**Agile Software Project Management**

**Project Name**

**“ASKIN”**

**Group Members:**

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**Project Summary:**

In this digital world, our lives depend on technology, whether it is for eating food, traveling to your destination or getting education. We have taken a step ahead towards medical field. A system, which can predict the type of skin diseases by analyzing the pictures which user, provides. It will be also be able to predict whether it is malignant or benign. This would be done through web application and mobile application with different features of doctor and patients.

**High-level scope:**

* Login/signup for users (Patients/Doctors)
* Login for admin.
* Uploading picture.
* Prediction of disease through Keras/Tensorflow.
* Recommend respective domain doctors.
* Booking appointments.
* Online consultancy through video calls.
* Payment system through stripe.

**Detailed Scope:**

* **Login/Signup for users:** Basic functionality (a user can upload his/her picture and get results of predicted disease) is available free to everyone. However, in order to book appointment with the doctors registered in our system in particular category of disease and use online consultancy feature they would need to be paid users.

Both doctors and patients will login using his/her username and password while for registration they must fill the sign up form in which they have to provide their contact number, full name, date of birth, country and experience(only applicable to doctors)

* **Login for Admin:**

After logging in admin have a dashboard, which shows following details:

* Graphical representations of registered and active patient and doctors separately
* Total earnings, which are calculated from consultations and appointment fee
* Top five doctors, which are booked by patents in a month
* Notifications of booked appointments, with doctor and patient details.
* Graphical representation of canceled, booked and pending appointments
* Graphical representation of system usage (Web and mobile)
* Create, read, update or delete users by manage system feature
* Payment approval section (admin will approve all unsent payments to doctors)
* Dashboard is very customizable, means admin can filter features on page to view daily, weekly and monthly stats.
* **Uploading a picture:** A single high definition picture (not more than size of 10Mb in JPEG or PNG format) should be uploaded via phone or web application to help system predict the right disease in less time.
* **Prediction of disease:** Using convolutional neural network (CNN) algorithm, system will analyze the uploaded picture and show the predicted results
* **Recommend respective domain doctor**: After getting results from system, find my doctor option will be accessible to users so that they can find and choose a doctor from a list of respective disease specialist with their available slots provided by our system. These doctors are placed in the list on the basis of their experience which they have entered while signing up in our system
* **Booking appointments:** After selection of doctor, patient would need to pay the consultation/appointment fee, (They have to enter his/her account details and confirm time slot in payment form). After successful submission a notification will be sent to both patient and doctor. Incase payment was not received by service provider appointment will stay in pending status.
* **Online consultancy:** Doctors will consult their patients through video calling feature i.e. Mirror-Fly (a third party video and chat API). Each consultation shouldn’t exceed a duration of 30 minutes.
* **Payment system:** Doctors will receive their consultancy fee through our third party payment system within 24-48 hours in the account provided by them.

**Technology Stack:**

* **Web Application:**
* Node JS
* Express JS
* Python
* MySQL
* Tensorflow JS
* Keras
* **Mobile Application:**
* Android Studio
* Java
* Tensorflow Lite
* Keras/Tensorflow
* SQL-Lite
* **Third Party Integration:**
* Stripe
* Mirror Fly

**Assumptions:**

* Cost will vary in case of sudden changes in deadline.
* Warranty period will be active for two weeks from the day project is live.
* 7 Days will be allocated for UAT; bugs discovered during that period will be fixed without additional charges.
* Public holidays are excluded from total duration (in days) mentioned in proposal.
* In case of variation in cost of third party services, overall project cost may vary.
* If a patient wasn’t available during consultation time 50% fee will be deducted from total fee and if a doctor wasn’t available during consultation time 100% fee would be returned to patient
* 40% of each appointment booked by patients is considered as service charges and 60% will be transferred to their accounts within 24-48 hour t after a successful completion of appointment through stripe

**Number and kind of resources:**

* Project Manager
* UI/UX Designer
* Backend Developer
* SQA Engineer
* Database Developer

**Provision of HIPAA Compliance:**

**Privacy:**

The HIPAA Privacy Rule establishes national standards to protect individuals’ medical records and other personal health information and applies to health plans, health care clearinghouses, and those health care providers that conduct certain health care transactions electronically.  The Rule requires appropriate safeguards to protect the privacy of personal health information, and sets limits and conditions on the uses and disclosures that may be made of such information without patient authorization. The Rule also gives patient’s rights over their health information, including rights to examine and obtain a copy of their health records, and to request corrections

**Security:**

The HIPAA Security Rule establishes national standards to protect individuals’ electronic personal health information that is created, received, used, or maintained by a covered entity. The Security Rule requires appropriate administrative, physical and technical safeguards to ensure the confidentiality, integrity, and security of electronic protected health information.

**Breach Notifications:**

The HIPAA Breach Notification Rule, 45 CFR §§ 164.400-414, requires HIPAA covered entities and their business associates to provide notification following a breach of unsecured protected health information. Similar breach notification provisions implemented and enforced by the [Federal Trade Commission (FTC)](http://business.ftc.gov/privacy-and-security/health-privacy/health-breach-notification-rule), apply to vendors of personal health records and their third party service providers, pursuant to section 13407 of the HITECH Act.

**Features:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Features | Analysis | Design | Development | Testing | Deployment |
| Login/Signup(User) | 9 | 33 | 40 | 16 | 16 |
| Login(Admin) | 32 | 80 | 110 | 69 | 24 |
| Uploading Picture | 8 | 4 | 6 | 6 | 4 |
| Predictions | 6 | 3.5 | 5.5 | 18 | 3 |
| Recommendation | 22 | 42 | 26 | 22 | 7 |
| Book Appointment | 44 | 76 | 50 | 28 | 16 |
| Online consultancy | 28 | 26 | 49 | 45 | 21 |
| Payment System | 32 | 56 | 54 | 62 | 25 |

**Total Hours:** 1124 Hours

**Supporting Software:**

**For Web:**

* Google Chrome
* Opera
* Firefox
* Internet Explorer
* Safari

**For Mobile:**

* Android Version greater than 4.2.2(Jellybean)

**Project Risk:**

**Identification:**

The main risk of project is the predicting the right disease while the other main risk is loss of patient data

**Analyzing the risk:**

Let us suppose a client uploaded an image of his/her disease to predict the correct label but due to less accuracy on training and breach able security of system, it gives wrong output and risk of confidential data being hacked

**Evaluate:**

* Incorrect prediction of disease: 5/5 (Rating)
* For Securing Data: 4/5 (Rating)

**Treating the risk:**

Making libraries, which will encrypt data in the form of hashes and train the model for better results.

**Costing:**

**Salaries:**

|  |  |  |  |
| --- | --- | --- | --- |
| S.NO | Resources | Salary Per Month(PKR) | Salary Per Week(PKR) |
| 1 | Project Manager | 200,000 | 50,000 |
| 2 | Senior Backend Developer | 120,000 | 30,000 |
| 3 | Junior Backend Developer | 60,000 | 15,000 |
| 4 | Senior Frontend Developer | 80,000 | 20,000 |
| 5 | Junior Frontend Developer | 40,000 | 10,000 |
| 6 | SQA Engineer | 100,000 | 25,000 |
| 7 | Database Engineer | 80,000 | 20,000 |

**Resources Salaries**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| S. No | Resources | Working(Hours) | Working(Weeks) | Working(Month) | Total Salary(PKR) |
| 1 | Project Manager | 442.66 | 11.06 | 2.76 | 552,000 |
| 2 | Backend Developer(Senior) | 318.66 | 7.96 | 1.99 | 238,800 |
| 3 | Frontend Developer(Senior) | 214.66 | 5.36 | 1.34 | 107,200 |
| 4 | Database Engineer | 198 | 4.95 | 1.25 | 98,400 |
| 5 | SQA Engineer | 354.66 | 8.86 | 2.21 | 221,600 |

**Total Cost of Project:** 1,218,000

**Additional Cost:**

**Domain & Hosting:**

Cost for domain and hosting from AWS of $1-3/Month

**Google Developer’s ID:**

$25 for registering on play store

**Release Plan:**

|  |  |  |  |
| --- | --- | --- | --- |
| S. No | Feature | Start Date | End Date |
| 1 | Login/Signup(User) | 21st October 2019 | 12th November 2019 |
| 2 | Login Admin | 12th November 2019 | 21st January 2020 |
| 3 | Uploading Picture | 21st January 2020 | 27th January 2020 |
| 4 | Prediction | 27th January 2020 | 4th February 2020 |
| 5 | Recommendation | 4th February 2020 | 2nd March 2020 |
| 6 | Book Appointment | 2nd March 2020 | 24th March 2020 |
| 7 | Online Consultancy | 24th March 2020 | 28th April 2020 |
| 8 | Payment System | 28th April 2020 | 16th May 2020 |
| 9 | Final Deployment of Project | 16th May 2020 | 24th June 2020 |

**Effort Table:**

Following are the total efforts calculated in hours per resource:

|  |  |  |  |
| --- | --- | --- | --- |
| S.NO | Phases | Actions  (Person-Hourly) | Total Hours |
| **1** | **Analysis** |  | 182 |
|  | User Stories | 36 |  |
|  | Elaboration | 62 |  |
|  | Meeting | 31 |  |
|  | Brainstorming | 53 |  |
| **2** | **Design** |  | 309.5 |
|  | ERD | 148.5 |  |
|  | Wireframes | 73 |  |
|  | Design | 56 |  |
|  | Prototype | 32 |  |
| **3** | **Development** |  | 250.5 |
|  | Coding(API+FE) | 176 |  |
|  | Unit Test | 63 |  |
|  | Demo | 11.5 |  |
| **4** | **Testing** |  | 266 |
|  | Test Cases | 159 |  |
|  | Execution | 63 |  |
|  | Bug Reporting | 29 |  |
|  | Status | 15 |  |
| **5** | **Deployment** |  | 116 |
|  | Environment Ready | 62 |  |
|  | Go-Live Rehearsals | 33 |  |
|  | Go-Live | 21 |  |

**Sprints:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sprints** | **Actions/Activities Perform** | | **Time** |
| **Sprint 0** | **Tools Setup** | |  |
| **Sprint 1** | **User Stories** | **36** | **60** |
| **Elaboration** | **22** |
| **Meeting** | **2** |
| **Sprint 2** | **Elaboration** | **40** | **60** |
| **Brainstorming** | **18** |
| **Meeting** | **2** |
| **Sprint 3** | **Brainstorming** | **35** | **97** |
| **ERD** | **60** |
| **Meeting** | **2** |
| **Sprint 4** | **ERD** | **60** | **62** |
| **Meeting** | **2** |
| **Sprint 5** | **ERD** | **28.5** | **62** |
| **Wireframe** | **31.5** |
| **Meeting** | **2** |
| **Sprint 6** | **Wireframe** | **41.5** | **62** |
| **Design** | **18.5** |
| **Meeting** | **2** |
| **Sprint 7** | **Design** | **37.5** | **62** |
| **Prototype** | **22.5** |
| **Meeting** | **2** |
| **Sprint 8** | **Prototype** | **9.5** | **71.5** |
| **Coding(API+FE)** | **60** |
| **Meeting** | **2** |
| **Sprint 9** | **Coding(API+FE)** | **45** | **62** |
| **Unit Testing** | **12** |
| **Demo** | **3** |
| **Meeting** | **2** |
| **Sprint 10** | **Coding(API+FE)** | **42** | **62** |
| **Unit Testing** | **15** |
| **Demo** | **3** |
| **Meeting** | **2** |
| **Sprint 11** | **Coding(API+FE)** | **29** | **62** |
| **Unit Testing** | **28** |
| **Demo** | **3** |
| **Meeting** | **2** |
| **Sprint 12** | **Unit Testing** | **8** | **72.5** |
| **Demo** | **2.5** |
| **Test Cases** | **60** |
| **Meeting** | **2** |
| **Sprint 13** | **Test Cases** | **60** | **62** |
| **Meeting** | **2** |
| **Sprint 14** | **Test Cases** | **39** | **62** |
| **Execution** | **21** |
| **Meeting** | **2** |
| **Sprint 15** | **Execution** | **42** | **61** |
| **Bug Reporting** | **18** |
| **Meeting** | **1** |
| **Sprint 16** | **Bug Reporting** | **11** | **87** |
| **Status** | **15** |
| **Environment Ready** | **60** |
| **Meeting** | **1** |
| **Sprint 17** | **Environment Ready** | **2** | **57** |
| **Go-Live Rehearsal** | **33** |
| **Go-Live** | **21** |
| **Meeting** | **1** |
| **Sprint 18** | **Production Deployment** | **30** | **30** |

**Out of Scope:**

* If anything need to be added after finalizing agreement, Budget may vary
* 50% of project payment should be paid before starting the project and 50% payment should be paid after the final release
* System will not predict any disease other than skin diseases

Meeting Minutes

**Location:** Ovais’s House

**Date:** 20th October 2019

**Time:** 11:00 PM

## Attendance

* Laraib Gulzar
* Rameez Arif
* Arif Hussain
* Syed Ovais Akhtar

## Agenda Items

1. Detailed Scope
2. Features Detection

## Action Items

1. Detailed Scope: Change detailed scope and breakdown each and every task
2. Detect each and every feature

## Other Notes

Discuss what to do in next meeting

Meeting Minutes

**Location:** Ovais’s House

**Date:** 23rd October 2019

**Time:** 10:00 PM

## Attendance

* Laraib Gulzar
* Rameez Arif
* Arif Hussain
* Syed Ovais Akhtar

## Agenda Items

1. Apply Waterfall on each and every feature
2. Discussion of Effort Table

## Action Items

1. Apply waterfall on each and every feature and distribute each feature in phases i.e. Analysis, Design, Development, Testing & Deployment
2. Brainstorming on effort table

## Other Notes

Discuss what to do in next meeting

Meeting Minutes

**Location:** Ovais’s House

**Date:** 24th October 2019

**Time:** 10:00 PM from 23rd October 2019

## Attendance

* Laraib Gulzar
* Rameez Arif
* Arif Hussain
* Syed Ovais Akhtar

## Agenda Items

1. Effort Table
2. How many Resources Required

## Action Items

1. Completed Effort Table
2. Calculated resources i.e. Single Resource(Part Time)

## Other Notes

Discuss of calculating cost and total salaries

Meeting Minutes

**Location:** Ovais’s House

**Date:** 26th October 2019

**Time:** 1:30 AM till 27th Oct 8:00AM

## Attendance

* Laraib Gulzar
* Rameez Arif
* Arif Hussain
* Syed Ovais Akhtar

## Agenda Items

1. Cost Estimation
2. Time Estimation
3. Release Plan
4. Salaries
5. Road Map
6. Minutes Of Meeting

## Action Items

1. Calculated Complete Cost
2. Calculated Total Time per resource
3. Made Release Plan
4. Calculate Total Salaries
5. Made Road Map
6. Made Minutes of Meetings

## Other Notes

Discussed a lot for salaries and confused in calculating salary.