

29/11/2022

# PROJECT REPORT



**L**OVELY  
**P**ROFESSIONAL  
**U**NIVERSITY

**SUBMITTED BY:**

HARMEET SINGH

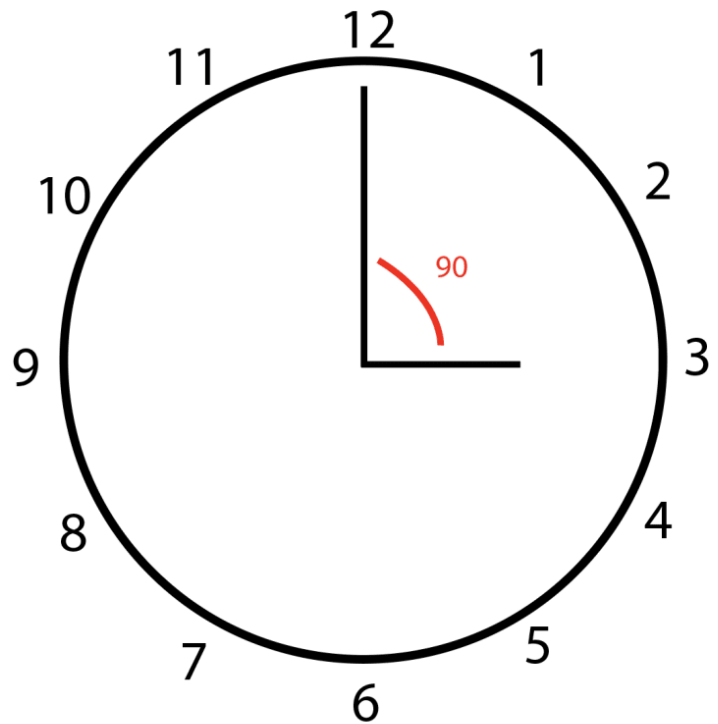
**SUBMITTED TO:**

DR. HARWANT SINGH ARRI

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# CONTENT

**I HEREBY DECLARE THAT THE MINI PROJECT WORK ENTITLED “MINUTE HAND AND HOUR HAND ANGLE CALCULATOR ” IS AN AUTHENTIC RECORD OF OUR OWN WORK CARRIED OUT IN B.TECH DEGREE IN COMPUTER SCIENCE AND ENGINEERING FROM LOVELY PROFESSIONAL UNIVERSITY, PHAGWARA, UNDER THE GUIDANCE OF DR. HARWANT SINGH ARI , DURING OCTOBER TO NOVEMBER 2022. ALL THE INFORMATION FURNISHED IN THIS MINI PROJECT REPORT IS BASED ON MY OWN INTENSIVE WORK AND IS GENUINE**



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# ACKNOWLEDGEMENT

**I TAKE THIS OPPORTUNITY TO PRESENT  
OUR VOTES OF THANKS TO ALL THOSE  
GUIDEPOST  
WHO REALLY ACTED AS LIGHTENING  
PILLARS TO ENLIGHTEN OUR WAY  
THROUGHOUT THIS  
PROJECT THAT HAS LED TO SUCCESSFUL  
AND SATISFACTORY COMPLETION OF  
THIS STUDY.**

**WE ARE REALLY GRATEFUL TO  
HARWANT SIR FOR PROVIDING US WITH  
AN OPPORTUNITY TO  
UNDERTAKE THIS PROJECT AND  
PROVIDING US WITH ALL THE  
FACILITIES. I AM HIGHLY  
THANKFUL TO SIR FOR HIS ACTIVE  
SUPPORT, VALUABLE TIME AND ADVICE,  
WHOLE-HEARTED  
GUIDANCE, SINCERE COOPERATION AND  
PAINS-TAKING INVOLVEMENT DURING  
THE STUDY  
AND IN COMPLETING THE ASSIGNMENT  
OF PREPARING THE SAID PROJECT  
WITHIN THE  
TIME STIPULATED.**



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# INTRODUCTION



**THIS PROJECT IS BASED ON  
"CALCULATING THE ANGLE BETWEEN  
MINUTE AND HOUR HAND OF A CLOCK  
AT A PARTICULAR TIME"**

**THIS HAVE SOME DAILY NEED AS THE  
STUDENTS ARE TOUGHT AT  
UNIVERSITIES AS WELL AS SCHOOLS**

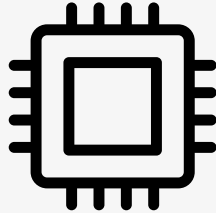
**THERE IS AN EMERGING NEED FOR  
PROJECT LIKE THESE IN THE IT  
INDUSTRY NOWADAYS..**

**IN ONE HOUR, THE MINUTE HAND  
COVERS  $360^\circ$  AND THE HOUR HAND  
COVERS  $30^\circ$ . WHEN THE MINUTE HAND  
COVERS  $180^\circ$ , THE HOUR HAND COVERS  
 $15^\circ$ . SO AT 6:30, MINUTE HAND COVERS  
 $180^\circ$  AND HOUR HAND COVERS  $195^\circ$ .  
THE ANGLE INCLUDED BETWEEN THE  
MINUTE AND HOUR HAND AT 6:30 IS  $15^\circ$ .**

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# REQUIREMENTS FOR PROJECT

## HARDWARE AND SOFTWARE REQUIREMENTS OF PROJECT



### **HARDWARE REQUIREMENTS:**

**HERE IS THE RECOMMENDED HARDWARE REQUIREMENT FOR THIS SOFTWARE TO RUN EFFICIENTLY.**

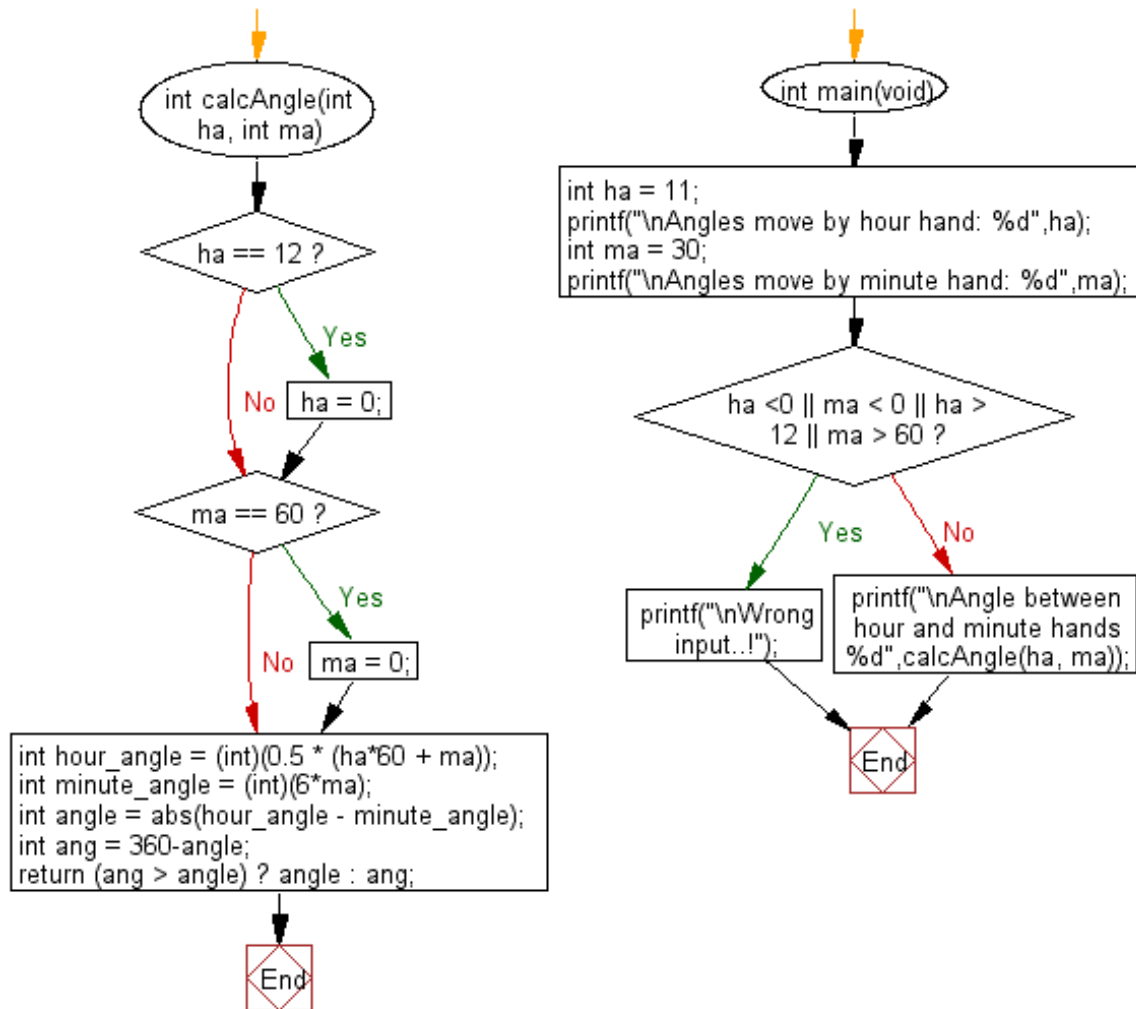
- 1) INTEL CORE I3 OR HIGHER PROCESSOR**
- 2) 10 MB RAM**
- 3) 15 MB FREE HARD DISC SPACE**
- 4) SVGA MONITORS / LAPTOPS**

### **SOFTWARE REQUIREMENTS:**

**THIS SOFTWARE COMES UNDER APPLICATION SOFTWARE. SO THE NECESSARY SOFTWARE FOR THIS IS**

- 1) WINDOWS OPERATING SYSTEM FAMILY.**
- 2) PYTHON IDLE / VS CODE**
- 3) SQLITE3 OR ANY OTHER DATABASE**

# FLOWCHARTS



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# INPUT AND OUTPUT

## INPUT:

```
def clockangle(hour, minutes):
    if 00 <= hour <= 24 and 00 <= minutes <= 60:
        #converting the 24hr format to 12 to make calculation easier
        if hour > 12:
            hour = hour - 12
        #if user inputs 3:60 the program will assume the time as 4:00
        if minutes == 60:
            hour = hour + 1
            minutes = 00
        #calculating the angle
        hour = hour + minutes / 60
        handiff = abs(hour - minutes / 5)
        preangle = handiff * 30
        postangle = min(preangle, 360 - preangle)
        return postangle
    else:
        print("Enter a correct time.")
        exit()

print("~~~~~");
print("| Give a time in hh:mm format in 24 hour notation |");
print("~~~~~\n");
postangle=clockangle(int(input("Hour: ")), int(input("Minutes: ")))
angle=format(postangle, ".2f")
print("\nThe difference between the hour and the minute hand is", angle + "°")
```

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# INPUT AND OUTPUT

## OUTPUT:

```
Python 3.10.6 (tags/v3.10.6:9c7b4bd, Aug 1 2022, 21:53:49) [MSC v.1932 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\Users\hs978\AppData\Local\Programs\Python\Python310\angleminutehourhandclock.py
~~~~~
| Give a time in hh:mm format in 24 hour notation |
~~~~~

Hour: 05
Minutes: 30

The difference between the hour and the minute hand is 15.00°
>>>|
```

```
Python 3.10.6 (tags/v3.10.6:9c7b4bd, Aug 1 2022, 21:53:49) [MSC v.1932 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\Users\hs978\AppData\Local\Programs\Python\Python310\angleminutehourhandclock.py
~~~~~
| Give a time in hh:mm format in 24 hour notation |
~~~~~

Hour: 100
Minutes: 278
Enter a correct time.
>>>|
```



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# CONCLUSION

**PYTHON IS A WIDELY USED GENERAL-PURPOSE , HIGH LEVEL PROGRAMMING LANGUAGE .**

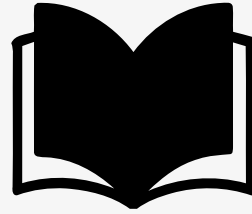
**IT WAS INITIALLY DESIGNED BY GUIDO VAN ROSSUM IN 1991 AND DEVELOPED BY PYTHON SOFTWARE FOUNDATION.**

**PYTHON IS INTERPRETED - PYTHON IS PROCESSED AT RUNTIME BY THE INTERPRETER , YOU DO NOT NEED TO COMPILE YOUR PROGRAM BEFORE EXECUTING IT . THIS IS SIMILAR TO PERL.**

**HERE ALSO WE USED SIMPLE OBJECT ORIENTED PROGRAMMING. HERE WE USED MULTIPLYTABLE() AS CLASS , TABLE(N) AS DEFINATION , AND THEN CALLING IT.**

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## REFERENCES



- \* <https://readthedocs.org/projects/python-guide/downloads/pdf/latest/>
- \* [www.w3resource.com/ python / python-tutorial.php](http://www.w3resource.com/python/python-tutorial.php)
- \* <https://www.geeksforgeeks.org/python-projects-beginner-to-advanced/>
- \* Book used: The big book of small python projects