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Health Data Share Service System using REST

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----------**ABSTARCT**----------
As the technology advanced still we are facing problem in health issues. Mainlywe are facing difficulties in finding a suitable hospital for particular diseases. We need some health tips to maintain our body healthy. We need aware all health treatments. We have to know where and when health camps conducted by government and other organization. We have to know what kind health facility available in hospitals. Weshould knowthe availability of doctors. Complaints from different sources (people, experts). So to solve all of these problems, in this paper, we are mentioning issues facing in the health industry and providing a solution to it.

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I. INTRODUCTION.

Everyone want to live healthier, to make our body healthy, we should know, what kind Treatment and where and how we can proceed according to procedure, in this paper, we are proposing one REST(**Representational state transfer**) full web service system to make health related data to available to all. This rest service takes the request and it will get the data from database and give response to the particular request. In this paper sections are existing system, proposing system, requirements, service design steps, and conclusion.In the existing system we are mentioning problems with the present situation and the system. In proposed system mentioning solution to overcome the problems we are facing regarding to health. In the requirement section we are mentioning REST technologies and related information, In service system steps design we are specifying how we can implement this system. In conclusion mention about my view and where else this kind service system can be used.

II. EXISTING SYSTEM

Currently we don't any specific system to know information about health issues like

i). which hospitals are providing what kind of services?

ii). Health related tips and suggestion.

iii). some hospitals provide free operation for specific diseases, so many people not aware of this information.

iv).Particular hospital information. Mainly in government hospitals complaints and suggestion system not available to all.

v)In emergency cases, what kind of treatment we can give the specific problem

vi)Ongoing health related research information,

vii) Conference information.

viii) Information about health campus conducted by government and social organizations, NGO's.

III. PROPOSING SYSTEM

To solve problem with the current system, we are proposing "**Health data share service system using REST "**In this system we store all data in database securely which has to be shared with everyone.The database only readable and adds some datapermissions. No one doesn't have permission to modify the data, only authorized person will maintain the data. Administrators take the data from various sources (from Gov. or hospitals) and load the data into database. Now we will create one **Restful** web service, it will take various requests and get the related information from the database, then give response according to the requirement. We should publish the request URL's in openly. So that from various sources(from web sites and mobile apps), we can access the data.

The request can be used in building mobile apps and different web site's. Anyonecan design web site or mobile application by using these restful web servicesmade available to users. From there people can benefit from this system.

IV. ARCHITECTURE

Web service –take the request and process the request and get the related information from the **Database**-storing all related information and their mappings.

Websites-this is the various portal design by different people, in this we are getting data from the database by sending a request to our REST web service.

Mobile application-this is the mobile portal, like a web site portal here also we are sending requests to the REST service and get the data, display. **End users:** common people and doctors and other are come under the end user. This people use web portal and mobile portal to know the information health related info like suggestions, health tips ,hospital information.

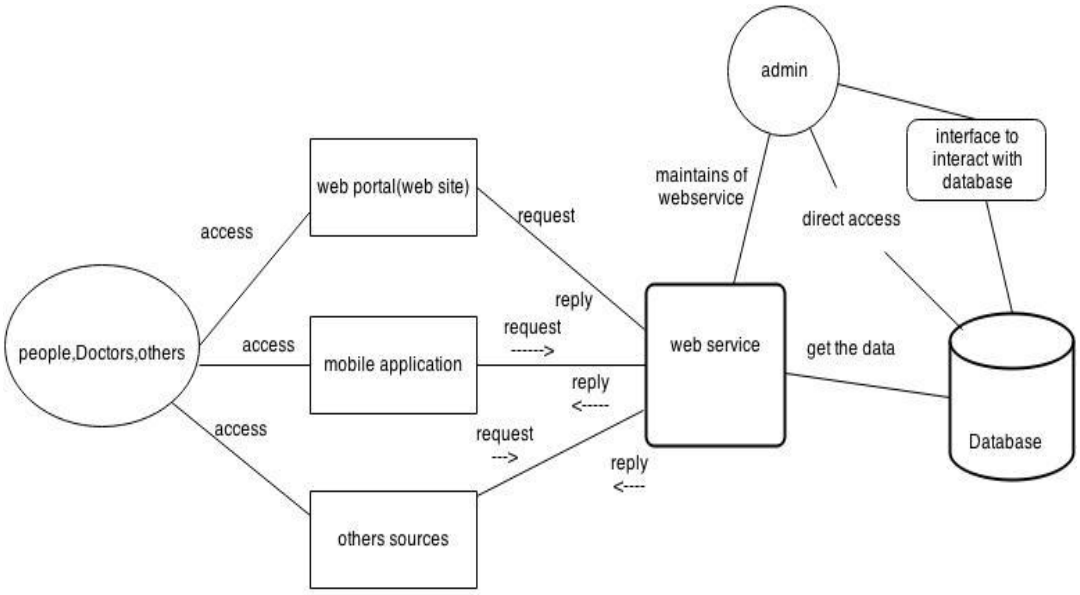

Figure: Architectureof propesed system.

V. DESIGN

5.1 Requirements:

To create web service we are following REST approach.

i. It is stateless.

ii. The rest is following URL based tree structure for identifying different resources.

iii. The rest can transfer the data, xml, JSON(java script object notation) or both.

iv. Less verbose

v .It works on http protocol based.

vi. It supports requests from cross platforms

REST is suitable in:

Point topoint service, to share public data

To create, store information in the database and access.

