

ASSIGNMENT 1 FRONT SHEET

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Student declaration I certify that the assignment submission is entirely my own work and I fully understand the consequences of plagiarism. I understand that making a false declaration is a form of malpractice.			
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Grading grid

P1	M1	D1

⚙ **Summative Feedback:**



Resubmission Feedback:

Grade:

Assessor Signature:

Date:

Lecturer Signature:

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I. Introduction.

Hi everyone, My name is Tam and I'm studying at class B18 and today I will present my assignment, My presentation has 3 steps :

1. What is Algorithm ?
 2. Outline the process in building an application
 3. Solve problems using algorithms
-

II. Algorithm.

1. Definite

- An Algorithm is a process to solve a specific task based on conducting a specified sequence of actions.
- An algorithm consists of discrete steps, and a correct algorithm should halt after a finite number of them with a correct result on any qualified input.

For example, I each odd number from 1 to 9, the algorithm must follow step by step by the implementer. First start out with the first odd number, which is 1. Let's multiply it by 2 and then add 7 to get 9. Then I go to the next odd number, 3. Let's multiply it by 2 and add 7 to get 13. We repeat this process for 5, 7 and 9. Then, we want to write out the results as a list separated by commas. Therefore, my final output is 9,13,17,21,25.

III. Outline the process in building an application.

- There are 7 steps that we can build an application :

1. Source Defining or Analyzing the problem.

- The first step of the system analysis is to state the exact problem - the problem, clarify the requirements that the user requires. After studying the question, the analyst establishes a dependency between the facts and the results. Based on the problem model - the problem, the analyst will evaluate and determine the feasibility of the problem - is the problem worth solving?

2. Design.

- There may be different ways to solve the problem - the problem is set up in step 1. The methods may vary in time taken. data storage costs, accuracy In general, there is no optimal method in all aspects. Depending on specific needs, choose the appropriate method. The selection above also needs to be based on the automatic processing capabilities that we will use.

3. Coding.

- Building a tighter, more precise and detailed model of the chosen method. Clearly define the input and output data for the basic implementation steps and order the implementation of the basic steps. It is advisable to apply a structured design method, from the overall design to proceed gradually smoothing.

4. Documenting the program.

- Describe the algorithm by the program. Based on the algorithm that has been built, based on the rules of a programming language to draft a program showing the algorithm set in step 3.

5. Compiling and running the program.

- Software testing is an inspection conducted to provide stakeholders with information about the quality of the product or service being tested. Testing can provide businesses with an independent point of view on software so that it can assess and understand the risks in software deployment.
- Depending on the method, testing can be performed at any time during the software development process.

6. Testing and Debugging.

- Testing :
 - +) Ideally, testing occurs in parallel to the development stage. It is important to continually test to keep post-release costs low. Unit tests, UI tests, and integration testing are necessary to ensure that you work out any major bugs or oversights as early as possible. Test cases can increase time spent in the development stage, but in the long run they can dramatically reduce both time and monetary costs of maintenance and support.
 - +) Testing will also pay off later in the maintenance stage of your app. When you make a minor change, you can run all your test cases and identify where your changes may have broken other parts of the app without having to have a human manually walk through each test case.
- Debugging :
 - +) Now, your application is fully functional and you realize there is still something to adjust. Let's Choose the appropriate plan to deploy to your application. You will fix

and correct problems discovered during the testing phase. Finally, let's meet the development team app and designer to decide what changes are valuable to your app.

7. Maintenance.

- This stage really begins at the same time as release and should progress in parallel. Maintenance is where you monitor the status of your app, fix any bugs that may be present, and make sure the app continues to work as expected. Updating your app for new versions of the OS, or to support new devices, is also a part of maintenance.
- Ongoing maintenance of your app never ends. Until you decide to discontinue support for your app (potentially abandoning your users), you will be maintaining your app indefinitely.

IV. Solve problems using algorithms.

1. Problem.

- Managing and controlling room information for employees is a very important job, it helps employees with the salary according to each position and classifies employees into the room you want to offer, this will help You can easily manage your salary and manage your employees.

