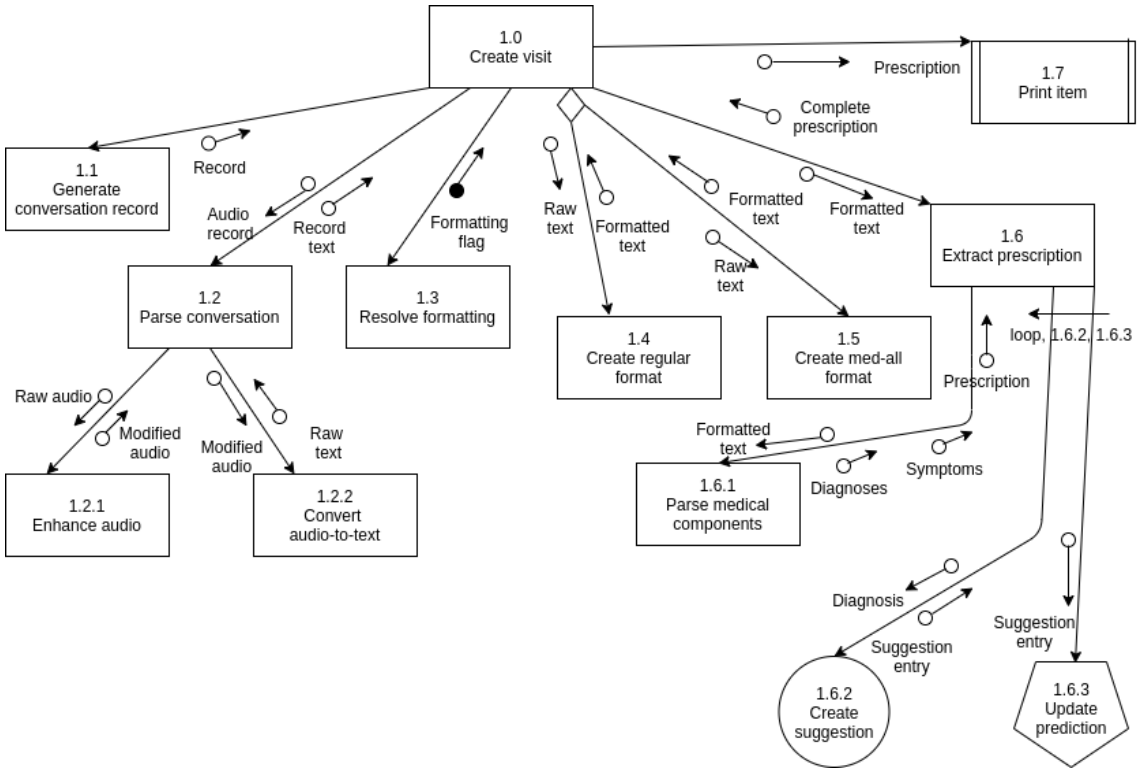
Structure Chart

1. Modern-EHR is a healthcare program that generates patients' visits and prescriptions based on conversation recording. Create visit module starts by calling upon the Generate conversation record module to prepare a doctor-patient conversation record. It is then sent to a Parse conversation module which returns a text description of doctor-patient conversation to Create visit module. In order to generate text, Parse conversation module first sends raw audio data to Enhance audio module and receives a noise-reduced modified version. This is then passed onto Convert audio-to-text module which returns the raw text data. After receiving this text data, Create visit module receives a formatting flag from Resolve formatting module and based on this decides whether to use Create regular format or Create med-all format module. Create regular format returns a simply formatted text file using a generic formatter, whereas Create med-all format returns a specially formatted file using standard healthcare templates. This text file is passed onto the Extract prescription module. First it receives the extracted diagnoses, symptoms and prescription information from Parse medical components module. Next for each diagnosis, Create suggestion module which is an on-page connector is called to create a suggestion entry and then Update prediction module which is an off-page connector is called to update the prediction model for given suggestion entry. Finally Extract prescription module returns the complete prescription to Create visit module. Create visit module uses Print item library module to print the given prescription.

Draw a structure chart based on the above information. (8 marks)

Solution:



2. “HomeStar” is a home automation system to manage, operate and maintain household devices. Upon receiving the command “Prepare workspace”, Prepare HomeStar module is initiated. First, Generate parameters module is given a day/night status and it returns the parameter details for the status as well as an optimization control flag for system optimization to be carried out later. Prepare HomeStar sends the parameter details to Prepare batch module and receives a list of activated devices in return. In order to prepare all connected target devices, Prepare batch module fetches a list of target devices from Get devices module by providing the parameters. For each device, Prepare batch module first calls upon Get current status library module by providing the device id and in return receives whether the device is currently activated or not. If the device is not active, Activate device module is triggered using device id and parameter mapping. Otherwise Update device state module is triggered with similar information and the target device is updated with given parameters. After each device is activated/updated, Generate activation entry module creates formatted specification and returns an entry to Prepare batch. After all target devices are activated/updated, Prepare batch module sends the activated device list to Prepare HomeStar. Finally Prepare HomeStar initiates the Optimize system module which is an off-page connector and Initiate emergency alert module which is an on-page connector.

Draw a structure chart based on the above information. (8 marks)

Solution: