

DEPARTMENT OF PHARMACEUTICAL SCIENCES & TECHNOLOGY

MAHARAJA RANJIT SINGH PUNJAB TECHNICAL UNIVERSITY

ਮਹਾਰਾਜਾ ਰਣਜੀਤ ਸਿੰਘ ਪੰਜਾਬ ਟੈਕਨੀਕਲ ਯੂਨੀਵਰਸਿਟੀ, ਬਾਦਲ ਰੋਡ, ਬਠਿੰਡਾ

Dabwali/Badal Road, Bathinda -151001

(Established by Govt. of Punjab vide Punjab Act No. 5 of 2015)



Ref. No: MRSPTU PHARM

Date:

"Call for Quotation for Development of Android Based Mobile Application"

Sub: - Quotations for "Development of android based mobile application" for Dept. of Pharm. Science & Technology, MRSPTU, Bathinda under DST SERB project in the supervision of Dr. Ashish Baldi.

Dear Sir/Madam,

You are requested to quote the rates for the "Development of mobile application" mentioned as per Part II attached with this letter.

Various terms and condition for quotation are attached as Part I of attachment.

Specifications, Format of application and necessary enclosures to be added are attached as Part II.

The envelope must bear the word: -

"QUOTATION FOR "Development of android based Mobile Application for Dept. of Pharmaceutical Sciences & Technology (DST SERB) Enquiry No. As above dated due on dated"

IMPORTANT:-

In the absence of information as required under Part II, if an envelope is received & opened inadvertently, the university will not be responsible and the quotation may not be considered even if quoting the lowest rates.

The quotations duly completed should be in the name of Registrar and should reach the office of the **Dept. of Pharmaceutical Sciences & Technology (Dr. Ashish Baldi), Maharaja Ranjit Singh Punjab Technical University, Bathinda by 14/05/2021 up to 03:30 PM** and same shall be opened on **17/05/2021**.

Your representative may be present during the opening of the quotations.

HOD, 
Dept. of Pharm. Sci. & Tech.,
MRSPTU, Bathinda. 

"Specification for the development of Mobile Application"

Name of work: Development of android based mobile application for DST-SERB project related work

PART I

GENERAL TERMS AND CONDITION

- a) Principal Investigator reserves the right to add/delete/modify the specifications in order to achieve the desired objectives of the research project as funded by DST-SERB as per the technical need with mutual consent of the firm
- b) The firm will provide all source code/programs/language statements / commands to the PI upon satisfactory completion of this work.
- c) All intellectual property rights/technical rights/ ownerships of the above said work will be solely remain with PI as Indentor.
- d) The firm will sign a confidentiality agreement with reference to outcomes of this work and will strictly abide by the same. In case of any breach suitable legal action may be initiated against the firm.
- e) **Eligibility of the firm:**
Firm should provide supporting documents to establish eligibility as per following criteria:
 - i. The firm applying should provide satisfactory evidence, acceptable to the PI to show that he has efficient technology adequate capability, technical know-how and experience of development of mobile application- special Conditions of this quotation as detailed in Part-II,- special Conditions of this quotation.
 - ii. The form applying should have adequate financial stability and status to meet the obligations under the contract.
 - iii. The firm applying have at least completed from start to finish, in the last three financial years (i.e. current year and three previous financial years) at-least one single work i.e. development of mobile application and maintenance for a minimum value of 35% of advertised bid value of work.
 - iv. The firm should be registered as a company.
- f) **Details of Work**
On behalf of DST SERB project currently running under the Prof. Ashish Baldi as PI, MRSPTU invites the quotation for the work "Development of Mobile Application".
- g) **Specification of the Mobile Application**
The detailed specification of the mobile application is in Part II.
- h) **Warranty and Maintenance of Mobile Application.**
The mobile application will be under warranty period of 2 years after launching of the application.

i) **Security Deposit**

Security Deposit @10% of final cost which will be reimbursed on completion of maintenance/warranty period.

j) **Period of Completion**

Time period to complete the above said work is 5-months from date of award, in case of delay in input from the research team and or due to any technical reasons, the time can be extended mutually by PI and the firm.

k) **Progress Monitoring**

The firm applying will be required to give the PI, progress report of the work done. The program will be subject to alteration or modification at the direction of the PI, who may discuss such modifications or alterations as considered necessary.

l) **Training**

For smooth operation of mobile application proper training of its staff shall have to be provided at PI office. The rates will be F.O.R. MRSPTU, Bathinda

m) **Payment/Taxes**

- a. Rate of ST/VAT/GST if extra must be mentioned clearly. University will provide GST exemption certificate, as per approval of DSIR, Govt. of India, to levy GST @ 5% only.
- b. TDS, if any will be deducted as per Govt. Rules.
- c. In case you fail to deliver the task with-in the prescribed for such delivery, stipulated in the supply order, the delayed consignment will subject to will subject to 2% penalty per specification not completed per month or the part of month recoverable on the value of the task completed.

n) **Termination/Disputes**

- a. The registrar reserves the right to cancel the order without assigning any reasons. In case of any dispute decision of the vice chancellor shall be the final and binding on the both parties.
- b. All the disputes will be settled within the jurisdiction of the Head quarter of MRSPTU, Bathinda.

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PART II

Specifications of Mobile Application Development and Validation

1. **Development of reference image database on cloud server of reputed cloud providing firm.**

The reference database should be capable to store the high- and low-resolution images of approx. 30 (as fixed by PI) different species of spices/herbs (Main biological source and their biological adulterants).