2. Analysis.

- My problem is broken down into features:

+) Room manager :

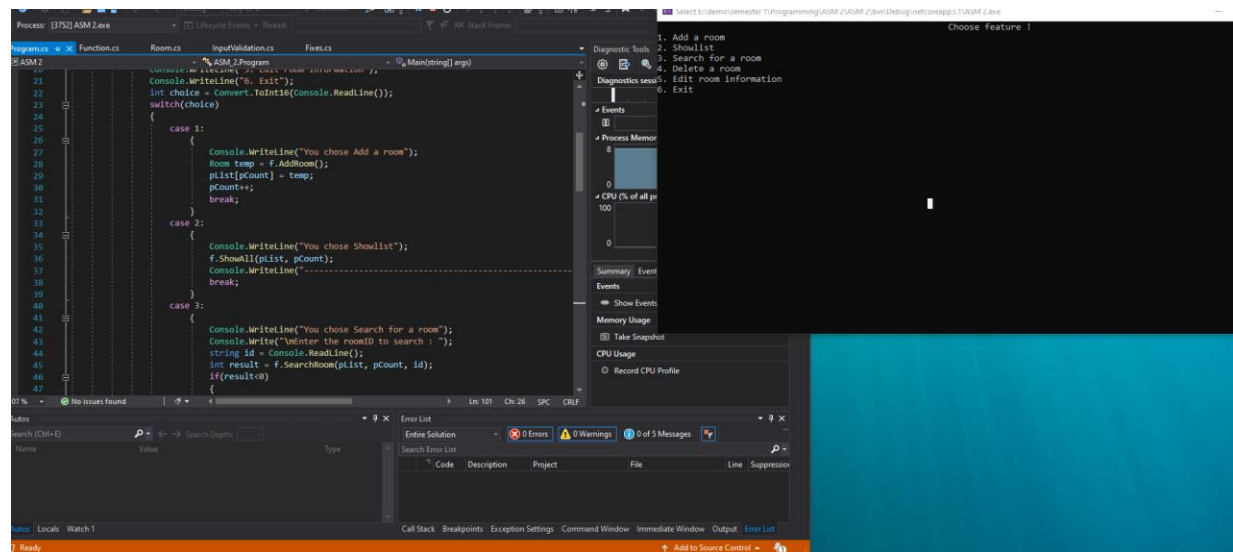
- Allows users to add, delete, edit and search information about room types.

+) Employee manager :

- Put an employee in a room type, the employee of which room type, the salary of that room type and the working time of the employee is equivalent to a certain salary.

