Src/server.cpp . . . . .	61



## Chapter 4

# Class Documentation

### 4.1 AllyComponent Struct Reference

```
#include <ally_component.hpp>
```

The documentation for this struct was generated from the following file:

- [/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/ally\\_component.hpp](/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/ally_component.hpp)

### 4.2 AllyMissileComponent Struct Reference

```
#include <ally_missile_component.hpp>
```

The documentation for this struct was generated from the following file:

- [/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/ally\\_missile\\_component.hpp](/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/ally_missile_component.hpp)

### 4.3 BackgroundComponent Struct Reference

```
#include <background_component.hpp>
```

The documentation for this struct was generated from the following file:

- [/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/background\\_component.hpp](/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/background_component.hpp)

### 4.4 BasicMonsterComponent Struct Reference

```
#include <basic_monster_component.hpp>
```

The documentation for this struct was generated from the following file:

- [/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/basic\\_monster\\_component.hpp](/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/basic_monster_component.hpp)

## 4.5 Button Class Reference

```
#include <button.hpp>
```

### Public Member Functions

- [Button](#) ()=default
- [Button](#) (std::string path)
- [Button](#) (sf::Color color, std::pair< int, int > position, std::pair< float, float > size)
- [Button](#) (std::string path, std::pair< int, int > position)
- [Button](#) (std::string path, std::pair< int, int > position, std::pair< float, float > size)
- [~Button](#) ()=default
- void [setFont](#) (std::string fontPath)
- void [setPosition](#) (std::pair< int, int >)
- std::pair< int, int > [getPosition](#) ()
- void [setSize](#) (std::pair< float, float >)
- std::pair< float, float > [getSize](#) ()
- void [setText](#) (std::string)
- std::string [getText](#) ()
- void [setTexture](#) (std::string texturePath)
- void [setFontSize](#) (std::size\_t [fontSize](#))
- void [setOnClick](#) (std::function< void([Scenes](#) \*)> callback)
- void [setOnHover](#) (std::function< void([Scenes](#) \*)> callback)
- bool [isHovered](#) (std::pair< int, int > mousePos)
- void [render](#) (sf::RenderWindow &window)

### Public Attributes

- std::function< void([Scenes](#) \*)> [onClick](#)
- std::function< void([Scenes](#) \*)> [onHover](#)

### Private Attributes

- sf::Texture \* [bgImage](#) = new sf::Texture()
- sf::RectangleShape [rect](#) = sf::RectangleShape()
- sf::Text [text](#) = sf::Text()
- sf::Font [font](#) = sf::Font()
- std::size\_t [fontSize](#) = 12

### 4.5.1 Constructor & Destructor Documentation

#### 4.5.1.1 Button() [1/5]

```
Button::Button ( ) [default]
```

#### 4.5.1.2 Button() [2/5]

```
Button::Button (
    std::string path )
```

#### 4.5.1.3 Button() [3/5]

```
Button::Button (
    sf::Color color,
    std::pair< int, int > position,
    std::pair< float, float > size )
```

#### 4.5.1.4 Button() [4/5]

```
Button::Button (
    std::string path,
    std::pair< int, int > position )
```

#### 4.5.1.5 Button() [5/5]

```
Button::Button (
    std::string path,
    std::pair< int, int > position,
    std::pair< float, float > size )
```

#### 4.5.1.6 ~Button()

```
Button::~Button ( ) [default]
```

### 4.5.2 Member Function Documentation

#### 4.5.2.1 getPosition()

```
std::pair<int, int> Button::getPosition ( )
```

#### 4.5.2.2 getSize()

```
std::pair<float, float> Button::getSize ( )
```

#### 4.5.2.3 getText()

```
std::string Button::getText ( )
```

#### 4.5.2.4 isHovered()

```
bool Button::isHovered (
    std::pair< int, int > mousePos )
```

#### 4.5.2.5 render()

```
void Button::render (
    sf::RenderWindow & window )
```

#### 4.5.2.6 setFont()

```
void Button::setFont (
    std::string fontPath )
```

#### 4.5.2.7 setFontSize()

```
void Button::setFontSize (
    std::size_t fontSize )
```

#### 4.5.2.8 setOnClick()

```
void Button::setOnClick (
    std::function< void(Scenes *)> callback )
```

#### 4.5.2.9 setOnHover()

```
void Button::setOnHover (
    std::function< void(Scenes *)> callback )
```

#### 4.5.2.10 setPosition()

```
void Button::setPosition (
    std::pair< int, int > )
```

#### 4.5.2.11 setSize()

```
void Button::setSize (
    std::pair< float, float > )
```

#### 4.5.2.12 setText()

```
void Button::setText (
    std::string )
```

#### 4.5.2.13 setTexture()

```
void Button::setTexture (
    std::string texturePath )
```

### 4.5.3 Member Data Documentation

#### 4.5.3.1 bgImage

```
sf::Texture* Button::bgImage = new sf::Texture() [private]
```

#### 4.5.3.2 font

```
sf::Font Button::font = sf::Font() [private]
```

#### 4.5.3.3 fontSize

```
std::size_t Button::fontSize = 12 [private]
```

#### 4.5.3.4 onClick

```
std::function<void(Scenes *)> Button::onClick
```

#### 4.5.3.5 onHover

```
std::function<void(Scenes *)> Button::onHover
```

#### 4.5.3.6 rect

```
sf::RectangleShape Button::rect = sf::RectangleShape() [private]
```

#### 4.5.3.7 text

```
sf::Text Button::text = sf::Text() [private]
```

The documentation for this class was generated from the following file:

- [/home/runner/work/R-Type/R-Type/Client/Interface/Include/button.hpp](#)

## 4.6 Client Class Reference

```
#include <client.hpp>
```

## Public Member Functions

- [Client](#) ()
- [~Client](#) ()

## Protected Attributes

- [int](#) [\\_port](#)
- [int](#) [\\_sockedFd](#)
- [std::string](#) [\\_hostName](#)
- [std::string](#) [\\_buffer](#)
- [std::queue< std::vector< std::string > >](#) [\\_queue](#)

## 4.6.1 Constructor & Destructor Documentation

### 4.6.1.1 Client()

```
Client::Client ( )
```

### 4.6.1.2 ~Client()

```
Client::~~Client ( )
```

## 4.6.2 Member Data Documentation

### 4.6.2.1 \_buffer

```
std::string Client::_buffer [protected]
```

### 4.6.2.2 \_hostName

```
std::string Client::_hostName [protected]
```

#### 4.6.2.3 `_port`

```
int Client::_port [protected]
```

#### 4.6.2.4 `_queue`

```
std::queue<std::vector<std::string> > Client::_queue [protected]
```

#### 4.6.2.5 `_sockedFd`

```
int Client::_sockedFd [protected]
```

The documentation for this class was generated from the following file:

- [/home/runner/work/R-Type/R-Type/Client/Interface/Include/client.hpp](#)

## 4.7 ComponentManager Class Reference

```
#include <component_manager.hpp>
```

### Public Member Functions

- `template<typename ComponentType , typename... Args>`  
`void addComponent (int entityId, Args &&...args)`
- `template<typename ComponentType >`  
`std::optional< ComponentType * > getComponent (int entityId)`

### Private Attributes

- `std::unordered_map< std::type_index, std::unordered_map< int, std::any > > components`

### 4.7.1 Member Function Documentation

#### 4.7.1.1 `addComponent()`

```
template<typename ComponentType , typename... Args>
void ComponentManager::addComponent (
    int entityId,
    Args &&... args ) [inline]
```



### 4.7.1.2 GetComponent()

```
template<typename ComponentType >
std::optional<ComponentType *> ComponentManager::GetComponent (
    int entityId ) [inline]
```

## 4.7.2 Member Data Documentation

### 4.7.2.1 components

```
std::unordered_map<std::type_index, std::unordered_map<int, std::any> > ComponentManager←
::components [private]
```

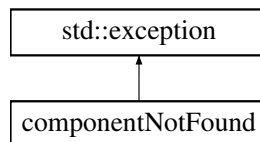
The documentation for this class was generated from the following file:

- /home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/[component\\_manager.hpp](#)

## 4.8 componentNotFound Class Reference

```
#include <error_handling.hpp>
```

Inheritance diagram for componentNotFound:



### Private Member Functions

- const char \* [what](#) () const noexcept override

## 4.8.1 Member Function Documentation

### 4.8.1.1 what()

```
const char* componentNotFound::what ( ) const [inline], [override], [private], [noexcept]
```

The documentation for this class was generated from the following file:

- /home/runner/work/R-Type/R-Type/Client/Interface/Include/[error\\_handling.hpp](#)

## 4.9 EnemyComponent Struct Reference

```
#include <enemy_component.hpp>
```

The documentation for this struct was generated from the following file:

- [/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/enemy\\_component.hpp](#)

## 4.10 EnemyMissileComponent Struct Reference

```
#include <enemy_missile_component.hpp>
```

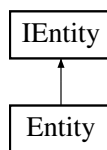
The documentation for this struct was generated from the following file:

- [/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/enemy\\_missile\\_component.hpp](#)

## 4.11 Entity Class Reference

```
#include <entity.hpp>
```

Inheritance diagram for Entity:



### Public Member Functions

- [Entity](#) (int id)
- int [getId](#) () const override

### Private Attributes

- int [\\_id](#)

### 4.11.1 Constructor & Destructor Documentation

#### 4.11.1.1 Entity()

```
Entity::Entity (  
    int id ) [inline], [explicit]
```

## 4.11.2 Member Function Documentation

### 4.11.2.1 getId()

```
int Entity::getId ( ) const [inline], [override], [virtual]
```

Implements [IEntity](#).

## 4.11.3 Member Data Documentation

### 4.11.3.1 \_id

```
int Entity::_id [private]
```

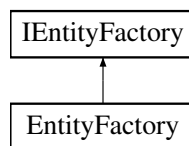
The documentation for this class was generated from the following file:

- [/home/runner/work/R-Type/R-Type/Client/Interface/Include/Entities/entity.hpp](#)

## 4.12 EntityFactory Class Reference

```
#include <entity_factory.hpp>
```

Inheritance diagram for EntityFactory:



## Public Member Functions

- [Entity](#) [createBackground](#) ([EntityManager](#) &entityManager, [ComponentManager](#) &componentManager, [TextureManager](#) &textureManager) override
- [Entity](#) [createPlayer](#) ([EntityManager](#) &entityManager, [ComponentManager](#) &componentManager, [TextureManager](#) &textureManager) override
- [Entity](#) [createAlly](#) ([EntityManager](#) &entityManager, [ComponentManager](#) &componentManager, [TextureManager](#) &textureManager) override
- [Entity](#) [createBasicEnemy](#) ([EntityManager](#) &entityManager, [ComponentManager](#) &componentManager, [TextureManager](#) &textureManager) override
- [Entity](#) [createBasicMonster](#) ([EntityManager](#) &entityManager, [ComponentManager](#) &componentManager, [TextureManager](#) &textureManager) override
- [Entity](#) [createPlayerMissile](#) (int playerId, [EntityManager](#) &entityManager, [ComponentManager](#) &componentManager, [TextureManager](#) &textureManager) override
- [Entity](#) [createButton](#) ([EntityManager](#) &entityManager, [ComponentManager](#) &componentManager, [TextureManager](#) &textureManager, std::string text, std::function< [Scenes](#) \*([Scenes](#) \*)> \*onClick)
- [Entity](#) [createAllyMissile](#) ([EntityManager](#) &entityManager, [ComponentManager](#) &componentManager, [TextureManager](#) &textureManager) override
- [Entity](#) [createEnemyMissile](#) ([EntityManager](#) &entityManager, [ComponentManager](#) &componentManager, [TextureManager](#) &textureManager) override

## 4.12.1 Member Function Documentation

### 4.12.1.1 createAlly()

```
Entity EntityFactory::createAlly (
    EntityManager & entityManager,
    ComponentManager & componentManager,
    TextureManager & textureManager ) [override], [virtual]
```

Implements [IEntityFactory](#).

### 4.12.1.2 createAllyMissile()

```
Entity EntityFactory::createAllyMissile (
    EntityManager & entityManager,
    ComponentManager & componentManager,
    TextureManager & textureManager ) [override], [virtual]
```

Implements [IEntityFactory](#).

### 4.12.1.3 createBackground()

```
Entity EntityFactory::createBackground (
    EntityManager & entityManager,
    ComponentManager & componentManager,
    TextureManager & textureManager ) [override], [virtual]
```

Implements [IEntityFactory](#).

### 4.12.1.4 createBasicEnemy()

```
Entity EntityFactory::createBasicEnemy (
    EntityManager & entityManager,
    ComponentManager & componentManager,
    TextureManager & textureManager ) [override], [virtual]
```

Implements [IEntityFactory](#).

#### 4.12.1.5 createBasicMonster()

```
Entity EntityFactory::createBasicMonster (
    EntityManager & entityManager,
    ComponentManager & componentManager,
    TextureManager & textureManager ) [override], [virtual]
```

Implements [IEntityFactory](#).

#### 4.12.1.6 createButton()

```
Entity EntityFactory::createButton (
    EntityManager & entityManager,
    ComponentManager & componentManager,
    TextureManager & textureManager,
    std::string text,
    std::function< Scenes *(Scenes *)> * onClick )
```

#### 4.12.1.7 createEnemyMissile()

```
Entity EntityFactory::createEnemyMissile (
    EntityManager & entityManager,
    ComponentManager & componentManager,
    TextureManager & textureManager ) [override], [virtual]
```

Implements [IEntityFactory](#).

#### 4.12.1.8 createPlayer()

```
Entity EntityFactory::createPlayer (
    EntityManager & entityManager,
    ComponentManager & componentManager,
    TextureManager & textureManager ) [override], [virtual]
```

Implements [IEntityFactory](#).

#### 4.12.1.9 createPlayerMissile()

```
Entity EntityFactory::createPlayerMissile (
    int playerId,
    EntityManager & entityManager,
    ComponentManager & componentManager,
    TextureManager & textureManager ) [override], [virtual]
```

Implements [IEntityFactory](#).

The documentation for this class was generated from the following files:

- [/home/runner/work/R-Type/R-Type/Client/Interface/Include/Entities/entity\\_factory.hpp](#)
- [/home/runner/work/R-Type/R-Type/Client/Src/Entities/entity\\_factory.cpp](#)

## 4.13 EntityManager Class Reference

```
#include <entity_manager.hpp>
```

### Public Member Functions

- [Entity](#) [createEntity](#) ()
- void [removeEntity](#) (int entityId)
- [Entity](#) & [getEntity](#) (int entityId)
- const std::vector< [Entity](#) > & [getAllEntities](#) () const

### Private Attributes

- int [entityNb](#) = 0
- std::vector< [Entity](#) > [entities](#)

### 4.13.1 Member Function Documentation

#### 4.13.1.1 createEntity()

```
Entity EntityManager::createEntity ( ) [inline]
```

#### 4.13.1.2 getAllEntities()

```
const std::vector<Entity>& EntityManager::getAllEntities ( ) const [inline]
```

#### 4.13.1.3 getEntity()

```
Entity& EntityManager::getEntity (
    int entityId ) [inline]
```

#### 4.13.1.4 removeEntity()

```
void EntityManager::removeEntity (
    int entityId ) [inline]
```

## 4.13.2 Member Data Documentation

### 4.13.2.1 entities

```
std::vector<Entity> EntityManager::entities [private]
```

### 4.13.2.2 entityNb

```
int EntityManager::entityNb = 0 [private]
```

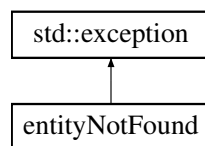
The documentation for this class was generated from the following file:

- /home/runner/work/R-Type/R-Type/Client/Interface/Include/Entities/[entity\\_manager.hpp](#)

## 4.14 entityNotFound Class Reference

```
#include <error_handling.hpp>
```

Inheritance diagram for entityNotFound:



### Private Member Functions

- const char \* [what](#) () const noexcept override

## 4.14.1 Member Function Documentation

### 4.14.1.1 what()

```
const char* entityNotFound::what ( ) const [inline], [override], [private], [noexcept]
```

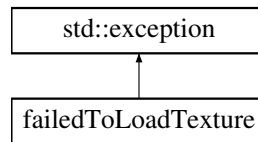
The documentation for this class was generated from the following file:

- /home/runner/work/R-Type/R-Type/Client/Interface/Include/[error\\_handling.hpp](#)

## 4.15 failedToLoadTexture Class Reference

```
#include <error_handling.hpp>
```

Inheritance diagram for failedToLoadTexture:



### Private Member Functions

- `const char * what () const noexcept override`

### 4.15.1 Member Function Documentation

#### 4.15.1.1 `what()`

```
const char* failedToLoadTexture::what ( ) const [inline], [override], [private], [noexcept]
```

The documentation for this class was generated from the following file:

- `/home/runner/work/R-Type/R-Type/Client/Interface/Include/error\_handling.hpp`

## 4.16 HealthComponent Struct Reference

```
#include <health_component.hpp>
```

### Public Attributes

- `int max\_health`
- `int health`

### 4.16.1 Member Data Documentation



#### 4.16.1.1 health

```
int HealthComponent::health
```

#### 4.16.1.2 max\_health

```
int HealthComponent::max_health
```

The documentation for this struct was generated from the following file:

- /home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/[health\\_component.hpp](#)

## 4.17 HitboxComponent Struct Reference

```
#include <hitbox_component.hpp>
```

### Public Attributes

- float [x](#)
- float [y](#)
- float [w](#)
- float [h](#)

### 4.17.1 Member Data Documentation

#### 4.17.1.1 h

```
float HitboxComponent::h
```

#### 4.17.1.2 w

```
float HitboxComponent::w
```

#### 4.17.1.3 x

```
float HitboxComponent::x
```

#### 4.17.1.4 y

```
float HitboxComponent::y
```

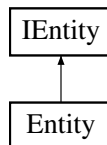
The documentation for this struct was generated from the following file:

- [/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/hitbox\\_component.hpp](/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/hitbox_component.hpp)

## 4.18 IEntity Class Reference

```
#include <i_entity.hpp>
```

Inheritance diagram for IEntity:



### Public Member Functions

- virtual [~IEntity](#) ()=default
- virtual int [getId](#) () const =0

### 4.18.1 Constructor & Destructor Documentation

#### 4.18.1.1 ~IEntity()

```
virtual IEntity::~IEntity ( ) [virtual], [default]
```

### 4.18.2 Member Function Documentation

## 4.18.2.1 getId()

```
virtual int IEntity::getId ( ) const [pure virtual]
```

Implemented in [Entity](#).

