(SECJ1013) PROGRAMMING TECHNIQUE 1

SEM 1, SESSION 2023/2024

LAB EXERCISE 3 (4%)

INSTRUCTIONS TO THE STUDENTS

- This exercise must be done **individually**.
- Any form of plagiarism is **NOT ALLOWED**. Students who copied other students' assignments will get **ZERO** marks (both parties, students who copied, and students who shared their work).

SUBMISSION PROCEDURE

- Please submit this exercise no later than **December 21, 2023, Thursday (1 PM MYT)**.
- Only hardcopy is accepted for this submission with handwriting (at my office – n28a, level 2, room 02-31-01).

Fill your information here:

Name	GUI KAH SIN
Matric Number	A23CS0080
Year / Course	1 / SECPH
Section	03

Line Number	Correct Statement with the reason (s)
5	void display_Question (int); //needs both parameter data type and semicolon for the function prototype
6	void yes_No (char &); // needs both parameter data type and semicolon for the function prototype. Besides, parameter must be reference variable to ensure value passed by reference to main function
7	int get_Status (char , char , char); // needs both parameter data type and semicolon for the function parameter
18	for (int i=1 ; i<=3 ; i++){ // To ensure for loop undergo the else part, which is the third loop
19	display_Question (i); // function name is not equal, display_question ≠ display_Question
20	if (i == 1) // We need to determine whether i is equal to 1, rather than assigned i to 2
23	else if (i==2) // We need to determine whether i is equal to 2, rather than assigned i to 2
35	switch (status) { // We don't need loop, just want to check value of expression and display relevant output
36	case 0 : cout << "GREEN"; break; // change to switch
37	case 1 : cout << "YELLOW"; break;
38	case 2: cout << "ORANGE"; break; // break out of switch, so when expression = 2, it won't move to the next line
39	default : cout << "RED"; break;
46	void display_Question (int q){ // parameter's data type is integer
47	switch (q) { // needs curly brackets to define a block of code that should be executed
54	default: // when expression is not equal to any values above, execute the default statement
55	Celcius?\n"; break // break out of switch

LineNumber	Correct Statement with the reason(s)
56	} // no return statement; since it is void function
59	void yes_No (char &ans){ // need the ampersand (&) symbol, so that it becomes a reference variables to implement passing parameters by reference
62	cin >> ans; // input symbol >>
63	}while (ans!= 'n' && ans!= 'y'); // the loop will continue until 'n' or 'y', which is a valid character entered by user

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	if (rz== 'y') s++;
	if (cc == 'y') s++;
	if (f == 'y') s++; // single equal symbol means assigned a value to variable, while we just want to check whether the variables are equal to 'y' or not

```
// GUI KAH SIN  A23CS0080

# include <iostream>
# include <string>
 using namespace std;


// constants with the associated values
# define WASH 10.0 // the price of WASH service charge
# define VACUUM 7.0 // the price of VACUUM service charge
# define POLISH 15.0 // the price of POLISH service charge


// Task 6: List all function prototypes.
void setType (string &);
void setPackage (int &);
float wash ( string );
float vacuum ( string );
float polish ( string );

// Task 7: (i) Call the functions from Task 1 until Task 5.
int main ( )
{
    string carType; // car type variable
    int wsPkg ;     // car wash service package
    float totalCharge ; // total service charge based on different wash service package
with different car type


    //call setType function with the parameter carType

    setType(carType);


    // call setPackage function with the parameter wsPkg

     setPackage( wsPkg);
// Task 7: (ii) totalCharge is the variable to hold the total service charge
based on different wash service package with different car type (sedan or mpv).
        switch ( wsPkg)
        {
            case 1: totalCharge + = wash (carType);
                     break;

            case 2 : totalCharge += vacuum (carType);
                     break;

            default: totalCharge += polish (carType);
                      break;
        }

        cout << endl;
        cout << "Total service charge is " << totalCharge << endl;

        return 0
}

// Task 1: Function to set car type
void setType (string &type)
{
    do
    {
        cout << "Enter car type (sedan / mpv): ";
        cin >> type;
    } while ( type != "sedan" && type != "mpv");
    cout << endl;
}
```

```
// Task 2: Function to set wash service package
 void setPackage (int &pkg)
{
    cout << "1. Basic" <<endl;
    cout << "2. Deluxe " <<endl;
    cout << "3. Premium" <<endl;

    do
    {
        cout << "Choose wash service package (1/2/3):  ";
        cin >> pkg;
    } while (pkg<1 && pkg>3);
    cout <<endl;
}

// Task 3: Function to determine exterior wash service charge based on car type
 float wash (string type)
{
     float charge;
     if (type == "mpv")
          charge = 1.2 * WASH;
     else
          charge = WASH;

     cout << "Wash service charge is  " << charge <<endl;
     return charge;
}

// Task 4: Function to determine interior vacuum service charge based on car type
 float vacuum (string type)
{
    float charge;
    if ( type == "mpv")
        charge = 1.2 * VACUUM;
    else
        charge = VACUUM;
    cout << "Vacuum service charge is " << charge << endl;
    return charge;
}
// Task 5: Function to determine exterior polish service charge based on car type
float polish (string type)
{
    float charge;
    if ( type == "mpv")
        charge = 1.7 * POLISH;
    else
        charge = POLISH;

    cout << "Polish service charge is " << charge << endl;
    return charge;
}
```