Images for the same will be provided by the research team.

2. **Unique features Identification and Pattern Recognition**

Unique feature

Framework should be developed that should be able to identify the unique features of different species of spices/herbs. Unique feature will be provided by the research team on timely basis.

Pattern Recognition:

Developed framework should be able in pattern recognition form the different unique feature of the spices. Pattern recognition involves the application of various machine learning/ deep learning algorithm for image analysis containing the unique features of the spices/herbs.

3. **Setup for Image processing, recognition, retrieval of the images.**

This setup should consist of following features

a) **Pre-Processing of Images**

As the database has variable resolution images, the network requires a constant input dimensionality. So down sampling of the images to a fixed resolution will also be performed in this stage. In order to train the network, subtraction of images with the mean values of each RGB channel and cropping of the images will be performed, if required. The decreasing of the number of training samples, which help us to improve the generalization of the network model under various testing conditions, will be executed in this stage.

Down/Enhance --- Noise removal----Conditioning ----- Cropping

b) **Recognition of Images**

In this stage, use of machine learning / Deep Learning methods as appropriate for samples / standard recognition will be explored.

A type of machine learning / Deep Learning methods as appropriate should be employed for the image recognition. Selected methods as machine learning / Deep Learning as appropriate should consists of different stages such as Inclusion, training and testing/output stages.

Layer Analysis---Weight Decay--- Momentum--- Learning Rates

c) Retrieval of Images

In this stage, training of retrieval network will be performed along with retrieval loss. This stage will help us to retrieve the similarity between similar and dissimilar images and search for the appearance between similar images under the condition that images belong to the same category.

Fine tuning---Accuracy--- Precision---Validation

4. **Development of framework that can perform include all the activities mentioned in the point 2 of the specification.**

The performance of the proposed framework will be evaluated on the basis of the accuracy and precision of the image recognition by the proposed framework.

Pattern Recognition---Respective Unique features Identification--- Features Comparison with standard-- Decision

5. **Development of mobile application to be integrated with above developed framework**

Mobile application development should be consisting of following features:

- a) Mobile application should be compatible on android (Application Level 6.0 or above). Developed application should be compatible or should be available on the Google Play Store.
- b) Creating wire frame for each screens of the application on the advise of the research team.
- c) Graphic design for attractive lookout for the developed application.
- d) Easy user Flow for easy handling of developed application
- e) Developing Information architecture of entire application development.
- f) Providing the guidelines for development of coding for development of application.
- g) Integration of task described in Point 1-4 in the mobile application
- h) Coding of application should be done in compatible language.
- i) Programming interactions with the research team and pre-launching testing and debug of the developed application.

6. **Stage wise improvements or revisions in developed on time-to-time basis on the recommendation of the research team.**

7. **Maintenance and development support for 3 years from completion of above said work.**

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"FORMAT OF APPLICATION FORM & REQUIRED DOCUMENTS FOR QUOTATION"

	Name of item	Development of Mobile Application
	Name of Firm
Sr. No.	Description	Details & Page No. of related proofs attached
1.	Full Address	
	1. Head Office	
	2. Branch Office (if any)	
2.	Name of Contact person	
	1. Mobile No.	
	2. E Mail ID	
3.	Telephone Number(s)	
4.	Proof of Company Establishment	Attached (Y/N).....Pg no.....
5.	GST No.	Attached (Y/N).....Pg no.....
6.	PAN NO.: -	Attached (Y/N).....Pg no.....
	TAN NO.: -	
7.	Bank Name and address	
8.	Bank A/c No. and IFS Code	Attached (Y/N).....Pg no.....
9.	Proof of bidder having successfully delivered of similar goods/ items of value of 50% of the estimated value in the last three years.	Attached (Y/N).....Pg no.....
10.	Proof of Financial standing such as statement of bank account with sufficient balance	Attached (Y/N).....Pg no.....
11.	Warranty/Maintenance Period (Mention Clearly)	3 Years
12.	Cost quotation as per given format in sealed envelope	Attached (Y/N).....Pg no.....
13.	Any other document(s)	
	i. ii.	

Note:

- 1. Quotation in Separate Sealed envelope to be submitted as per Part II.**
- In case of any clarification, firm shall provide required documents/reply within given time.
- If any need arises to verify the scan copies from original, then the same will be produced by the firm before the opening of quotation which his quotation will be rejected.
- Page Number /Serial Number may be given to each and every page of Quote and other documents attached. Mention Page Number, Wherever the copy(ies) of the document (s) are attached.
- In case of non-fulfillment of any of the above information / document (s) Quote may be summarily rejected without giving any notice.

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"Format of Financial Quotation"

To be submitted in sealed ENVELOPE along with application form and other necessary documents"

Name of the Firm:

Address of the Firm:

Contact No:

E-mail:

S. No.	Description of the item / Task	Specifications	Amount Quoted
1.	Specification for the development of Mobile Application	As given in Call for Quotation	(In Rs)
		Tax if Any	(In Rs)
		Total Cost	(In Rs)

Disclaimer: I hereby agree to abide by the rules and regulation of the MRSPTU and terms / conditions of the above said work as given in the call for quotation.

Seal of the firm with sign of AUTHORIZED PERSON of the Firm.

Financial Quotation in Separate Sealed envelope as per Part II.

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