University Institute of Engineering, Chandigarh University
Department of Computer Science & Engineering
Phase I (Project Scope, Planning and Task Definition)

Date: 09/03/2022

Project Title:

Human Hand Tracking System("H2TS=Hatuus") Development Using Python

Project Team

Team Designation	Name	UID	Section
Lead	Ananya Sharma	20BCS3049	ON20BCS614/B
Member1	Magan Jyot Kaur	20BCS3041	ON20BCS614/B
Member2	Lokesh Choudhury	20BCS3033	ON20BCS614/B

Project Scope:

H2TS system is based on a futuristic technological approach which will make human and software interaction much more virtual and convenient without using hardware. The advanced feature which can be incorporated are voice command, touchless operations {which can be done through web cam using hand landmarks' detection (total hand landmarks detection=21)} which will help- in cost saving(Keyboard), less maintenance cost of hardware, enough distance from hardware equipment ultimately better eye care and many more technological advantages.

Project Planning and Task Definition:

T1) Research: H2TS project started from background study about this technology where we started to gather the knowledge about the developments already done in this field by other software developers. We got the really good guidance from internet to an extent to move ahead with this project in python.

T2) Web Cam operationalization: Web cam operations executed through coding in python.

T3) Hand Tracking Module Creation: In this stage the main task was to track the hand landmarks which are 20 specifically in numbers by creating a hand tracking file.

Now the stage comes where the previous file ("HTMF = Hand Tracking Module File") would be used to create for further specific features of H2TS system which are as follows-

T4) Virtual Volume Controller (VVC): With the use of previous file (HTMF) a virtual volume controller feature would be created through coding in python.

T5) Virtual Mouse Controller (VMC): With the use of previous file (HTMF) a virtual mouse controller feature would be created through coding in python.

T6) Virtual Game Controller (VGC): **With the use of previous file (HTMF) a virtual handle drive controller feature would be created through coding in python.**

T7) Virtual Calculator(VC): **With the use of previous file (HTMF) a virtual calculator feature would be created through coding in python.**

T8) Virtual Painter(VP): **With the use of previous file (HTMF) a virtual painter feature would be created through coding in python.**

T7) Virtual Assistant ("SAHVI = Software and Human Virtual Interaction"): **SAHVI is a virtual assistant for this programme which will assist the user for features' usages through voice command.**

Software Requirements:

- **Operating Environment: Windows 7+/Mac OS**
- **Platform: Python IDE / VS Code**

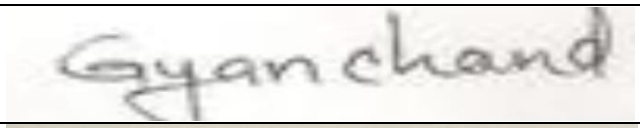
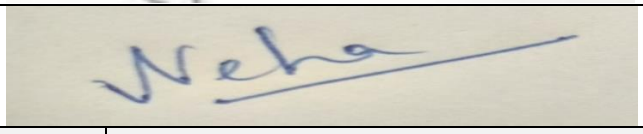
Hardware Requirements:

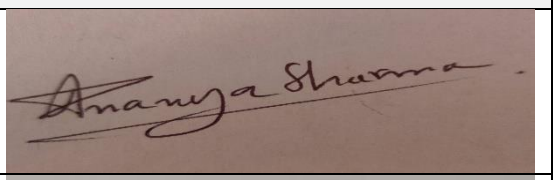
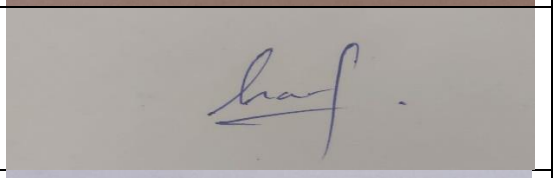
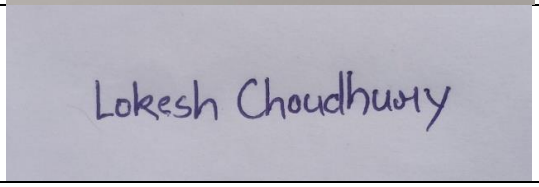
- **System which supports python and the required libraries**
- **Processor: Minimum 1GHz**
- **Hard Drive: 32GB+**
- **Decent Webcam**

Limitations:

- **Can't be used for long distance**
- **Brightly lit place is must**
- **Requires decent webcam**
- **Detection of more than one palm can result into ambiguous outcomes**

Project ID (If selected from project basket)										
Project Outcome (Tick the Column)	Patent		Journal Paper		S/W Project	✓ yes	H/W + S/W Project		Other	
Remark of Supervisor										
None.										

Name of Supervisor	**Mr. Gyan Chand Yadav ID - [E12247]**	**Signature**	
Name of Co-Supervisor	**Ms. Neha Sharma ID - [E12270]**	**Signature**	

S.No.	Name of the Students	Contact No.	Signature
1.	**Ananya Sharma**	**7018579126**	
2.	**Magan Jyot Kaur**	**9560382104**	
3.	**Lokesh Choudhury**	**7008165459**	

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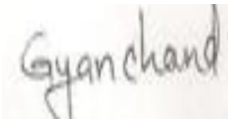

Mr. Gyan Chand Yadav
(Project Teacher)