

LAB-REPORT

SOFTWARE ENGINEERING

IT 314

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Program Inspection, Debugging and
Static Analysis

Clang Analyzer	Logic Error	ticket.cpp	125	Incorrect conditional logic in the deletedata() function.	High
SonarQube	Code Smell	main.cpp	22	Nested loop complexity is high, could impact performance.	Medium
SonarQube	Hardcoded Values	orderFood.cpp	60	Use of hardcoded food prices, which should be defined as constants.	Medium
SonarQube	Potential Memory Leak	orderFood.cpp	130	Failing to close file streams can lead to resource leaks.	Medium
SonarQube	Redundant Code	main.cpp	50	Redundant variable schoice declared but never used.	Low
PVS-Studio	Missing Return Statement	orderFood.cpp	92	Function does not have a return statement at the end.	Medium
PVS-Studio	Inefficient Algorithm	ticket.cpp	65	Inefficient data handling in the loop for file operations.	Medium

Cppcheck	Null Pointer Dereference	orderFood.cpp	92	Dereferencing a pointer without null check in displayFoodReceipt().	High
Cppcheck	Unreachable Code	orderFood.cpp	180	Code after return statement in foodOptions() is unreachable.	Medium
Clang Analyzer	File Handling Error	orderFood.cpp	30	File opened without checking if the operation was successful.	Medium
Clang Analyzer	Input Validation	main.cpp	10	Lack of input validation for menu choices, can lead to unexpected behavior.	Medium
Clang Analyzer	Logic Error	ticket.cpp	125	Incorrect conditional logic in the deletedata() function.	High
SonarQube	Code Smell	main.cpp	22	Nested loop complexity is high, could impact performance.	Medium
SonarQube	Hardcoded Values	orderFood.cpp	60	Use of hardcoded food prices, which should be defined as constants.	Medium
SonarQube	Potential Memory Leak	orderFood.cpp	130	Failing to close file streams can lead to resource leaks.	Medium
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A	B	C	D	E	F
Tool Name	Defect Type	File Name	Line Number	Description	Severity
Cppcheck	Memory Leak	orderFood.cpp	100	Memory allocated but not freed.	High
Cppcheck	Infinite Loop	orderFood.cpp	75	Potential infinite recursion in getDetails() method.	High
Cppcheck	Unused Variable	ticket.cpp	45	Variable w is declared but never used.	Low
Clang Analyzer	File Handling Error	orderFood.cpp	30	File opened without checking if the operation was successful.	Medium
Clang Analyzer	Input Validation	main.cpp	10	Lack of input validation for menu choices.	Medium
SonarQube	Code Smell	main.cpp	22	Nested loop complexity is high.	Medium
SonarQube	Use of goto	orderFood.cpp	200	Use of goto statements leads to convoluted control flow.	Low
Cppcheck	Buffer Overflow	orderFood.cpp	78	Possible buffer overflow in displayMenu() when reading input.	High