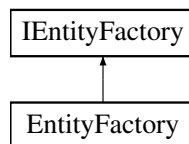
The documentation for this class was generated from the following file:

- [/home/runner/work/R-Type/R-Type/Client/Interface/Include/Entities/i\\_entity.hpp](#)

## 4.19 IEntityFactory Class Reference

```
#include <i_entity_factory.hpp>
```

Inheritance diagram for IEntityFactory:



## Public Member Functions

- virtual [~IEntityFactory](#) ()=default
- virtual [Entity](#) createBackground ([EntityManager](#) &entityManager, [ComponentManager](#) &componentManager, [TextureManager](#) &TextureManager)=0
- virtual [Entity](#) createPlayer ([EntityManager](#) &entityManager, [ComponentManager](#) &componentManager, [TextureManager](#) &TextureManager)=0
- virtual [Entity](#) createAlly ([EntityManager](#) &entityManager, [ComponentManager](#) &componentManager, [TextureManager](#) &TextureManager)=0
- virtual [Entity](#) createBasicEnemy ([EntityManager](#) &entityManager, [ComponentManager](#) &componentManager, [TextureManager](#) &TextureManager)=0
- virtual [Entity](#) createBasicMonster ([EntityManager](#) &entityManager, [ComponentManager](#) &componentManager, [TextureManager](#) &TextureManager)=0
- virtual [Entity](#) createPlayerMissile (int playerId, [EntityManager](#) &entityManager, [ComponentManager](#) &componentManager, [TextureManager](#) &TextureManager)=0
- virtual [Entity](#) createAllyMissile ([EntityManager](#) &entityManager, [ComponentManager](#) &componentManager, [TextureManager](#) &TextureManager)=0
- virtual [Entity](#) createEnemyMissile ([EntityManager](#) &entityManager, [ComponentManager](#) &componentManager, [TextureManager](#) &TextureManager)=0

## 4.19.1 Constructor &amp; Destructor Documentation

## 4.19.1.1 ~IEntityFactory()

```
virtual IEntityFactory::~~IEntityFactory ( ) [virtual], [default]
```

## 4.19.2 Member Function Documentation

### 4.19.2.1 createAlly()

```
virtual Entity IEntityFactory::createAlly (
    EntityManager & entityManager,
    ComponentManager & componentManager,
    TextureManager & TextureManager ) [pure virtual]
```

Implemented in [EntityFactory](#).

### 4.19.2.2 createAllyMissile()

```
virtual Entity IEntityFactory::createAllyMissile (
    EntityManager & entityManager,
    ComponentManager & componentManager,
    TextureManager & TextureManager ) [pure virtual]
```

Implemented in [EntityFactory](#).

### 4.19.2.3 createBackground()

```
virtual Entity IEntityFactory::createBackground (
    EntityManager & entityManager,
    ComponentManager & componentManager,
    TextureManager & TextureManager ) [pure virtual]
```

Implemented in [EntityFactory](#).

### 4.19.2.4 createBasicEnemy()

```
virtual Entity IEntityFactory::createBasicEnemy (
    EntityManager & entityManager,
    ComponentManager & componentManager,
    TextureManager & TextureManager ) [pure virtual]
```

Implemented in [EntityFactory](#).

#### 4.19.2.5 createBasicMonster()

```
virtual Entity IEntityFactory::createBasicMonster (
    EntityManager & entityManager,
    ComponentManager & componentManager,
    TextureManager & TextureManager ) [pure virtual]
```

Implemented in [EntityFactory](#).

#### 4.19.2.6 createEnemyMissile()

```
virtual Entity IEntityFactory::createEnemyMissile (
    EntityManager & entityManager,
    ComponentManager & componentManager,
    TextureManager & TextureManager ) [pure virtual]
```

Implemented in [EntityFactory](#).

#### 4.19.2.7 createPlayer()

```
virtual Entity IEntityFactory::createPlayer (
    EntityManager & entityManager,
    ComponentManager & componentManager,
    TextureManager & TextureManager ) [pure virtual]
```

Implemented in [EntityFactory](#).

#### 4.19.2.8 createPlayerMissile()

```
virtual Entity IEntityFactory::createPlayerMissile (
    int playerId,
    EntityManager & entityManager,
    ComponentManager & componentManager,
    TextureManager & TextureManager ) [pure virtual]
```

Implemented in [EntityFactory](#).

The documentation for this class was generated from the following file:

- [/home/runner/work/R-Type/R-Type/Client/Interface/Include/Entities/i\\_entity\\_factory.hpp](#)

## 4.20 InputComponent Struct Reference

```
#include <input_component.hpp>
```

## Public Attributes

- [InputType input](#)

### 4.20.1 Member Data Documentation

#### 4.20.1.1 input

[InputType](#) InputComponent::input

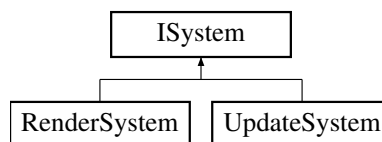
The documentation for this struct was generated from the following file:

- [/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/input\\_component.hpp](/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/input_component.hpp)

## 4.21 ISystem Class Reference

```
#include <i_system.hpp>
```

Inheritance diagram for ISystem:



## Public Member Functions

- [ISystem\(\)](#)=default

### 4.21.1 Constructor & Destructor Documentation

#### 4.21.1.1 ISystem()

```
ISystem::ISystem ( ) [default]
```

The documentation for this class was generated from the following file:

- [/home/runner/work/R-Type/R-Type/Client/Interface/Include/Systems/i\\_system.hpp](/home/runner/work/R-Type/R-Type/Client/Interface/Include/Systems/i_system.hpp)

## 4.22 OffsetComponent Struct Reference

```
#include <offset_component.hpp>
```

### Public Attributes

- float [offset](#)

### 4.22.1 Member Data Documentation

#### 4.22.1.1 offset

```
float OffsetComponent::offset
```

The documentation for this struct was generated from the following file:

- /home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/[offset\\_component.hpp](#)

## 4.23 OnClickComponent Struct Reference

```
#include <on_click_component.hpp>
```

### Public Member Functions

- [OnClickComponent](#) (std::function< [Scenes](#) \*([Scenes](#) \*)> &onClickfunction)

### Public Attributes

- bool [isClicked](#) = false
- std::function< [Scenes](#) \*([Scenes](#) \*)> & [onClick](#)

### 4.23.1 Constructor & Destructor Documentation

#### 4.23.1.1 OnClickComponent()

```
OnClickComponent::OnClickComponent (
    std::function< Scenes *(Scenes *)> & onClickfunction ) [inline]
```

## 4.23.2 Member Data Documentation

### 4.23.2.1 isClicked

```
bool OnClickComponent::isClicked = false
```

### 4.23.2.2 onClick

```
std::function<Scenes *(Scenes *)>& OnClickComponent::onClick
```

The documentation for this struct was generated from the following file:

- [/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/on\\_click\\_component.hpp](/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/on_click_component.hpp)

## 4.24 OnHoverComponent Struct Reference

```
#include <on_hover_component.hpp>
```

### Public Member Functions

- [OnHoverComponent](#) (std::function< void()> onHoverFunction)

### Public Attributes

- bool [isHovered](#) = false
- std::function< void()> [onHover](#)

## 4.24.1 Constructor & Destructor Documentation

### 4.24.1.1 OnHoverComponent()

```
OnHoverComponent::OnHoverComponent (
    std::function< void()> onHoverFunction ) [inline]
```

## 4.24.2 Member Data Documentation



#### 4.24.2.1 isHovered

```
bool OnHoverComponent::isHovered = false
```

#### 4.24.2.2 onHover

```
std::function<void()> OnHoverComponent::onHover
```

The documentation for this struct was generated from the following file:

- [/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/on\\_hover\\_component.hpp](#)

### 4.25 PlayerComponent Struct Reference

```
#include <player_component.hpp>
```

The documentation for this struct was generated from the following file:

- [/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/player\\_component.hpp](#)

### 4.26 PlayerMissileComponent Struct Reference

```
#include <player_missile_component.hpp>
```

The documentation for this struct was generated from the following file:

- [/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/player\\_missile\\_component.hpp](#)

### 4.27 PositionComponent Struct Reference

```
#include <position_component.hpp>
```

#### Public Member Functions

- [PositionComponent](#) (float [x](#), float [y](#))

#### Public Attributes

- float [x](#)
- float [y](#)

## 4.27.1 Constructor & Destructor Documentation

### 4.27.1.1 PositionComponent()

```
PositionComponent::PositionComponent (
    float x,
    float y ) [inline]
```

## 4.27.2 Member Data Documentation

### 4.27.2.1 x

```
float PositionComponent::x
```

### 4.27.2.2 y

```
float PositionComponent::y
```

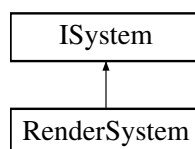
The documentation for this struct was generated from the following file:

- [/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/position\\_component.hpp](/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/position_component.hpp)

## 4.28 RenderSystem Class Reference

```
#include <render_system.hpp>
```

Inheritance diagram for RenderSystem:



## Public Member Functions

- [RenderSystem](#) (sf::RenderWindow &>window)
- void [render](#) ([EntityManager](#) &entityManager, [ComponentManager](#) &componentManager)

## Private Attributes

- `sf::RenderWindow & _window`

## 4.28.1 Constructor & Destructor Documentation

### 4.28.1.1 RenderSystem()

```
RenderSystem::RenderSystem (
    sf::RenderWindow & window ) [inline]
```

## 4.28.2 Member Function Documentation

### 4.28.2.1 render()

```
void RenderSystem::render (
    EntityManager & entityManager,
    ComponentManager & componentManager )
```

## 4.28.3 Member Data Documentation

### 4.28.3.1 \_window

```
sf::RenderWindow& RenderSystem::_window [private]
```

The documentation for this class was generated from the following files:

- `/home/runner/work/R-Type/R-Type/Client/Interface/Include/Systems/render_system.hpp`
- `/home/runner/work/R-Type/R-Type/Client/Src/Systems/render_system.cpp`

## 4.29 Rtype Class Reference

```
#include <r_type_client.hpp>
```

## Public Member Functions

- [Rtype](#) ()  
*Construct a new [Rtype](#) object This will init the player.*
- void [run](#) ()  
*If `_mainMenu` variable is true, call `mainMenu`.*
- void [mainMenu](#) ()  
*Open window.*
- void [gameLoop](#) ()  
*Open window.*
- void [handleEvents](#) ()  
*This is where I will handle the events for the window & player (key input, etc.).*
- void [processServerMessages](#) ()  
*This is where I will process the info from the server.*
- void [updateGame](#) ()  
*This is where I will update the time, position of sprites, etc.*
- void [renderGame](#) ()  
*This is where I will render the game.*

## Private Attributes

- [Scenes](#) \* [\\_scenes](#)  
*Set the Game Mode object.*
- sf::RenderWindow [\\_window](#)

## 4.29.1 Constructor & Destructor Documentation

### 4.29.1.1 Rtype()

```
Rtype::Rtype ( )
```

Construct a new [Rtype](#) object This will init the player.

Default easy mode and normal daltonism mode. Ex: `renderSystem.addEntity(player)`, `inputSystem.addEntity(player)`, `collisionSystem.addEntity(player)`, etc.

## 4.29.2 Member Function Documentation

### 4.29.2.1 gameLoop()

```
void Rtype::gameLoop ( )
```

Open window.

This is where I will call the `handleEvents`, `updateGame`, `processCommands`, and `render` functions.

#### 4.29.2.2 `handleEvents()`

```
void Rtype::handleEvents ( )
```

This is where I will handle the events for the window & player (key input, etc.).

When key is pressed, move player, and send new player info to server.

#### 4.29.2.3 `mainMenu()`

```
void Rtype::mainMenu ( )
```

Open window.

(`handleEvents`). Display the main menu with start, help, daltonic mode, and speed selection buttons. On start, set `_mainMenu` to false, close window, and return. When active, `daltonic_mode` will be set to true, and draw a color filter over the screen until deactivated. Can set keybindings as well, either default or customized

#### 4.29.2.4 `processServerMessages()`

```
void Rtype::processServerMessages ( )
```

This is where I will process the info from the server.

#### 4.29.2.5 `renderGame()`

```
void Rtype::renderGame ( )
```

This is where I will render the game.

Ex: `window.clear()`, `window.draw(background)`, `renderSystem.render(window)`, `window.display`, etc.

#### 4.29.2.6 `run()`

```
void Rtype::run ( )
```

If `_mainMenu` variable is true, call `mainMenu`.

While `_mainMenu` is false, call `gameLoop`.

#### 4.29.2.7 `updateGame()`

```
void Rtype::updateGame ( )
```

This is where I will update the time, position of sprites, etc.

Ex: `inputSystem.update(deltaTime.asSeconds())`, `renderSystem.update(deltaTime.asSeconds())`, etc.

### 4.29.3 Member Data Documentation

#### 4.29.3.1 `__scenes`

```
Scenes* Rtype::__scenes [private]
```

Set the Game Mode object.

## Parameters

<i>mode</i>	
-------------	--

4.29.3.2 `_window`

```
sf::RenderWindow Rtype::_window [private]
```

The documentation for this class was generated from the following files:

- [/home/runner/work/R-Type/R-Type/Client/Interface/Include/r\\_type\\_client.hpp](#)
- [/home/runner/work/R-Type/R-Type/Client/Src/r-type\\_client.cpp](#)

## 4.30 Scenes Class Reference

```
#include <scenes.hpp>
```

## Public Member Functions

- [Scenes](#) (sf::RenderWindow \*window)
- [~Scenes](#) ()=default
- void [mainMenu](#) ()  
*displays the main menu, creates all the necessary entities*
- void [gameLoop](#) ()  
*displays the main game loop, creates all the necessary entities*
- void [settingsMenu](#) ()  
*displays the settings menu, creates all the necessary entities*
- void [inGameMenu](#) ()  
*displays the in game menu, creates all the necessary entities*
- void [render](#) ()  
*display what must be displayed (main menu, game loop, settings menu, in game menu), creates all the components needed and manages them*
- void [setDaltonism](#) (DaltonismMode mode)  
*Set the Daltonism object.*
- void [setGameMode](#) (GameMode mode)  
*Set the Game Mode object.*
- void [setScene](#) (Scene scene)  
*Set the Scene object.*
- bool [shouldQuit](#) ()

## Private Types

- enum class [GameMode](#) { [EASY](#) , [MEDIUM](#) , [HARD](#) }
- enum class [DaltonismMode](#) { [NORMAL](#) , [TRITANOPIA](#) , [DEUTERANOPIA](#) , [PROTANOPIA](#) }
- enum class [Scene](#) {  
[MAIN\\_MENU](#) , [GAME\\_LOOP](#) , [SETTINGS\\_MENU](#) , [IN\\_GAME\\_MENU](#) ,  
[EXIT](#) }

## Private Attributes

- `GameMode currentGameMode = GameMode::MEDIUM`
- `DaltonismMode currentDaltonismMode = DaltonismMode::NORMAL`
- `Scene currentScene = Scene::MAIN_MENU`
- `sf::RenderWindow * _window`

## 4.30.1 Member Enumeration Documentation

### 4.30.1.1 DaltonismMode

```
enum Scenes::DaltonismMode [strong], [private]
```

Enumerator

NORMAL	
TRITANOPIA	
DEUTERANOPIA	
PROTANOPIA	

### 4.30.1.2 GameMode

```
enum Scenes::GameMode [strong], [private]
```

Enumerator

EASY	
MEDIUM	
HARD	

### 4.30.1.3 Scene

```
enum Scenes::Scene [strong], [private]
```

Enumerator

MAIN_MENU	
GAME_LOOP	
SETTINGS_MENU	
IN_GAME_MENU	
EXIT	

## 4.30.2 Constructor & Destructor Documentation

### 4.30.2.1 Scenes()

```
Scenes::Scenes (
    sf::RenderWindow * window )
```

### 4.30.2.2 ~Scenes()

```
Scenes::~~Scenes ( ) [default]
```

## 4.30.3 Member Function Documentation

### 4.30.3.1 gameLoop()

```
void Scenes::gameLoop ( )
```

displays the main game loop, creates all the necessary entities

### 4.30.3.2 inGameMenu()

```
void Scenes::inGameMenu ( )
```

displays the in game menu, creates all the necessary entities

### 4.30.3.3 mainMenu()

```
void Scenes::mainMenu ( )
```

displays the main menu, creates all the necessary entities

### 4.30.3.4 render()

```
void Scenes::render ( )
```

display what must be displayed (main menu, game loop, settings menu, in game menu), creates all the components needed and manages them

### 4.30.3.5 setDaltonism()

```
void Scenes::setDaltonism (
    DaltonismMode mode )
```

Set the Daltonism object.