3. Menu of the program.

- Below is an illustration of the program menu that I will build for the staff management problem :



```

16: Console.WriteLine("Enter your choice:");
17: Console.WriteLine("0. Exit");
18: int choice = Convert.ToInt32(Console.ReadLine());
19: switch(choice)
20: {
21:     case 0:
22:         Console.WriteLine("You chose Add a room");
23:         Room temp = f.AddRoom();
24:         pList[pCount] = temp;
25:         pCount++;
26:         break;
27:     case 1:
28:         Console.WriteLine("You chose Showlist");
29:         f.ShowAll(pList, pCount);
30:         Console.WriteLine("-----");
31:         break;
32:     case 2:
33:         Console.WriteLine("You chose Search for a room");
34:         Console.WriteLine("Enter the roomID to search : ");
35:         string id = Console.ReadLine();
36:         int result = f.SearchRoom(pList, pCount, id);
37:         if(result > 0)
38:         {
39:             Console.WriteLine("Room found");
40:         }
41:         else
42:         {
43:             Console.WriteLine("Room not found");
44:         }
45:         break;
46:     default:
47:         Console.WriteLine("Invalid choice");
48:         break;
49: }
50: Console.WriteLine("Press any key to continue...");
51: Console.ReadKey();
52: }

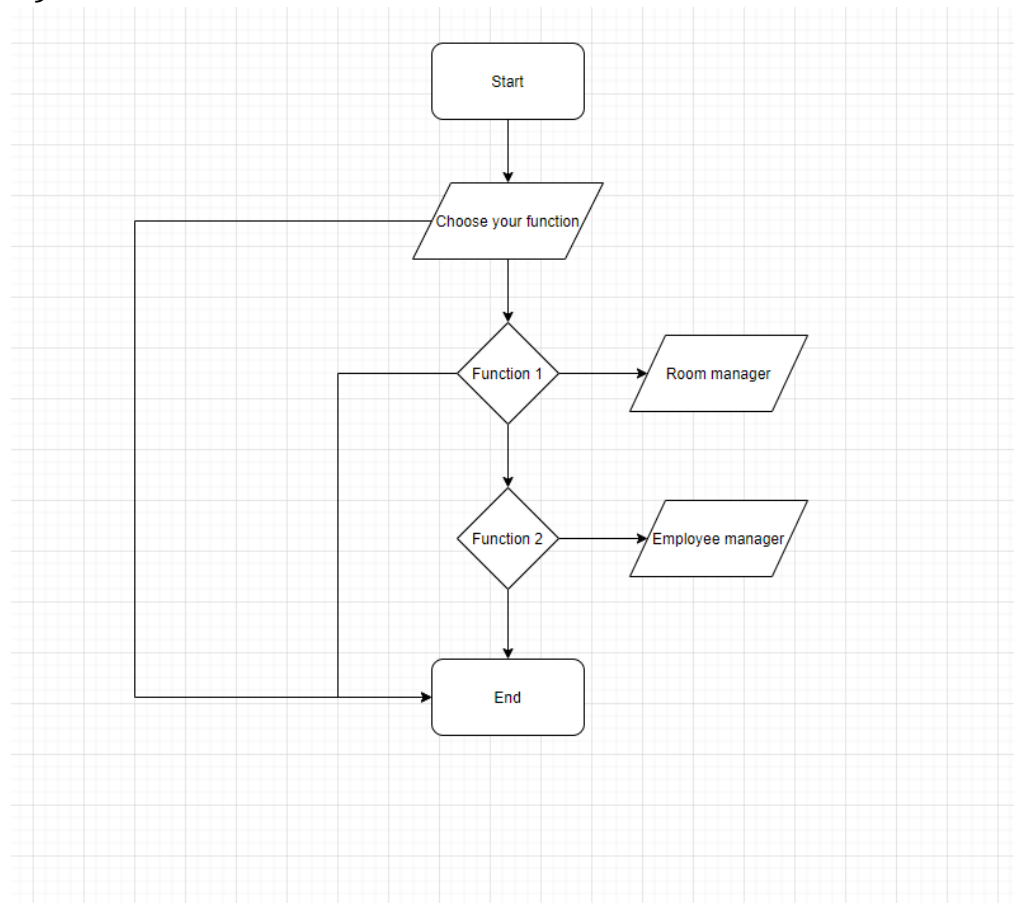
```

Note: This is my staff management problem

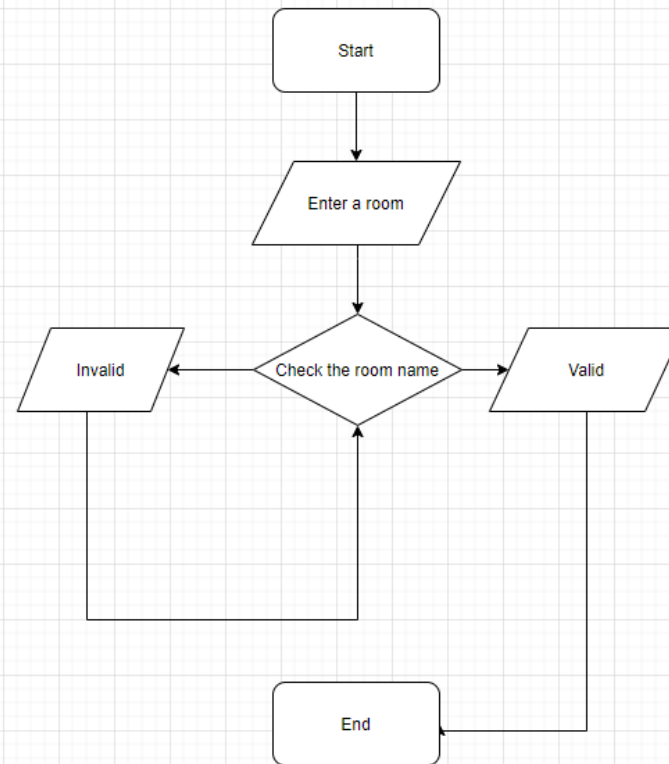
4. Functional analysis.

- Flowchart :

+) Main Menu :



+) Room manager :



V. Summary

- In this presentation, I have provided basic knowledge about algorithms, steps to build an application and apply algorithms to solve problems. I used programming tools to build and simulate problems. Provide diagrams describing the basic functions of the problem.

VI. Source.

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