



**Daffodil**  
*International*  
**University**

Department of Computing and Information System  
Assignment: Summer Semester 2021  
Program: B.Sc. in CIS  
Course Code: CIS 312  
Course Title: Computer Architecture and Organization  
Title: **Smart Home**

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In the previous several decades, smart home systems have grown in popularity as they improve comfort and quality of life. Smartphones and microcontrollers are at the heart of most smart home systems. Using wireless connection methods, a smartphone app is utilized to manage and monitor house services. By embedding intelligence into sensors and actuators, networking smart things using the appropriate technology, facilitating interactions with smart things using cloud computing for easy access in different locations, increasing computation power, storage space, and improving data exchange. Assembly language has been used to control the IoT based smart home system where it is considered as embedded computer system. Different computerized circuit concepts are also used to make smart home. Now, perform the following tasks based on this scenario.

**[Instructions: Give clear and concise answers for every subtask. Use examples if necessary]**  
**Total Marks: 35**

### **Task 1: 15 Marks**

- A. Block diagram of smart home automation system.
- B. Describe the working principle of overall automation system.
- C. Embedded assembly coding to implement this automation system.

### **Task 2: 10 Marks**

- A. Make a design using circuit maker of IoT based concept from the above scenario.

### Task 3: 10 Marks

- A. Describe about the microprocessor which will be used to develop the above scenario.
- B. Make a 5 minutes video of overall tasks and shared the video link.

### General Instructions:

- ❖ **You have to submit the assignment in .docx or .pdf format (name it with your ID, such as 183-16-678.docx), **Zip the file if any additional documents need.****
- ❖ Submit the assignment **in the Smart Edu LMS Assignment section**, the option of submission will be available there very soon.
- ❖ Marks will be deducted accordingly if any plagiarism of work is provided.