ELSEVIER

Scopus

doi

Journal of Vibration Engineering

ISSN:1004-4523

Registered

- SCOPUS
- GOOGLE SCHOLAR
- DIGITAL OBJECT IDENTIFIER (DOI)
- IMPACT FACTOR 6.1

Our Website
www.jove.science

WorkPrism:AWorkCompliancesystem

Prof.DevyaniBonde
ComputerEngineering
MarathwadaMitramandal'sInstituteof Technology
Pune,India
devyani.bonde@mmit.edu.in

RohanRaut
ComputerEngineering
MarathwadaMitramandal'sInstituteof Technology
Pune,India
rohan.raut@mmit.edu.in

SatyenPatil
ComputerEngineering
MarathwadaMitramandal'sInstituteof Technology
Pune,India
satyen.patil@mmit.edu.in

RutujaShingate
ComputerEngineering
EngineeringMarathwadaMitramandal'sInstituteof Technology
Pune,India
rutuja.shingate@mmit.edu.in

MuazMursal
Computer
MarathwadaMitramandal'sInstituteof Technology
Pune,India
muaz.mursal@mmit.edu.in

Abstract—
Inorganizationsandcolleges,thereisahugeflow of a variety of tasks or activities which becomesdifficultforuserstomanagethetaskandcompleteitontime.Manytimesuseralsoforgetstocompleteacertain task from a given set of tasks. As a result, this studyoutlinesthecreationofanautomatedtaskmanagementsystem for businesses and universities that will tracktasks and notify users when they need to be finished bya certain date. There are many such systems availablein the market but they are not cost-effective and lackwith some of the major functionalities like monitoringtasksusinginteractivedashboards.Animportantfeatureofthisproposedsystemisitsuser-friendlydesignwhichhelpsuserstonavigatethroughtheapplicationeasily.Alsothesystemisgenericandcanbefurther used for project management, colleges, Schoolsand Organizations. Users can also interact with thedifficulties while completing the task to the assignerusing a comment section. The system admin maintainsadatabasesystem,whichcanaddtheuserstothesystem and can assign roles to the user. This systemhelpstomaintaintheoverallworkflowoftheorganization.

Keywords- work compliance, alerts, monitoring Task, AssignTask.

INTRODUCTION

Inaworkenvironment,peoplehavemultipletasksassignedtothem.Creatingato-dolist,settingupgoalsandpriorities,monitoringtheuseoftimehelpstoimproveproductivityresultinginhigherworkefficiencyandorganizationgrowth.Aparticulartaskwhichlooksextremelydifficult,canbemadesimplebyeffectiveplanning and job assignment.A good task managementprovidesthesefeaturesandhelpsinmaintainingtheworkflow of the organization. Even the time managementexpertsrecommendtaskpriorizationbasedontheimportance of the task and its deadline which helps to avoidanyissue.

We introduce WorkPrism- A work compliance system .Thissystemwillprovideaplatformforalltheuserswithinanorganizationtocommunicateandexecutevarioustasks.The project proivdes an online platform to acccomplishday to day tasks .The users can assign tasks to the facultyworkingunderthemandperiodicallysharethedetailsregarding the tasks with the faculty. The system easilyassigns tasks so as to avoid all the time-consuming andunnecessary meetings.The management of assignment oftaskiseasyfrombothends.Theusershigherupthehierarchyaretheprivilegedusers whosetdeadlines,keepatrackofthecompleted/incompletedtasks.Thesystemdelivers the information about the assigned tasks to theusers.The admin can add users into the system and canassign them roles. Regular users are not permitted to seethe administrative tasks. WorkPrism with its user friendlyarchitectureenablesuserstoorganizeandprioritizeprojectsefficientlyand withflexibility.

LITERATUREREVIEW

[1] **Automated Management System using AnalyticalHierarchyProcess**,bySonyaMeitarice,MumtazBegum Peer Mustafa, DedekOktaAndi. In order tocontinuallymonitortheworkperformanceofuniversity students,thisresearchdescribestheresearchand development of an automated task managementsystem that uses Analytical Hierarchy Process (AHP)measurement.Thenextmethodologywasusedtoaccomplish the goal of this study. The research firstfindsappropriateindicatorsofineffectivetimemanagement, the best time management strategies forcollegestudents,andanappropriateapproachforcreatingthesuggestedsystem.

[2] **AnInteractiveDashboardforMonitoringthespreadofCOVID-19inSudan**,byAlaaM.O.AbdelsamadAzzaZ.Karrar.Inthispaperaninteractivedashboardwascreatedinthisstudy totrackthe COVID-19 situation in Sudan. This paper tellsabouttheinteractivedashboardcreatedtomonitorthe COVID-19data.Itbecame easyforpeopleto trackthesituationandmakedecisionsbasedonit.Tableauwasusedtoconstructthedashboard(thepublicversion).Makingdecisions aboutthe spreadofCOVID-19 in

Sudanrequireshavingaccesstokeyinformation,whichthecreateddashboardandvisualanalysis offer.