## Parameters

<i>mode</i>	
-------------	--

**4.30.3.6 setGameMode()**

```
void Scenes::setGameMode (
    GameMode mode )
```

Set the Game Mode object.

## Parameters

<i>mode</i>	
-------------	--

**4.30.3.7 setScene()**

```
void Scenes::setScene (
    Scenes::Scene scene )
```

Set the Scene object.

## Parameters

<i>scene</i>	
--------------	--

**4.30.3.8 settingsMenu()**

```
void Scenes::settingsMenu ( )
```

displays the settings menu, creates all the necessary entities

**4.30.3.9 shouldQuit()**

```
bool Scenes::shouldQuit ( ) [inline]
```

**4.30.4 Member Data Documentation**

#### 4.30.4.1 `_window`

```
sf::RenderWindow* Scenes::_window [private]
```

#### 4.30.4.2 `currentDaltonismMode`

```
DaltonismMode Scenes::currentDaltonismMode = DaltonismMode::NORMAL [private]
```

#### 4.30.4.3 `currentGameMode`

```
GameMode Scenes::currentGameMode = GameMode::MEDIUM [private]
```

#### 4.30.4.4 `currentScene`

```
Scene Scenes::currentScene = Scene::MAIN_MENU [private]
```

The documentation for this class was generated from the following files:

- `/home/runner/work/R-Type/R-Type/Client/Interface/Include/scenes.hpp`
- `/home/runner/work/R-Type/R-Type/Client/Src/scenes.cpp`

## 4.31 ScoreComponent Struct Reference

```
#include <score_component.hpp>
```

### Public Attributes

- `int score`

#### 4.31.1 Member Data Documentation

##### 4.31.1.1 `score`

```
int ScoreComponent::score
```

The documentation for this struct was generated from the following file:

- `/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/score_component.hpp`

## 4.32 ShootSystem Class Reference

```
#include <shoot_system.hpp>
```

### Public Member Functions

- [ShootSystem](#) (int playerId, float fireRate)
- void [fireMissile](#) ([EntityFactory](#) entityFactory, [EntityManager](#) &entityManager, [ComponentManager](#) &componentManager, [TextureManager](#) &textureManager, float deltaTime)

### Private Attributes

- int [\\_playerId](#)
- float [\\_fireRate](#)
- float [\\_lastShotTime](#)

### 4.32.1 Constructor & Destructor Documentation

#### 4.32.1.1 ShootSystem()

```
ShootSystem::ShootSystem (  
    int playerId,  
    float fireRate ) [inline]
```

### 4.32.2 Member Function Documentation

#### 4.32.2.1 fireMissile()

```
void ShootSystem::fireMissile (  
    EntityFactory entityFactory,  
    EntityManager & entityManager,  
    ComponentManager & componentManager,  
    TextureManager & textureManager,  
    float deltaTime )
```

### 4.32.3 Member Data Documentation

#### 4.32.3.1 `_fireRate`

```
float ShootSystem::_fireRate [private]
```

#### 4.32.3.2 `_lastShotTime`

```
float ShootSystem::_lastShotTime [private]
```

#### 4.32.3.3 `_playerId`

```
int ShootSystem::_playerId [private]
```

The documentation for this class was generated from the following files:

- [/home/runner/work/R-Type/R-Type/Client/Interface/Include/Systems/shoot\\_system.hpp](#)
- [/home/runner/work/R-Type/R-Type/Client/Src/Systems/shoot\\_system.cpp](#)

## 4.33 SpriteComponent Struct Reference

```
#include <sprite_component.hpp>
```

### Public Member Functions

- [SpriteComponent](#) (sf::Texture &texture, const [PositionComponent](#) &position, const sf::Vector2f &scale)

### Public Attributes

- sf::Sprite [sprite](#)

### 4.33.1 Constructor & Destructor Documentation

#### 4.33.1.1 `SpriteComponent()`

```
SpriteComponent::SpriteComponent (
    sf::Texture & texture,
    const PositionComponent & position,
    const sf::Vector2f & scale ) [inline]
```

### 4.33.2 Member Data Documentation

#### 4.33.2.1 sprite

```
sf::Sprite SpriteComponent::sprite
```

The documentation for this struct was generated from the following file:

- [/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/sprite\\_component.hpp](/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/sprite_component.hpp)

## 4.34 TextComponent Struct Reference

```
#include <text_component.hpp>
```

### Public Member Functions

- [TextComponent](#) (std::string text)

### Public Attributes

- std::string [\\_text](#)

### 4.34.1 Constructor & Destructor Documentation

#### 4.34.1.1 TextComponent()

```
TextComponent::TextComponent (
    std::string text ) [inline]
```

### 4.34.2 Member Data Documentation

#### 4.34.2.1 \_text

```
std::string TextComponent::_text
```

The documentation for this struct was generated from the following file:

- [/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/text\\_component.hpp](/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/text_component.hpp)

## 4.35 TextureManager Class Reference

```
#include <texture_manager.hpp>
```

### Public Member Functions

- sf::Texture & [getTexture](#) (const std::string &filePath)

### Private Attributes

- std::unordered\_map< std::string, sf::Texture > [textures](#)

### 4.35.1 Member Function Documentation

#### 4.35.1.1 getTexture()

```
sf::Texture& TextureManager::getTexture (
    const std::string & filePath ) [inline]
```

### 4.35.2 Member Data Documentation

#### 4.35.2.1 textures

```
std::unordered_map<std::string, sf::Texture> TextureManager::textures [private]
```

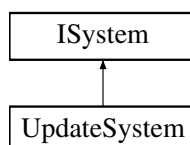
The documentation for this class was generated from the following file:

- /home/runner/work/R-Type/R-Type/Client/Interface/Include/[texture\\_manager.hpp](#)

## 4.36 UpdateSystem Class Reference

```
#include <update_system.hpp>
```

Inheritance diagram for UpdateSystem:



## Public Member Functions

- [UpdateSystem](#) (sf::RenderWindow &window)
- void [update](#) ([EntityManager](#) &entityManager, [ComponentManager](#) &componentManager, float deltaTime)
- void [updateBackground](#) (int entityId, [ComponentManager](#) &componentManager, float deltaTime)
- bool [updatePlayerMissile](#) (int entityId, [EntityManager](#) &entityManager, [ComponentManager](#) &componentManager, float deltaTime)

## Private Attributes

- sf::RenderWindow & [\\_window](#)

### 4.36.1 Constructor & Destructor Documentation

#### 4.36.1.1 UpdateSystem()

```
UpdateSystem::UpdateSystem (  
    sf::RenderWindow & window ) [inline]
```

### 4.36.2 Member Function Documentation

#### 4.36.2.1 update()

```
void UpdateSystem::update (  
    EntityManager & entityManager,  
    ComponentManager & componentManager,  
    float deltaTime )
```

#### 4.36.2.2 updateBackground()

```
void UpdateSystem::updateBackground (  
    int entityId,  
    ComponentManager & componentManager,  
    float deltaTime )
```

#### 4.36.2.3 updatePlayerMissile()

```
bool UpdateSystem::updatePlayerMissile (
    int entityId,
    EntityManager & entityManager,
    ComponentManager & componentManager,
    float deltaTime )
```

### 4.36.3 Member Data Documentation

#### 4.36.3.1 \_window

```
sf::RenderWindow& UpdateSystem::_window [private]
```

The documentation for this class was generated from the following files:

- [/home/runner/work/R-Type/R-Type/Client/Interface/Include/Systems/update\\_system.hpp](#)
- [/home/runner/work/R-Type/R-Type/Client/Src/Systems/update\\_system.cpp](#)

## 4.37 VelocityComponent Struct Reference

```
#include <velocity_component.hpp>
```

### Public Attributes

- float [speed](#)

#### 4.37.1 Member Data Documentation

##### 4.37.1.1 speed

```
float VelocityComponent::speed
```

The documentation for this struct was generated from the following file:

- [/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/velocity\\_component.hpp](#)

## 4.38 WeaponComponent Struct Reference

```
#include <weapon_component.hpp>
```



## Public Attributes

- float [damage](#)
- float [fire\\_rate](#)
- float [bullet\\_speed](#)
- float [bullet\\_lifetime](#)

