# UI Unit Testing

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| Test ID | Unit | Input | Expected Output/Action | Test | Risk |
| GUI1 | STL Import Button | Button Press  String File Name | * Returns message of success to user. * Returns message of failure to user. * Returns message of failure to user. | * Choose a valid STL file and click Import. * Choose an invalid STL file and click Import. * Choose an invalid file type and click “Import”. | Moderate - 3 |
| GUI2 | STL Delete Button | Button Press  String File Name | * Returns message of success to user. | * Choose an STL file and click “Delete”. | Moderate – 3 |
| GUI3 | Material New Button | Button Press  String File Name | * Updates display | * Manually click “New”. | Moderate – 3 |
| GUI4 | Material Save Button | Button Press  String File Name  Material Data | * Returns message of success to user. * Returns message of failure to user. | * Insert data of valid type and click “Save”. * Insert data of invalid type and click “Save”. | Moderate – 3 |
| GUI5 | Material Delete Button | Button Press  String File Name | * Returns message of success to user. | * Choose a material file and click “Delete”. | Moderate - 3 |
| GUI6 | Printer New Button | Button Press  String File Name | * Updates display | * Manually click “New”. | Moderate – 3 |
| GUI7 | Printer Save Button | Button Press  String File Name | * Returns message of success to user. * Returns message of failure to user. | * Insert data of valid type and click “Save”. * Insert data of invalid type and click “Save”. | Moderate – 3 |
| GUI8 | Printer Delete Button | Button Press  String File Name | * Returns message of success to user. | * Choose a printer config file and click “Delete”. | Moderate - 3 |
| GUI9 | Extruder New Button | Button Press  String File Name | * Updates display | * Manually click “New”. | Moderate – 3 |
| GUI10 | Extruder Save Button | Button Press  String File Name | * Returns message of success to user. * Returns message of failure to user. | * Insert data of valid type and click “Save”. * Insert data of invalid type and click “Save”. | Moderate – 3 |
| GUI11 | Extruder Delete Button | Button Press  String File Name | * Returns message of success to user. | * Choose an extruder config file and click “Delete”. | Moderate - 3 |
| GUI12 | Print Config New Button | Button Press  String File Name | * Updates display | * Manually click “New”. | Moderate - 3 |
| GUI13 | Print Config Save Button | Button Press  String File Name | * Returns message of success to user. * Returns message of failure to user. | * Insert data of valid type and click “Save”. * Insert data of invalid type and click “Save”. | Moderate - 3 |
| GUI14 | Print Config Delete Button | Button Press  String File Name | * Returns message of success to user. | * Choose a print config file and click “Delete”. | Moderate - 3 |
| GUI15 | Load Print Job Configuration | Button Press  String File Name | * Updates display | * Choose a print job configuration. | Moderate - 3 |
| GUI16 | New Subsection | Button Press | * Updates display | * Click “New Subsection”. | Moderate - 3 |
| GUI17 | Save Print Job Configuration | Button Press  String File Name  Print Job Config Data | * Returns message of success to user. * Returns message of failure to user. | * Insert data of valid type and click “Save”. * Insert data of invalid type and click “Save”. | Moderate - 3 |
| GUI18 | Status Pause & Resume Button | Button Press | * Updates display * Updates display | * Click “pause” button * Click “resume” button | Moderate – 3 |
| GUI19 | Status Cancel Button | Button Press | * Updates display | * Click “Cancel” button. | Moderate – 3 |

# Controller Unit Testing

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| Test ID | Unit | Input | Expected Output/Action | Test | Risk |
| CTR1 | Import STL | File Name of STL | * Boolean Success state = success * Boolean Success state = failure * Boolean Success state = failure | * Pass a valid STL file. * Pass an invalid STL file. * Pass an invalid file type. | Critical - 1 |
| CTR2 | Delete STL | File Name of STL | * Boolean Success State = success * Boolean Success State = failure | * Pass a valid STL file. * Pass an invalid file. | Critical - 1 |
| CTR3 | Save Material Configuration | String File Name  Material Config Object | * Boolean Success State = success * Boolean Success State = failure | * Pass a Material config object with values within boundary * Pass a Material config object with values exceeding boundary | Critical - 1 |
| CTR4 | Load Material Configuration | String File Name | * Material Config Object * Error | * Pass valid string name * Pass invalid string name | Critical - 1 |
| CTR5 | Delete Material Configuration | String File Name | * Boolean Success State = success * Boolean Success State = failure | * Pass valid string name * Pass invalid string name | Critical – 1 |
| CTR6 | Load Available Materials | None | * Array List<String> of file names | * Call the function | Moderate – 3 |
| CTR7 | Save Printer Configuration | String File Name  Printer Config Object | * Boolean Success State = success * Boolean Success State = failure | * Pass a Printer config object with values within boundary * Pass a Printer config object with values exceeding boundary | Critical – 1 |
| CTR8 | Load Printer Configuration | String File Name | * Printer Config Object * Error | * Pass valid string name * Pass invalid string name | Critical – 1 |
| CTR9 | Delete Printer Configuration | String File Name | * Boolean Success State = success * Boolean Success State = failure | * Pass valid string name * Pass invalid string name | Critical – 1 |
| CTR10 | Load Available Printers | None | * Array List<String> of file names | * Call the function | Moderate – 3 |
| CTR11 | Get Serial Port Enumeration | None | * Array List<String> of port descriptors | * Call the function | Critical – 1 |
| CTR12 | Save Print Configuration | String File Name  Print Config Object | * Boolean Success State = success * Boolean Success State = failure | * Pass a Print Config object with values within boundary * Pass a Printer Config object with values exceeding boundary | Critical – 1 |
| CTR13 | Load Print Configuration | String File Name | * Print Config Object * Error | * Pass valid string name * Pass invalid string name | Critical – 1 |
| CTR14 | Delete Print Configuration | String File Name | * Boolean Success State = success * Boolean Success State = failure | * Pass valid string name * Pass invalid string name | Critical – 1 |
| CTR15 | Load Available Print Configs | None | * Array List<String> of file names | * Call the function | Moderate – 3 |
| CTR16 | Save Extruder Configuration | String File Name  Extruder Config Object | * Boolean Success State = success * Boolean Success State = failure | * Pass a Extruder Config object with values within boundary * Pass a Extruder Config object with values exceeding boundary | Critical – 1 |
| CTR17 | Load Extruder Configuration | String File Name | * Extruder Config Object * Error | * Pass valid string name * Pass invalid string name | Critical – 1 |
| CTR18 | Delete Extruder Configuration | String File Name | * Boolean Success State = success * Boolean Success State = failure | * Pass valid string name * Pass invalid string name | Critical – 1 |
| CTR19 | Load Available Extrudes | None | * Array List<String> of file names | * Call the function | Moderate – 3 |
| CTR20 | Save Print Job Config | String File Name  Print Job Config Object | * Boolean Success State = success * Boolean Success State = failure | * Pass a Print Job Config object with values within boundary * Pass a Print Job Config object with values exceeding boundary | Critical – 1 |
| CTR21 | Load Print Job Config | String File Name | * Print Job Config Object * Error | * Pass valid string name * Pass invalid string name | Critical – 1 |
| CTR22 | Delete Print Job Config | String File Name | * Boolean Success State = success * Boolean Success State = failure | * Pass valid string name * Pass invalid string name | Critical – 1 |
| CTR23 | Load Available Print Jobs | None | * Array List<String> of file names | * Call the function | Moderate – 3 |
| CTR24 | Start Print | Print Job Config Object | * Open Status GUI * Error | * Pass a correct Print Job Config Object with values within boundary. * Pass a Print Job Config Object with values outside boundary. | Critical – 1 |

# UI Subsystem Tests

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| --- | --- | --- | --- | --- | --- | --- |
| Test ID | Subsystem | Input | Expected Output/Action | Test | Risk | Pretested  IDs |
| SUI1 | GUI Subsystem | Button Presses  Text Fields | * Updates display with correct results * Navigating between menus is easy. (This output is subjective) | * Test individual units * Tester navigates the menus by clicking the tabs. | Moderate – 3 |  |
| SUI2 | Controller Subsystem | String File Names  Object Files | * Makes the proper load and save requests with the correct info. | * Check how the subsystem handles correct and incorrect data. | Critical – 1 |  |
| SUI3 | Database Subsystem |  |  |  |  |  |

# UI layer Integration Tests

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| --- | --- | --- | --- | --- | --- | --- |
| Test ID | Subsystem | Input | Expected Output/Action | Test | Risk | Pretested  IDs |
| LUI1 | GUI and User Integration | Button Presses  Text Fields | * Updates display with correct results * Navigating between menus is easy. (This output is subjective) * Understanding the menus is easy. (This output is subjective) | * Test individual units * Tester navigates the menus by clicking the tabs. * Test the “feel” of each menu. | Moderate – 3 |  |
| LUI2 | GUI and Controller Integration | String File Names  Object Files | * The GUI calls the correct Controller function for each corresponding option. | * Click each button and check for call of correct function. * Check if parameters from GUI are correctly passed to Controller. | Critical – 1 |  |
| LUI3 | Controller and Database Subsystem Integration |  | * The Database receives the parameters to fulfill requests. |  | Critical – 1 |  |
| LUI4 | Database Subsystem and Database Integration |  |  |  | Critical – 1 |  |