

For Game UI:

Requirement	Specification	Main Code(frontend.py)	Validation
R1.1	S2.1, S2.3, S2.6, S4.1	BoardWidget.__init__() BoardWidget.paintEvent() GameWindow.__init__()	V1.3.1, V1.3.2, V3.3
R1.2	S4.1	GameWindow.on_response()	V1.4.3
R1.3	S2.6, S4.1	BoardWidget.paintEvent()	V1.3.2, V1.4.3, V3.3
R1.4	S4.1	GameWindow.on_response(msg)	V1.4.3, V3.3
R1.5	S2.3, S2.5, S3.3	BoardWidget.mousePressEvent()	V1.3.3
R1.6	S2.5, S3.4	GameWindow.__init__() (The move buttons' logic)	V2.2.4
R1.7	S3.8	GameWindow.__init__() (The undo button's logic)	V2.2.5
R1.8	S3.1, S3.2, S3.5	GameWindow.__init__() (The level button's logic) GameWindow.populate_level_menu() GameWindow.show_level_menu() GameWindow._on_level_selected() GameWindow.set_level()	V1.4.1, V2.2.2
R1.9	S2.2, S2.4, S3.9	GameWindow.__init__() (The hint button's logic)	V2.2.6
R1.10	S3.7	GameWindow.__init__() (The reset buttons' logic) GameWindow.reset_game()	V1.4.2, V2.2.2, V2.2.3, V3.3
R1.11	S3.1, S3.2, S3.6	GameWindow.__init__() (The level button's logic) GameWindow.populate_level_menu() GameWindow.show_level_menu() GameWindow._on_level_selected() GameWindow.set_random_level()	V1.4.1, V2.2.3

For Board game system:

Requirement	Specification	Main Code (backend.py)	Validation
R2.1	S1.1, S1.2, S1.6, S3.1, S3.2, S3.5	HuarongDaoGame.setboard()	V1.1.1, V1.1.4, V1.4.1, V2.2.2, V3.3
R2.2	S1.2, S1.3, S1.6, S2.5, S3.3, S3.4	HuarongDaoGame.move_piece()	V1.1.2, V1.1.4, V1.3.3, V2.2.4, V3.3
R2.2.1	S1.2, S1.3, S1.5, S1.6, S2.5, S3.3, S3.7	ZmeFrontendServer.handle_message() (logic about move)	V1.1.2, V1.1.4, V1.3.3, V2.2.4, V3.3
R2.2.2	S1.2, S1.3	ZmeFrontendServer.handle_message() (logic about move)	V1.1.2, V1.1.4, V2.2.4, V3.3
R2.3	S1.2, S1.4, S1.6, S2.6, S3.8	HuarongDaoGame.undo()	V1.1.3, V1.1.4, V1.3.2, V2.2.5, V3.3
R2.4	S1.8, S2.2, S2.4, S3.9	ZmeFrontendServer.handle_message() (logic about hint)	V1.2.2, V1.3.2, V2.2.6, V3.3
R2.5	S1.5, S4.1	ZmeFrontendServer.handle_message() (logic about move)	V2.1.4, V3.3
R2.6	S1.6, S4.1	ZmeFrontendServer._send_state()	V1.1.4, V3.3
R2.7	S1.7, S3.1, S3.2, S3.6	HuarongDaoGame.generate_random_board() ZmeFrontendServer.handle_message() (logic about random)	V1.1.5, V1.4.1, V2.2.3, V3.3