CSI291 MTExam 2024

Average: 23.01/45, Std Deviation: 9.27   
Highest Mark: 43.75/45, lowest mark: 0.5/45

Overall, the class performed better on questions 1 and 2, much less on questions 3 and 4.

In question 3, your full code should include the headers and the function prototypes. In the main function,

the code should look like the following:

int number=input\_positive\_validate\_integer();

bool flag= is\_perfect\_number(number);

Regarding question 2, I should remind you about the following:

* If you are asked to write code for a function, give the function code only and not the entire program. Unless specified, the function code should not include printf or scanf statements. Use a return statement for the function’s output , rather than printf.
* With the division operator (/), if both operands are integer, the operation performs an integer division whose result can then be converted to a float or double with 0 fractional part.
* In C, the ‘false’ Boolean state corresponds to 0, any other value corresponds to the ‘true’ Boolean state.
* ‘For’ and ‘While’ implement pre-test loops, meaning the loop test condition is always checked first if it is true, even on the first iteration, before running the loop body. In contrast, Do—While loops are post-test loops (see the descriptive flow-charts in the notes)
* Curly braces are not mandatory if a code block contains only one statement. Therefore, unlike what many thought, the following code is correct:

if (j >10)

result = 1;

else

result = 0;

* A semi colon “;” corresponds to an empty statement: do-nothing
* To prevent “Fall through” execution behaviour in C switch, each case label code should end with a break statement.
* The variable “j” in the following code is not accessible outside the loop body where it is declared:

for (int j = 0; j < 3; j++);

printf("%d", j);

* Review the purpose of ‘break’ and ‘continue’ statements in loops
* More importantly understand the difference between pass by reference and pass by value





A screenshot of a computer code

Description automatically generated

A screenshot of a computer program

Description automatically generated