We can use ORM tool, like Hibernate.

Technology used to create this system java,jax-rs,apache cxf,,hibernate

5.2 Implementation procedure:

We list service categories we are going to provide and each category what kind of service method we are making available to all. Make each category service as interface and in that interface define a separate method for each service we want to provide. Then we will implement this service interface in a separate implementation class, from here by using ORM (hibernate) tool open session and do the operation with the database.

Request URL'sare like tree based structure

Request URL: -Http: healthRestService/hospitals/cancer/area=hyderabad/hosipitalinfo

The service should also take parameters if particular service needs those parameters.

After creating all resource URLs we make them available to all. By using these URL they can request from a web portal or mobile portal, others.

Example

i)Create different service interfaces.

HealthCampsInfoService

```
@Service
@Produces({MediaType.APPLICATION_XML, MediaType.APPLICATION_JSON})
Public interface HealthCampsInfoService {
   @Path ("/getHealthCampInformation")
   @GET
  @ElementClass(response = HealthCampInfoBean.class)
   HealthCampInfoBean findByHealthCampByArea (@QueryParam ("areaName") String uranium);
   @Path ("/getHealthCampsOrganizationsInfo")
   @GET
   @ElementClass(response = HealthCampOrganizationBean.class)
  HealthCampOrganizationBean getHealthCampOrganizationDetails ();
}
```

HealthSuggestionService

```
@Service
@Produces({MediaType.APPLICATION_XML, MediaType.APPLICATION_JSON})
public interface HealthSuggestionService {
   @Path ("/getDialyHealthTip")
   @GET
   String getDialyHealthTip ();
   @Path ("/getInfoByDisease")
   @GET
   @ElementClass(response = DiseaseBean.class)
   DiseaseBean getPrescriptionByDisease ();
}
```

ii): implement the each service interface in separate classes.

```
public class Health Camps Info Servcie Implementaion implements HealthCampsInfoService {
          @inject
         HealthCampOrganizationBean healthCampOrganizationBean;
          @Override
         Public HealthCampOrganizationBean getHealthCampOrganizationDetails () {
                  // Open a session with database and get the data and close the session
         healthCampOrganizationBean.setConductOrganizationName(HealthCampOrganizationDAo.getCondu
cOrganiZationName());
```

```
                    return healthCampOrganizationBean;
}
    @Override
    public HealthCampInfoBean findByHealthCampByArea (String areName){
      // pass the areaName to data base get the appropriate information.
HealthCampInfoBean.setCamp(HealthCampInfoDAO.findHealthCampByArea(areName));
        return HealthCampInfoBean;
    }
  }
```

iii) We need create POJO bean classs

```
public class HealthCampOrganizationBean {
  private String organizationName;
  private String address;
  private int id;
  private int contactNumber;
  public String getOrganizationName() {
    return organizationName;
  }
  public void setOrganizationName(String organizationName) {
    this.organizationName = organizationName;
  }
```

iv) to create database table use ORM (hibernate).

```
@Entity
@Table(name = "healthCamp_organization")
@PrimaryKeyJoinColumn(name = "id")
public class HealthCampOrganization{
  @Column(unique = true)
  private String userName;
  @Column
  private Long organizationId;
  @Column
  private String areaNowConduct;

  public String getUserName() {
    return userName;
  }
  public void setUserName(String userName) {
    this.userName = userName;
  }

  public Long getOrganizationId() {
    return organizationId;
  }
  public void setOrganizationId(Long organizationId) {
    this.organizationId = organizationId;
  }
}
```

v)create DAO class to interact with database

```
        @Component
public class HealthCampOrganizationDAO {


   public HealthCampOrganizationBean findOrganizationByArea(String area) {
      Criteria criteria = createCriteria();
      criteria.add(Restrictions.eq("area", area));
      criteria.setMaxResults(1);
      return (HealthCampOrganizationBean) criteria.uniqueResult();
   }

   public HealthCampOrganizationBean findById(Long id) {
      Criteria criteria = createCriteria();
      criteria.add(Restrictions.eq("id", id));
      criteria.setMaxResults(1);
      return (HealthCampOrganizationBean) criteria.uniqueResult();
   }
}
```

vi) configure in xml for what service interface bind which implementation class.
vii) publish the urls.

Examples.

- http:healthRestWebservice/helathCamps/gethealthCampsDetails?area=<parameter)hyderabad
- http:healthRestWebservice/HealthTips/getDilyHealthtip
- http:healthRestWebservice/HealthTips/getPrescription?diseaseName=<parameter.

5.43 Maintains of the web service

We can add new service category and new service methods to existing services. we will host the web serviceOn the server it runs every time.

6 Conclusions

If implemented, this kind of system, it will benefit manypeople in many ways. Same system we can implement various departments, In an education department system where we share admission details, book details, technical topicsrelated information. Inthe agricultural marketing systemwe can share market rates and availability of products. InTourism department system, place information, budget plans, various consultancy information. Finally, we can say this kind system helps the people, to get useful information and take advantage of technology to make life easy.

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BIOGRAPHIES

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