



Daffodil
International
University

Department of Computing and Information System

Midterm Assignment: Summer Semester 2021

Program: B.Sc. in CIS

Course Code: CIS 332

Course Title: Software Engineering

Title: Virtual Assistant

Alexa is Amazon's digital assistant, first launched in 2014 along with the Amazon Echo smart speaker. Alexa can provide results for web searches, order products from Amazon, and act as a hub for compatible IoT devices all via voice commands. Amazon allows device manufacturers to integrate Alexa voice capabilities into their own connected products by using the Alexa Voice Service (AVS), a cloud-based service that provides APIs to interface with Alexa. Products built using AVS have access to Alexa's growing list of capabilities including all of the Alexa Skills. AVS provides cloud-based automatic speech recognition (ASR) and natural language understanding (NLU). There are no fees for companies looking to integrate Alexa into their products by using AVS. The Alexa app can tell the time, deliver a weather report, or provide a daily sports and news summary from NPR, CNN, the Associated Press, and more. The department of Computing and Information System wants to develop a Bengali Alexa by Python who can understand the Bengali voice and will response according to the query. Now, clarify all the following tasks according to this scenario.

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

Total Marks: 35

- **Subtask 1: [Easy level tasks, 11 marks]**

- a) Draw a software process model which will help will you Alexa development by Python language. [6]
- b) Make a relationship schema between hardware and software to implement the Alexa by Python. [5]

- **Subtask 2: [Advanced level tasks, 14 marks]**
 - a) Describe the software testing methods that will be used in Alexa development when some errors occurred. [7]
 - b) Which testing methods is best for your development model? [7]

- **Subtask 3: [Technical tasks, 10 marks]**
 - a) Now create a video (maximum length 3 mins) where you will be performing your testing along with the working procedure of Alexa. In the starting of the demonstration, pronounce your ID and name loudly. Upload the video in google drive along with necessary code and attach the link in this document. [10]

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 supplementary files are needed.****
- ❖ **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.