[3] **Survey Paper: Framework of REST APIs,**by SujanYM,DrShashidharaHR,Dr.RohiniNagapadma.Inadministrative setup, discussions are a remarkable conceptto represent complex conversations between a consumerandoneormoreadministrations.TheRESTbuilding approach forces the characteristics of clients, servers, andtheir relationships in REST structures, which significantlyinfluences conversations in such frameworks. REST APIare mostly utilised in cloud computing, the Internet ofThings,andmicroservices,amongotherareas.Representationalstatetransfer(REST)isasortofsoftwarearchitecturethatisusedinwebservicesandprovidesmoreflexibility. RESTcontrolshowtheAPIappears.

[4] **OnlineTaskManagementSystem(OTMS),**byGirishmaHedaoo,PriyankaThoke,RakshaTabhane,ShubhamMeshram, SwapnilKumbhalkar, Prof. MukeshBarapatre.Inthispaper,theSystemwasdevelopedto managetheon-going activities in the college. The project offers an onlineplatformtocarryoutroutinedepartmentaltasksanddeliverinformationabouttheworktoadesignateduser.Theuser-friendlyarchitectureoftheproposedsystemhastheimportant advantage of facilitating easy online interactionand job completion between the administrator and user. Adatabase administrator is in charge of upkeep and systemperformance. The system may be controlled by the admin.Usersare notauthenticatedtosee administrative tasks.

[5] **AStudy onTaskManagementSystem,**byJyothiNS,AParkavi. In this paper, a study on task management systemis presented. Every project or event has a lot of activities,tasks,deadlines,andpersonnelbudgets.Theproject'sexecution strategy and the order in which the activities arecarriedoutaffectwhetheritwillsucceedorfail,regardlessof how big or little the project is. It takes a lot of ability toaccomplish this well, but the time and energy invested inlearning excellent project management techniques can payoff greatly and support the completion of projects on timeandwithintheconstraintsofavailableresources.Theabilitytoefficientlyplan,organise,andallocatetasksmakesitstraightforwardtoguaranteetheproject'ssuccess.This is where the Eisenhower decision matrix is useful.Teams can easily communicate and define tasks using the"Eisenhower matrix" with the aid of task matrixes. Thissuggested solution assists the project management teamandotherteammembers in organisingtasksefficiently.

PROPOSEDSYSTEM

OurProposedSystemisaWebapplicationandanAndroidapplication.Itisanapplicationwhichhelpsanorganizationmaintain the work flow by assigning tasks, Monitoringassigned tasked which helps in the smooth functioning ofthe organization.

a.SystemArchitecture

The major components of our application are shown inFig.1

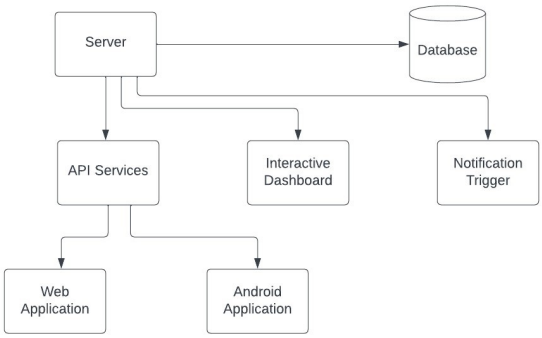

Fig.1.SystemArchitecture

The system has a client-server architecture, where userrequest a web-page to the server and server sends the dataorfileasaresponsebackto theuser.Alltheresourcesandservices are managed by the server. The database is storedontheservertoservethedatatotheusersthroughapplicationswhichmakethe applicationdynamic.

The RESTFUL API's are implemented and kept on servertoservethedatafromdatabasetowebandandroidapplications.Theuserhastocommunicatewiththedatabasethrough API's,sothereisnodirectcommunication between user and database. The data canbe fetched and sent to the database using the GET andPOSTmethodofAPI's.

The Interactive Dashboard helps to monitor all the taskflowin anorganizationorcollege.TheDashboardgetsthedatafromdatabaseandallowsausertofilterandvisualize/analyzethetaskstatusanduserperformance.

The Notification Trigger is a service which sends alertemailsregardingthetasksanditsdeadlinetotheuserusing SMTP protocol. This will help user to complete its taskbeforedeadline.

c. b.AdditionalFeatures

Aftergoingthroughvarioussimilarprojects,werealizedthatmanyprojectsaremissingsomefeatureswhich can help to make the application more engaging,user friendly and improve the user experience. Followingaresomeadditionalfeaturesofourapplication:

- The application is made generic which can beused for project management, task managementor can be used in organization to manage theirwork flow.
- Thesystemcangeneratereportsoftheworkgoing-ontheorganizationswhichhelpstomonitortheperformanceandgrowthoftheorganization.
- A Responsive Application that will deliver anexcellentuserexperienceonMobile Devices.

MATHEMATICALMODEL

Themathematicalrepresentationoftheproposedsystemfocuseso nthe functionof assigning taskstouser.

SupposeEmployeeZwantstoassignatask.

E-SetofalltheemployeestowhomZcanassigntasksE={E1,E2…….,En}

Let J denote the task to be assigned

J={T,D}(T-Task,D-Deadline)

EJ-Setofallcurrentlyassignedtasksto Ei

eg:E1J-setofallcurrentlyassignedtaskstoemployeeE1-{E1J1,E1J2,…..E1Jn}

Let A denote "Assign the task"

function,A:Z*J*E*EJ

Thus, employee Z assigns task J to an employee from set Eaftercheckingthe taskscurrently

assignedtothatemployee(Ei)fromsetofallcurrentlyassignedtasks(EiJ)

CONCLUSION

WeintroduceWorkPrism– Aworkcompliancesystemwhichhelpsusmanagetheworkflowof theorganization.Theadministration,user,andtaskmanagementprocessesareautomatedusingtheWorkComplianceSystem.Thetopauthorities are monitoring the work. The initiative offers anonline workspace for a college department's daily tasks. Thesuggestedprogramwillfacilitatecommunicationbetweenacademicsandhigherauthorities.Thesystemdistributesassignments quicklyinordertopreventallthetime-consumingmeetings thar are pointless. Task management is simple onbothends.The department'sheadassignsthedutytothefaculty.Theusersofthissoftwarecanassigntasks,sendmessages, send notifications and view notifications. Throughthis work, we have emphasized the project's architecture. Thegoalofthisprojectistoprovideanefficientworkmanagementsysteminanorganization.

ACKNOWLEDGMENT

In the accomplishment of this project successfully, manypeople have extended a helping hand, we would like to showour deep appreciation for them and we are utilizing this timetothankthepeoplewhohavebeenconcernedwiththeproject.I wouldliketo thankourPrincipal,Dr.R.V.Bortake,andourHODProf.Subhash G.Rathodforproviding uswiththegolden opportunity to work on this project. Their suggestionsandinstructionshaveservedasthemajorcontributiontowardsthecompletionofthisproject.Wewouldalsoliketothankourguide,Prof.S.G.Rathod,forhisvaluablesupportandguidance throughout the completion of our project. We wouldalsoliketothankourclassmateswhohavehelpeduswiththeirvaluable suggestions and support which has been very helpfulin thecompletionofthisproject.

REFERENCES

[1] Sonya Meitarice, Mmtaz Begum Peer Mustafa,DedekOktaAndi"AutomatedTaskManagementsystem usinganalyticalhierarchyprocess",.

[2] GirishmaHedaoo,PriyankaThoke,RakshaTabhane,Shubham,Meshram,SwapnilKumbhalkar,Prof. MukeshBarapatre"OnlineTaskManagementsystem(OTMS)",S>B>JainInstituteoftechnology,Nagpur,IREJournalsVolume2Issue5.

[3] JyothiNS,AParkavi"AstudyonTaskManagement system" , M S Ramaiah Institute oftechnology,Bangolore.

[4] SujanYM,Dr.ShashidharaHR,Dr.RohiniNagapadma "Survey Paper:Framework of RESTAPIs"The Natoional Instituteof technology,Mysuru,Karnataka,India.

[5] Alaa M.O. Abdelsamad ,AzzaZ.Karrar " AnInteractive Dashboard for Monitoring the spreadofCOVID-19inSudan"UniversityofKhartoum,Sudan,2020.

[6] B.D.Wisseletal.,"AnInteractiveOnlineDashboard forTrackingCOVID-19inU.S.Counties,Cities,andStatesinRealTime,"J .Am.Med. Inform. Assoc., vol. 0, no. 0, pp. 1-6, 2020,doi:10.1093/jamia/ocaa071.

[7] SMSohan,FrankMaurer,CraigAnslow,Martin P. Robilard "A Study of the effectivenessof usage examples in REST API documentation"2017IEEESymposiumonVisualLanguagesandHuman-Centric Computing (VL/HCC).

[8] M. Bernasconi, C. Choirat, andR.Seri, "Theanalytichierarchyprocessandthetheoryofmeasurement," Manage. Sci., Vol. 56, no. 4, pp.699–711,2010.DOI:10.1287/mnsc.1090.1123.

[9] D.A.Hillson,"UsingaRiskBreakdownStructureinprojectmanagement",JournalOfFacilities Management, vol. 2, no. 1, pp. 85-97,2013.

[10] S.McKenna, "Organisational ComplexityandPerceptionsofTask",TaskManagement:AnInternational Journal, vol. 3, no. 2, pp. 53-64,2013.

[11] GabrielChen,RickWanner,"SecureEmailTransmissionProtocols-ANewArchitectureDesign",2022.

[12] H. Florez and S. Singh, "Online dashboard anddata analysis approach for assessing COVID-19case and death data," FlOOOResearch, vol. 9, p.570,2020,doi:10.12688/f1000research.24164.1.

[13] Tableau Public, "Data Visualization Software |TableauPublic."2020,[Online].Available:https://public.tableau.com/en-us/s/.

[14] AndroidStudio2DevelopmentEssentials,BookbyNeilSmyth.

[15] AndyNeumann,NunoLaranjeiro,JorgeBernardino“AnAnalysisofPublic RESTWebServiceAPIs”.

[16] S.Few,InformationDashboardDesign:The EffectiveVisualComunicationofData. O’Reilly Media,2006.