### 4.38.1 Member Data Documentation

#### 4.38.1.1 [bullet\\_lifetime](#)

```
float WeaponComponent::bullet_lifetime
```

#### 4.38.1.2 [bullet\\_speed](#)

```
float WeaponComponent::bullet_speed
```

#### 4.38.1.3 [damage](#)

```
float WeaponComponent::damage
```

#### 4.38.1.4 [fire\\_rate](#)

```
float WeaponComponent::fire_rate
```

The documentation for this struct was generated from the following file:

- [/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/weapon\\_component.hpp](#)



## Chapter 5

# File Documentation

### 5.1 /home/runner/work/R-Type/R-Type/Client/Interface/↵ Include/button.hpp File Reference

```
#include "scenes.hpp"  
#include <SFML/Graphics.hpp>  
#include <functional>  
#include <iostream>
```

#### Classes

- class [Button](#)

### 5.2 /home/runner/work/R-Type/R-Type/Client/Interface/Include/client.hpp File Reference

```
#include <iostream>  
#include <queue>  
#include <string>  
#include <thread>  
#include <vector>
```

#### Classes

- class [Client](#)

### 5.3 /home/runner/work/R-Type/R-Type/Client/Interface/Include/↵ Components/ally\_component.hpp File Reference

#### Classes

- struct [AllyComponent](#)

## 5.4 /home/runner/work/R-Type/R-Type/Client/Interface/Include/↵ Components/ally\_missile\_component.hpp File Reference

### Classes

- struct [AllyMissileComponent](#)

## 5.5 /home/runner/work/R-Type/R-Type/Client/Interface/Include/↵ Components/background\_component.hpp File Reference

### Classes

- struct [BackgroundComponent](#)

## 5.6 /home/runner/work/R-Type/R-Type/Client/Interface/Include/↵ Components/basic\_monster\_component.hpp File Reference

### Classes

- struct [BasicMonsterComponent](#)

## 5.7 /home/runner/work/R-Type/R-Type/Client/Interface/Include/↵ Components/component\_manager.hpp File Reference

```
#include "components.hpp"
#include "texture_manager.hpp"
#include <any>
#include <iostream>
#include <memory>
#include <optional>
#include <typeindex>
#include <unordered_map>
```

### Classes

- class [ComponentManager](#)

## 5.8 /home/runner/work/R-Type/R-Type/Client/Interface/Include/↵ Components/components.hpp File Reference

```
#include "ally_component.hpp"
#include "ally_missile_component.hpp"
#include "background_component.hpp"
#include "basic_monster_component.hpp"
#include "enemy_component.hpp"
#include "enemy_missile_component.hpp"
#include "health_component.hpp"
#include "hitbox_component.hpp"
#include "input_component.hpp"
#include "offset_component.hpp"
#include "on_click_component.hpp"
#include "on_hover_component.hpp"
#include "player_component.hpp"
#include "player_missile_component.hpp"
#include "position_component.hpp"
#include "score_component.hpp"
#include "sprite_component.hpp"
#include "text_component.hpp"
#include "velocity_component.hpp"
#include "weapon_component.hpp"
```

## 5.9 /home/runner/work/R-Type/R-Type/Client/Interface/Include/↵ Components/enemy\_component.hpp File Reference

### Classes

- struct [EnemyComponent](#)

## 5.10 /home/runner/work/R-Type/R-Type/Client/Interface/Include/↵ Components/enemy\_missile\_component.hpp File Reference

### Classes

- struct [EnemyMissileComponent](#)

## 5.11 /home/runner/work/R-Type/R-Type/Client/Interface/Include/↵ Components/health\_component.hpp File Reference

### Classes

- struct [HealthComponent](#)

## 5.12 /home/runner/work/R-Type/R-Type/Client/Interface/Include/↵ Components/hitbox\_component.hpp File Reference

### Classes

- struct [HitboxComponent](#)

## 5.13 /home/runner/work/R-Type/R-Type/Client/Interface/Include/↵ Components/input\_component.hpp File Reference

### Classes

- struct [InputComponent](#)

### Enumerations

- enum class [InputType](#) {  
UP, DOWN, LEFT, RIGHT,  
SHOOT, QUIT, NONE }

### 5.13.1 Enumeration Type Documentation

#### 5.13.1.1 InputType

```
enum InputType [strong]
```

#### Enumerator

UP	
DOWN	
LEFT	
RIGHT	
SHOOT	
QUIT	
NONE	

## 5.14 /home/runner/work/R-Type/R-Type/Client/Interface/Include/↵ Components/offset\_component.hpp File Reference

### Classes

- struct [OffsetComponent](#)

## 5.15 /home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/on\_click\_component.hpp File Reference

```
#include <functional>
#include <scenes.hpp>
```

### Classes

- struct [OnClickComponent](#)

## 5.16 /home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/on\_hover\_component.hpp File Reference

```
#include <functional>
```

### Classes

- struct [OnHoverComponent](#)

## 5.17 /home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/player\_component.hpp File Reference

### Classes

- struct [PlayerComponent](#)

## 5.18 /home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/player\_missile\_component.hpp File Reference

### Classes

- struct [PlayerMissileComponent](#)

## 5.19 /home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/position\_component.hpp File Reference

### Classes

- struct [PositionComponent](#)

## 5.20 [/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/score\\_component.hpp](#) File Reference

### Classes

- struct [ScoreComponent](#)

## 5.21 [/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/sprite\\_component.hpp](#) File Reference

```
#include "../error_handling.hpp"
#include "position_component.hpp"
#include <SFML/Graphics.hpp>
#include <string>
```

### Classes

- struct [SpriteComponent](#)

## 5.22 [/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/text\\_component.hpp](#) File Reference

```
#include <iostream>
```

### Classes

- struct [TextComponent](#)

## 5.23 [/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/velocity\\_component.hpp](#) File Reference

### Classes

- struct [VelocityComponent](#)

## 5.24 [/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/weapon\\_component.hpp](#) File Reference

### Classes

- struct [WeaponComponent](#)



## 5.25 /home/runner/work/R-Type/R-Type/Client/Interface/Include/Entities/entity.hpp File Reference

```
#include "i_entity.hpp"
```

### Classes

- class [Entity](#)

## 5.26 /home/runner/work/R-Type/R-Type/Client/Interface/Include/Entities/entity\_factory.hpp File Reference

```
#include "i_entity_factory.hpp"  
#include "scenes.hpp"  
#include <functional>
```

### Classes

- class [EntityFactory](#)

## 5.27 /home/runner/work/R-Type/R-Type/Client/Interface/Include/Entities/entity\_manager.hpp File Reference

```
#include "../error_handling.hpp"  
#include "entity.hpp"  
#include <algorithm>  
#include <vector>
```

### Classes

- class [EntityManager](#)

## 5.28 /home/runner/work/R-Type/R-Type/Client/Interface/Include/Entities/i\_entity.hpp File Reference

### Classes

- class [IEntity](#)

## 5.29 /home/runner/work/R-Type/R-Type/Client/Interface/Include/Entities/i\_entity\_factory.hpp File Reference

```
#include "entity.hpp"
#include "entity_manager.hpp"
#include "texture_manager.hpp"
#include <Components/component_manager.hpp>
```

### Classes

- class [IEntityFactory](#)

## 5.30 /home/runner/work/R-Type/R-Type/Client/Interface/Include/error\_handling.hpp File Reference

```
#include <exception>
```

### Classes

- class [componentNotFound](#)
- class [entityNotFound](#)
- class [failedToLoadTexture](#)

## 5.31 /home/runner/work/R-Type/R-Type/Client/Interface/Include/mainmenu.hpp File Reference

```
#include <SFML/Graphics.hpp>
#include <r_type_client.hpp>
```

### Functions

- int [MainMenu](#) (sf::RenderWindow \*window, [Rtype](#) \*rtype)

### 5.31.1 Function Documentation

#### 5.31.1.1 MainMenu()

```
int MainMenu (
    sf::RenderWindow * window,
    Rtype * rtype )
```

## 5.32 /home/runner/work/R-Type/R-Type/Client/Interface/Include/r\_type\_client.hpp File Reference

```
#include "error_handling.hpp"
#include "scenes.hpp"
#include <SFML/Graphics.hpp>
#include <SFML/Window.hpp>
```

### Classes

- class [Rtype](#)

## 5.33 /home/runner/work/R-Type/R-Type/Client/Interface/Include/scenes.hpp File Reference

```
#include <SFML/Graphics.hpp>
```

### Classes

- class [Scenes](#)

## 5.34 /home/runner/work/R-Type/R-Type/Client/Interface/Include/Systems/button\_system.hpp File Reference

## 5.35 /home/runner/work/R-Type/R-Type/Client/Interface/Include/Systems/i\_system.hpp File Reference

```
#include "Components/component_manager.hpp"
#include "Components/components.hpp"
#include "Entities/entity_manager.hpp"
```

### Classes

- class [ISystem](#)

## 5.36 /home/runner/work/R-Type/R-Type/Client/Interface/Include/Systems/render\_system.hpp File Reference

```
#include "Systems/i_system.hpp"
#include <SFML/Graphics.hpp>
```

## Classes

- class [RenderSystem](#)

### 5.37 /home/runner/work/R-Type/R-Type/Client/Interface/Include/↵ Systems/shoot\_system.hpp File Reference

```
#include "Entities/entity_factory.hpp"  
#include "Systems/i_system.hpp"
```

## Classes

- class [ShootSystem](#)

### 5.38 /home/runner/work/R-Type/R-Type/Client/Interface/Include/↵ Systems/systems.hpp File Reference

```
#include "render_system.hpp"  
#include "shoot_system.hpp"  
#include "update_system.hpp"
```

### 5.39 /home/runner/work/R-Type/R-Type/Client/Interface/Include/↵ Systems/update\_system.hpp File Reference

```
#include "Components/component_manager.hpp"  
#include "Components/components.hpp"  
#include "Entities/entity_manager.hpp"  
#include "Systems/i_system.hpp"
```

## Classes

- class [UpdateSystem](#)

### 5.40 /home/runner/work/R-Type/R-Type/Client/Interface/Include/texture↵ \_manager.hpp File Reference

```
#include "error_handling.hpp"  
#include <SFML/Graphics.hpp>  
#include <string>  
#include <unordered_map>
```

## Classes

- class [TextureManager](#)

### 5.41 /home/runner/work/R-Type/R-Type/Client/Src/client.cpp File Reference

```
#include "client.hpp"
```

### 5.42 /home/runner/work/R-Type/R-Type/Client/Src/↵ Components/temp.cpp File Reference

### 5.43 /home/runner/work/R-Type/R-Type/Client/Src/Entities/entity\_↵ factory.cpp File Reference

```
#include "Entities/entity_factory.hpp"  
#include "Components/components.hpp"  
#include <SFML/Graphics.hpp>  
#include <cstdlib>
```

### 5.44 /home/runner/work/R-Type/R-Type/Client/Src/main.cpp File Reference

```
#include <r_type_client.hpp>
```

## Functions

- void [simpleClient](#) ()
- int [main](#) ()

#### 5.44.1 Function Documentation

##### 5.44.1.1 main()

```
int main ( )
```

#### 5.44.1.2 simpleClient()

```
void simpleClient ( )
```

### 5.45 /home/runner/work/R-Type/R-Type/Server/Src/main.cpp File Reference

```
#include <Net/server.hpp>
#include <iostream>
```

#### Functions

- int [main](#) ()

#### 5.45.1 Function Documentation

##### 5.45.1.1 main()

```
int main ( )
```

### 5.46 /home/runner/work/R-Type/R-Type/Client/Src/r-type\_client.cpp File Reference

```
#include <Components/component_manager.hpp>
#include <Entities/entity_factory.hpp>
#include <Entities/entity_manager.hpp>
#include <Systems/systems.hpp>
#include <iostream>
#include <r_type_client.hpp>
#include <texture_manager.hpp>
```

### 5.47 /home/runner/work/R-Type/R-Type/Client/Src/scenes.cpp File Reference

```
#include <Components/component_manager.hpp>
#include <Entities/entity_factory.hpp>
#include <Entities/entity_manager.hpp>
#include <Systems/systems.hpp>
#include <functional>
#include <iostream>
#include <r_type_client.hpp>
#include <scenes.hpp>
#include <texture_manager.hpp>
```

## 5.48 /home/runner/work/R-Type/R-Type/Client/Src/simpleClient.cpp File Reference

```
#include <Net/client.hpp>
#include <SFML/Graphics.hpp>
#include <iostream>
```

### Functions

- void [simpleClient](#) ()

#### 5.48.1 Function Documentation

##### 5.48.1.1 simpleClient()

```
void simpleClient ( )
```

## 5.49 /home/runner/work/R-Type/R-Type/Client/Src/Systems/render\_↵system.cpp File Reference

```
#include "Systems/render_system.hpp"
```

## 5.50 /home/runner/work/R-Type/R-Type/Client/Src/Systems/shoot\_↵system.cpp File Reference

```
#include "Systems/shoot_system.hpp"
```

## 5.51 /home/runner/work/R-Type/R-Type/Client/Src/Systems/update\_↵system.cpp File Reference

```
#include "Systems/update_system.hpp"
```

## 5.52 /home/runner/work/R-Type/R-Type/Server/Src/server.cpp File Reference

```
#include <Net/server.hpp>
```





# Index

/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/weak/R-Type/R-Type/Client/Interface/Include/Entities/entity_	49	55
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/weak/R-Type/R-Type/Client/Interface/Include/Entities/i_entity	50	55
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/weak/R-Type/R-Type/Client/Interface/Include/Entities/i_entity	50	56
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/basic/R-Type/R-Type/Client/Interface/Include/Systems/button	50	57
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/weak/R-Type/R-Type/Client/Interface/Include/Systems/i_syst	50	57
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/weak/R-Type/R-Type/Client/Interface/Include/Systems/rende	51	57
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/weak/R-Type/R-Type/Client/Interface/Include/Systems/shoot	51	58
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/weak/R-Type/R-Type/Client/Interface/Include/Systems/system	51	58
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/weak/R-Type/R-Type/Client/Interface/Include/Systems/updat	51	58
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/weak/R-Type/R-Type/Client/Interface/Include/button.hpp,	52	49
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/weak/R-Type/R-Type/Client/Interface/Include/client.hpp,	52	49
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/weak/R-Type/R-Type/Client/Interface/Include/error_handling.	52	56
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/weak/R-Type/R-Type/Client/Interface/Include/mainmenu.hpp	53	56
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/weak/R-Type/R-Type/Client/Interface/Include/r_type_client.h	53	57
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/weak/R-Type/R-Type/Client/Interface/Include/scenes.hpp,	53	57
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/weak/R-Type/R-Type/Client/Interface/Include/texture_manag	53	58
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/weak/R-Type/R-Type/Client/Interface/Include/entities/entity	53	59
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/weak/R-Type/R-Type/Client/Interface/Include/entities/entity	54	59
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/weak/R-Type/R-Type/Client/Interface/Include/entities/entity	54	61
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/weak/R-Type/R-Type/Client/Interface/Include/entities/entity	54	61
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/weak/R-Type/R-Type/Client/Interface/Include/entities/entity	54	61
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Components/weak/R-Type/R-Type/Client/Interface/Include/entities/entity	54	59
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Entities/entity.hpp	55	59
/home/runner/work/R-Type/R-Type/Client/Interface/Include/Entities/entity.hpp	55	60

/home/runner/work/R-Type/R-Type/Client/Src/scenes.cpp, Button, 8  
     60  
 /home/runner/work/R-Type/R-Type/Client/Src/simpleClient.cpp, bgImage, 11  
     61  
 /home/runner/work/R-Type/R-Type/Server/Src/main.cpp, font, 11  
     60  
 /home/runner/work/R-Type/R-Type/Server/Src/server.cpp, fontSize, 12  
     61  
 \_buffer  
     Client, 13  
 \_fireRate  
     ShootSystem, 41  
 \_hostName  
     Client, 13  
 \_id  
     Entity, 17  
 \_lastShotTime  
     ShootSystem, 42  
 \_playerId  
     ShootSystem, 42  
 \_port  
     Client, 13  
 \_queue  
     Client, 14  
 \_scenes  
     Rtype, 35  
 \_sockedFd  
     Client, 14  
 \_text  
     TextComponent, 43  
 \_window  
     RenderSystem, 33  
     Rtype, 36  
     Scenes, 39  
     UpdateSystem, 46  
 ~Button  
     Button, 9  
 ~Client  
     Client, 13  
 ~IEntity  
     IEntity, 24  
 ~IEntityFactory  
     IEntityFactory, 25  
 ~Scenes  
     Scenes, 38  
 addComponent  
     ComponentManager, 14  
 AllyComponent, 7  
 AllyMissileComponent, 7  
 BackgroundComponent, 7  
 BasicMonsterComponent, 7  
 bgImage  
     Button, 11  
 bullet\_lifetime  
     WeaponComponent, 47  
 bullet\_speed  
     WeaponComponent, 47  
     ~Button, 9  
     Button, 8, 9  
     font, 11  
     fontSize, 12  
     getPosition, 9  
     getSize, 9  
     getText, 10  
     isHovered, 10  
     onClick, 12  
     onHover, 12  
     rect, 12  
     render, 10  
     setFont, 10  
     setFontSize, 10  
     setOnClick, 10  
     setOnHover, 10  
     setPosition, 11  
     setSize, 11  
     setText, 11  
     setTexture, 11  
     text, 12  
 Client, 12  
     \_buffer, 13  
     \_hostName, 13  
     \_port, 13  
     \_queue, 14  
     \_sockedFd, 14  
     ~Client, 13  
     Client, 13  
 ComponentManager, 14  
     addComponent, 14  
     components, 15  
     getComponent, 14  
     componentNotFound, 15  
     what, 15  
 components  
     ComponentManager, 15  
 createAlly  
     EntityFactory, 18  
     IEntityFactory, 26  
 createAllyMissile  
     EntityFactory, 18  
     IEntityFactory, 26  
 createBackground  
     EntityFactory, 18  
     IEntityFactory, 26  
 createBasicEnemy  
     EntityFactory, 18  
     IEntityFactory, 26  
 createBasicMonster  
     EntityFactory, 18  
     IEntityFactory, 26  
 createButton  
     EntityFactory, 19  
 createEnemyMissile  
     EntityFactory, 19

