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Personal Assistance forSenior CitizensWhoAreSelf-Reliant

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Abstract:
Tracking the health of a person and proper medication improves theirlife time. Studies suggest the most of the deaths of the elderly peoplehave occurred during the night when the person is asleep. A Caretakercannot assist a person all the time. This work proposes a personalassistant for an elderly people or a patient. The personal assistants canprovidein-homerespitecare,allowingfamilymembersorothercaretakers to take a temporary break. The main objective of this workistohelpseniorsmaintaintheirqualityoflifeathomeandtokeepthemlivingtheirlivestheirway,aswellastolightenth eloadoffull-timeorfamilycaretaker.Thisprojectproposesanaffordablepersonalassistancedeviceforhealthmonitoringofelderlyp eopleusingdifferent sensors which can measure pulse rate, position of elderly.Therefore, the doctor can identify the abnormal values easily and canattend the patient if the device is used in the hospital. Proper intake ofmedicine at correct time is indicated by the display on OLED screenandanalertisproducedbybuzzer.

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I. Introduction:

Givingconsiderationtootherscanbedistressingandcanprobably upload to despondency and proper disorder. Studies haveexhibitedthatround16%ofparentalfiguresrecordtheirwellbeinghasintensifiedduetothefacttheybecameguardians.Providingcaremightalsoresultinmorebudgetary weights;roughly 40%of guardianscollect new financial costs diagnosed with administrations, items, andsporting activities. One gauge expresses that 26% of parental figuresspendround10%oftheirmonthtomonthpayonsupplyingcarecosts.Fig.1. Shows the block diagram of the Personal Assistance device.Personal assistance device is a handy device which provides a way forimproving the health care services. This device tracks the pulse rateusingpulsesensorandthemotionofthepersonistrackedbyaccelerometerandtheirrespectivereadingsaredisplayedinthemobileapplication. IOT pulse sensor and accelerometer can be connected tocommunicateandtransferinformationbetweenpatientanddoctor.Thissystem can assist the elderly with health check-ups.So, doctors or caretakers can follow the health condition of the elderly. Moreover, due tothe functional and physical limitations the elderly may not be able toinform anything to anyone when they feel sick, so just by pressing apush button the information can be passed to the doctor or caretaker.Personal assistants can be used to supplement the care of a familymemberorothercaretakerbyfulfillingarequiredtask.Personalassistants deliver care and companionship when you can't be there, orwhenyousimplyneedahand.

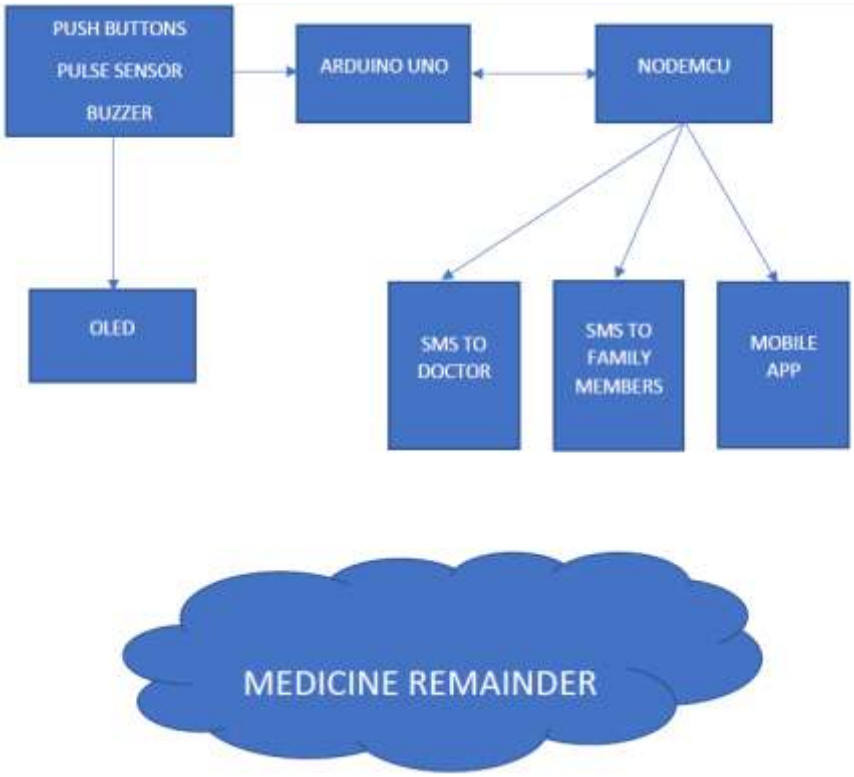


Fig.1.BLOCKDIAGRAMPERSONALASSISTANCEDEVICE

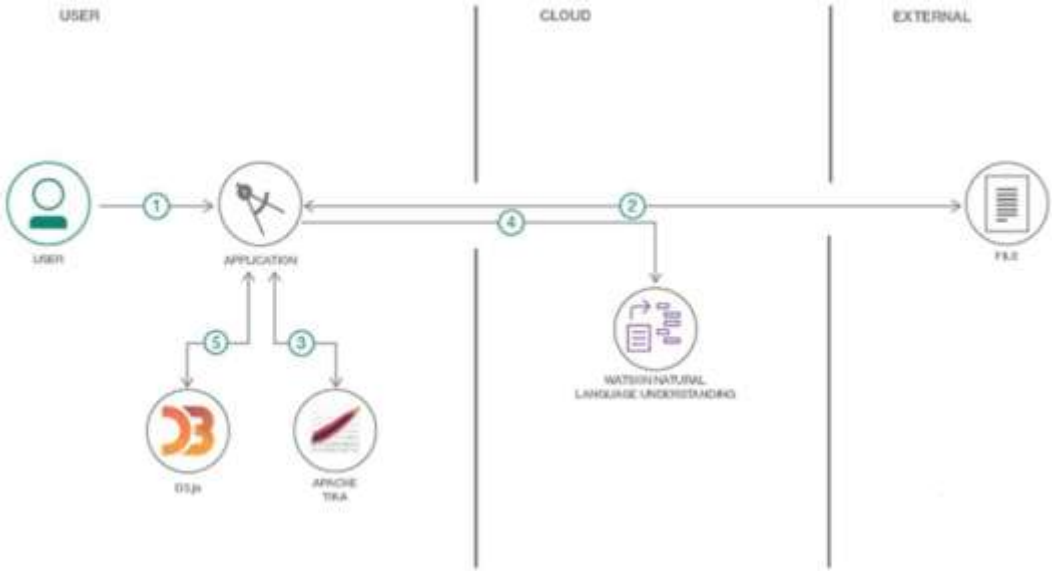
II. EXISTINGPROBLEM:

S.NO	PROJECT	METHODOLOGY	LIMITATIONS
1	TheAutonomouspilldispenser	Androidappsendssignals to deviceviaBluetooth. Patientneeds toflip the unit so thatone pill getstrappedintipofthecone andusingvibratoritgets dispensed	Elderlypeoplefindthis difficult to flipthe device and lesslikelytouseandroidphone
2	AutomaticPillDispenser	Makes use of theconceptofrotatingcompartments incircular step wisemotion usingsteppermotorwhichisusedtostore the pills. Notification onsmartphone is provided	Smartphone s arelesslikelyusedbyelderlypeople.
3	PillDispenserwithalarmViaSmartphonenotification	Theyhaveusedtheavailabletechnology to sendnotification on thesmartphoneusinginstapushapplication. Afterreceiving thenotification userneeds to press thedispenser button whichislocatedatpilldispenserunit.	Smartphonerarelyused by elderlypatients. Cannotusedbyblindpeople,asitneed to press thebutton ondispensingunit.
4	TimedMedicineDispenser(Product)	Givesnotificationaboutmedication.It has built in alarmsystem.	In dispenser unit,thepillsneedtobepreseparated firstin order to getcorrectdosage. Cannot be used bydeafperson.
5	MedicationReminderwithMedicine Dispenser	Prescription isscannedusingimageprocessing.Raspberry pi B+moduleisused. No manual settingof dosage ofmedicineisneeded.Assystemissetautomatically canbe used by anyoneincludingdisabled peopleaswell.	Pi camera giveserror sometimesand need toreboottthe processor.

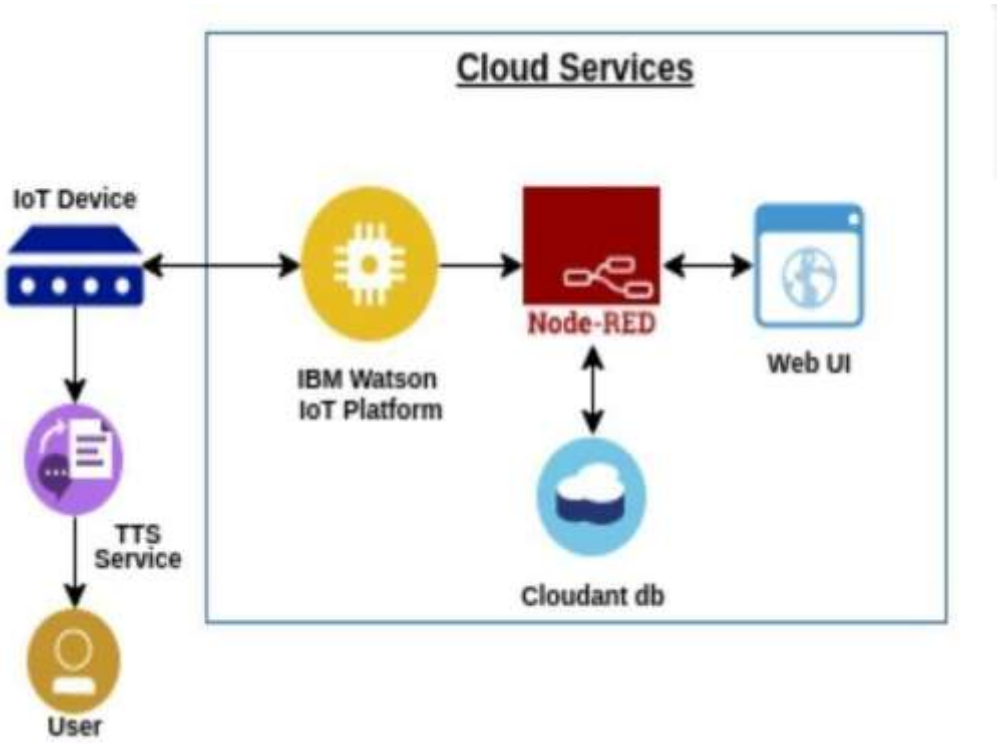
III. PROPOSEDSOLUTION:

S.No.	Parameter	Description
1.	**Problem Statement (Problem to besolved)**	Elderly people sometimes tend toforget totaketheirmedicineatthecorrecttime,ormightforgetwhichmedicinetheyar esupposed to take at that particular time. Thismakes it difficult for the doctors/caretakers tomonitorthepatientsproperlyaroundtheclock,whichleadstoinadequatetrea tmentsbeing providedtotheelderly patients,andcouldresultincasualties.
2.	**Idea/Solutiondescription**	To design a medicine reminder system, whichis an application built for the user/caretaker,whichenablesthemtosetthedesiredtimeandmedicine.Wheni tistimetotakethemedicine,the web application will send the name of theIoTDevicethroughtheIBMIoTPlatformand notifythemusingvoicecommandsusingText-to-Speechconversion.
3.	**Novelty/Uniqueness**	Theproposedmodelcontinuouslymonitorsthe elderly patients and produces reports ontheirmedicineintakedata, whilealsousingthisavailabledatatoalerttheuserusingVoiceCommands, ensuringanefficientreminder method.
4.	**SocialImpact/CustomerSatisfaction**	Encouragespropermedicineintakefortheelderly users, thus ensuring them a goodandahealthylife.
5.	**BusinessModel(RevenueModel)**	The low-cost requirement for designing thisproposed model makes it more reliable anduserfriendly.Thismakesthemodelmore practical for widespread use in hospitals andhomesforefficientmedicineintake.
6.	**ScalabilityoftheSolution**	WithefficientusageofIBMcloud,thisproposedmodelwillbeabletohandleala rgenumberofuserdata.Thismakesahugenumberofuserstoeasilyaccessande fficientlyuseit.

IV. DATAFLOWDIAGRAM:



V. TechnicalArchitecture:



VI. Conclusion:

The literature that was selected for this review highlights theextent of the work that has been undertaken in this field. Much of thework has focused on understanding the problems that older peopleexperience in accessing and using care services, which has culminatedindiverseeffortstoovercometheproblems.Therehasbeensignificantdevelopmentinhealthandsocialcarepolicy,however,thatissupportive and facilitative of the integration of services that olderpeopleuse.Themajorityofattemptstointegratehealthandsocialcareservices take the form of modifications to what already exists and thedevelopment of ways to enable older people to negotiate what alreadyexists, rather than radical change to the whole system. This may be inthe form of making linkages across the boundaries that are inherent inthe system, making linkages between the hierarchies that best healthand social care organizations, and facilitating improved and effectivecommunication between organizations and the staff that work in them.Theseapproachesenhancetheconnectivitybetweenthedifferentpartsof health and social care and are in the main small and incrementalchanges.

There has, however, been little work concerned with integrationacrossthewholecontinuumofcare.Inaddition,lessattentionhasbeengiven to all the services that older people require to live fulfilled andindependent lives. For example, integration across health, social care,housing and transport equally affect the way that older people live, yettheseservicestendtooperateinparallelratherthaninpartnershipwitheachother.Presumablythelackofattentiontowholesystemchangeisduetoneedforlongtermcommitmentthatthisrequires.TheexperiencefromDenmarkindicatesthatgivencommitment,investmentandnationalleadership,system-wideintegrationispossible. In countries, such as Britain, where these policies are largelyshorttermandconsequentlysubjecttochange,itisdifficulttoevaluatetheimpactthattheyarehaving.Thishighlightstheneedforlongitudinal studies in this area that both inform and are informed bydevelopingpolicy.

It is clear that care organizations are changing in response tonational and local policy, and, at the same time to the needs of serviceusers.Consequently,therearemultiplechangestakingplaceinanycareorganization at the same time. At one level of analysis this may appeartobeinresponsetoclearobjectivessetbygovernmentdepartmentsandto be well coordinated. At another level of analysis, however, thechanges that are taking place are chaotic and unplanned. One outcomeofthissituationhasbeenthedevelopmentofaraftofmezzoandmicrostrategiesthataimtointegratethesystems,servicesandtheoperationalprocesses within care organizations. There has been much effort

putintodescribingtheimpactthatthesedevelopmentshavehadonchangingpracticeyettherehasbeenlittleeffortgivento systematicallyinvestigating the impact that these changes are having on the wholesystem of care on patient and career outcomes. This points to the needfor large, system-wide studies that link all three levels of strategytogetherinaway,whichcanusefullyandconstructivelyinformpeopleworkingtowardschangeacross thewholesystemofcare.

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