- IEntityFactory, 27
- createEntity
  - EntityManager, 20
- createPlayer
  - EntityFactory, 19
  - IEntityFactory, 27
- createPlayerMissile
  - EntityFactory, 19
  - IEntityFactory, 27
- currentDaltonismMode
  - Scenes, 40
- currentGameMode
  - Scenes, 40
- currentScene
  - Scenes, 40
- DaltonismMode
  - Scenes, 37
- damage
  - WeaponComponent, 47
- DEUTERANOPIA
  - Scenes, 37
- DOWN
  - input\_component.hpp, 52
- EASY
  - Scenes, 37
- EnemyComponent, 16
- EnemyMissileComponent, 16
- entities
  - EntityManager, 21
- Entity, 16
  - \_id, 17
  - Entity, 16
  - getId, 17
- EntityFactory, 17
  - createAlly, 18
  - createAllyMissile, 18
  - createBackground, 18
  - createBasicEnemy, 18
  - createBasicMonster, 18
  - createButton, 19
  - createEnemyMissile, 19
  - createPlayer, 19
  - createPlayerMissile, 19
- EntityManager, 20
  - createEntity, 20
  - entities, 21
  - entityNb, 21
  - getAllEntities, 20
  - getEntity, 20
  - removeEntity, 20
- entityNb
  - EntityManager, 21
- entityNotFound, 21
  - what, 21
- EXIT
  - Scenes, 37
- failedToLoadTexture, 22
  - what, 22
- fire\_rate
  - WeaponComponent, 47
- fireMissile
  - ShootSystem, 41
- font
  - Button, 11
- fontSize
  - Button, 12
- GAME\_LOOP
  - Scenes, 37
- gameLoop
  - Rtype, 34
  - Scenes, 38
- GameMode
  - Scenes, 37
- getAllEntities
  - EntityManager, 20
- getComponent
  - ComponentManager, 14
- getEntity
  - EntityManager, 20
- getId
  - Entity, 17
  - IEntity, 24
- getPosition
  - Button, 9
- getSize
  - Button, 9
- getText
  - Button, 10
- getTexture
  - TextureManager, 44
- h
  - HitboxComponent, 23
- handleEvents
  - Rtype, 34
- HARD
  - Scenes, 37
- health
  - HealthComponent, 22
- HealthComponent, 22
  - health, 22
  - max\_health, 23
- HitboxComponent, 23
  - h, 23
  - w, 23
  - x, 23
  - y, 24
- IEntity, 24
  - ~IEntity, 24
  - getId, 24
- IEntityFactory, 25
  - ~IEntityFactory, 25
  - createAlly, 26

- createAllyMissile, 26
- createBackground, 26
- createBasicEnemy, 26
- createBasicMonster, 26
- createEnemyMissile, 27
- createPlayer, 27
- createPlayerMissile, 27
- IN\_GAME\_MENU
  - Scenes, 37
- inGameMenu
  - Scenes, 38
- input
  - InputComponent, 28
- input\_component.hpp
  - DOWN, 52
  - InputType, 52
  - LEFT, 52
  - NONE, 52
  - QUIT, 52
  - RIGHT, 52
  - SHOOT, 52
  - UP, 52
- InputComponent, 27
  - input, 28
- InputType
  - input\_component.hpp, 52
- isClicked
  - OnClickComponent, 30
- isHovered
  - Button, 10
  - OnHoverComponent, 30
- ISystem, 28
  - ISystem, 28
- LEFT
  - input\_component.hpp, 52
- main
  - main.cpp, 59, 60
- main.cpp
  - main, 59, 60
  - simpleClient, 59
- MAIN\_MENU
  - Scenes, 37
- MainMenu
  - mainmenu.hpp, 56
- mainMenu
  - Rtype, 35
  - Scenes, 38
- mainmenu.hpp
  - MainMenu, 56
- max\_health
  - HealthComponent, 23
- MEDIUM
  - Scenes, 37
- NONE
  - input\_component.hpp, 52
- NORMAL
  - Scenes, 37
- offset
  - OffsetComponent, 29
- OffsetComponent, 29
  - offset, 29
- onClick
  - Button, 12
  - OnClickComponent, 30
- OnClickComponent, 29
  - isClicked, 30
  - onClick, 30
  - OnClickComponent, 29
- onHover
  - Button, 12
  - OnHoverComponent, 31
- OnHoverComponent, 30
  - isHovered, 30
  - onHover, 31
  - OnHoverComponent, 30
- PlayerComponent, 31
- PlayerMissileComponent, 31
- PositionComponent, 31
  - PositionComponent, 32
  - x, 32
  - y, 32
- processServerMessages
  - Rtype, 35
- PROTANOPIA
  - Scenes, 37
- QUIT
  - input\_component.hpp, 52
- rect
  - Button, 12
- removeEntity
  - EntityManager, 20
- render
  - Button, 10
  - RenderSystem, 33
  - Scenes, 38
- renderGame
  - Rtype, 35
- RenderSystem, 32
  - \_window, 33
  - render, 33
  - RenderSystem, 33
- RIGHT
  - input\_component.hpp, 52
- Rtype, 33
  - \_scenes, 35
  - \_window, 36
  - gameLoop, 34
  - handleEvents, 34
  - mainMenu, 35
  - processServerMessages, 35
  - renderGame, 35

- Rtype, 34
- run, 35
- updateGame, 35
- run
  - Rtype, 35
- Scene
  - Scenes, 37
- Scenes, 36
  - \_window, 39
  - ~Scenes, 38
  - currentDaltonismMode, 40
  - currentGameMode, 40
  - currentScene, 40
  - DaltonismMode, 37
  - DEUTERANOPIA, 37
  - EASY, 37
  - EXIT, 37
  - GAME\_LOOP, 37
  - gameLoop, 38
  - GameMode, 37
  - HARD, 37
  - IN\_GAME\_MENU, 37
  - inGameMenu, 38
  - MAIN\_MENU, 37
  - mainMenu, 38
  - MEDIUM, 37
  - NORMAL, 37
  - PROTANOPIA, 37
  - render, 38
  - Scene, 37
  - Scenes, 38
  - setDaltonism, 38
  - setGameMode, 39
  - setScene, 39
  - SETTINGS\_MENU, 37
  - settingsMenu, 39
  - shouldQuit, 39
  - TRITANOPIA, 37
- score
  - ScoreComponent, 40
- ScoreComponent, 40
  - score, 40
- setDaltonism
  - Scenes, 38
- setFont
  - Button, 10
- setFontSize
  - Button, 10
- setGameMode
  - Scenes, 39
- setOnClick
  - Button, 10
- setOnHover
  - Button, 10
- setPosition
  - Button, 11
- setScene
  - Scenes, 39
- setSize
  - Button, 11
- setText
  - Button, 11
- setTexture
  - Button, 11
- SETTINGS\_MENU
  - Scenes, 37
- settingsMenu
  - Scenes, 39
- SHOOT
  - input\_component.hpp, 52
- ShootSystem, 41
  - \_fireRate, 41
  - \_lastShotTime, 42
  - \_playerId, 42
  - fireMissile, 41
  - ShootSystem, 41
- shouldQuit
  - Scenes, 39
- simpleClient
  - main.cpp, 59
  - simpleClient.cpp, 61
- simpleClient.cpp
  - simpleClient, 61
- speed
  - VelocityComponent, 46
- sprite
  - SpriteComponent, 43
- SpriteComponent, 42
  - sprite, 43
  - SpriteComponent, 42
- text
  - Button, 12
- TextComponent, 43
  - \_text, 43
  - TextComponent, 43
- TextureManager, 44
  - getTexture, 44
  - textures, 44
- textures
  - TextureManager, 44
- TRITANOPIA
  - Scenes, 37
- UP
  - input\_component.hpp, 52
- update
  - UpdateSystem, 45
- updateBackground
  - UpdateSystem, 45
- updateGame
  - Rtype, 35
- updatePlayerMissile
  - UpdateSystem, 45
- UpdateSystem, 44
  - \_window, 46
  - update, 45

