ST. XAVIER'S COLLEGE

Maitighar, Kathmandu

PROJECT REPORT OF C-PROGRAMMING

ON

I.C.E. - Intelligent Control Engine

For the partial fulfillment of Bachelor's Degree of

Computer Science and Information Technology

Under the supervision of

Mr. Jeetendra Manandhar

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SUBMITTED TO:

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Department of Computer Science and Information Technology

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DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION TECHNOLOGY

ST. XAVIER'S COLLEGE

CERTIFICATE OF APPROVAL

The project entitled "I.C.E. - Intelligent Control Engine" has been prepared and submitted by Shaurabh Chapagain, Shreesha Pokharel, Siddhant Rimal and Sneha Prasai and presented to the Department of Computer Science and Information Technology of St. Xavier's College.

This has been approved and accepted for partial fulfillment of the requirements of the course for BSc. Ist year Computer Science.

Accepted On: 2nd June 2014

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At the end we would like to express our sincere thanks to all our friends and others who helped us directly or indirectly during this project work.

PREFACE

A general overview which gives idea about the project we have done about. Entitled I.C.E. - Intelligent Control Engine, it is a login control program that intelligently manipulates the amount of time that the user is allowed to use the computer.

It begins with an initial setup which assembles all the necessary files together and optionally allows the user to enter a custom time interval for login timeout. The default value is 3600seconds i.e. in exactly 1hour time, the program displays a warning message (for 60 seconds) that the computer is about to log off.

After the timeout of the warning message, the program precedes to forcefully logoff the computer. So, basically this program is built keeping Parents in mind, as end-users and helps them in the sense that it limits the amount of computer use for their child automatically.

Besides the primary function, this program is loaded with other functions such as Generating a Key which lets the Parent use the computer in case of an emergency.

INTRODUCTION

Simply, the I.C.E. - Intelligent Control Engine is a login control program that intelligently manipulates the amount of time that the user is allowed to use the computer. It has been created basically as a parental control measure which helps in automatic limitation of the time given to their children for the use of the system.

In practical approach, this program is useful to Parents since it limits the amount of computer use for their child automatically. This program is based off some similar parental control programs that are available for purchase online and are quite expensive.

Along with the primary function, this program is loaded with other functions such as Generating a Key which lets the Parent use the computer in case of an emergency. The Keys are basically automatically generated unique files possibly every time.

In addition, using a key is easy as all one has to do is paste the file 'ky.ice'(this is the key file) to his/her pen drive. Even if the time-limit is over, the program checks for possible USB drives connected to the computer having this file and verify it against a copy in the program database. If a match is found, the logoff is aborted for the session. Automatic logoff can be re-assigned simply by plugging off the device and logging off manually.

Overall, this program facilitates in either ways to the parent (end-user) as it helps in control over the child (other users) and also gives them platform for unlimited use in their case.

WORKING METHODOLOGY

The program works in a 3 tier process. It is basically a program that executes any one of the 3 sets of processes at a time.

When the program is first loaded, it works normally by logging the initial time and date (a_1) & then logging the next set of time and date (a_2) every five seconds. At the end of every five seconds, it checks whether the difference of current time and initial time has exceeded timer value (3600sec or custom) or not. If not exceeded, the program loops to the beginning.

If the program is interrupted (say by load shedding) during its first tier, then the second tier of the program will load when the same program is run again. When the program is started for the second time after interruption, the program automatically checks for time differences i.e. if the program got interrupted at the 30th minute, it will automatically resume from the 31st minute. This is quickly calculated by finding the difference of time_a_2 and time_a_1 from the previous tier.

If the program is interrupted yet again (i.e. multiple interruptions), the program will not bother to calculate any difference. It will obtain the value of time remaining from the data file that it created in the second tier.

At the end of any tier, before the end of the program, it displays a warning message for 60 seconds, after which the program verifies whether any USB is connected to the computer or not. It also checks whether the keys match or not. As long as the keys do not match, the logoff will commence forcefully (i.e. disregarding all open programs and closing them automatically).

This is basically how the program is configured. It does not allow the user to use the computer more than the default (3600sec) or custom timeout limit every day. Once the quota is finished for the day, no more use is allowed in the next login. The program automatically senses progressing year, month and day by comparing its database date and system date. If the program senses a new day, everything becomes reset and the program starts from the first tier again.

ADDITIONAL MODULES:

The I.C.E. program is not complete in itself. It can do all of the required tasks with no difficulty. But to make it more practical and robust, some patch files and modules have been included to enhance its workability.

Chaabi.exe

This is another program which acts as a helper module to the main program. Its function is to Generate Keys, Check Keys, Make Keys Obsolete, Set a Timer, Display current timer among other things. This file is intended to be kept by the Parent safely.

hICE.vbs

This is a windows script file that executes that file ICE.exe in hidden mode. The main program cannot start itself silently. It creates a visible window which can be manually 'closed' to render the program obsolete. So, to overcome this problem we take the help of another file hICE.vbs to make it invisible to the system so that it can start silently in the background without making the user aware about it.

patch2start.bat

The program is intended to automatically start at every startup. This is made possible by patch2start.bat file. This file creates another file and supplies it information about Drive and Path of the main program. Then it keeps that generated file inside startup folder such that the program starts up hICE.vbs which in turn starts up ICE.exe in every startup

unpatcher.bat

For an inexperienced user, disabling this program from the computer system can be difficult. This file detects whether or not any instances of ICE starter files are present in the startup folder and deletes them if they are present.

ICEmaker.exe

This is the main setup file for the whole program. It allows the user an option to customize timer value, arranges all the files in proper order, and then generates a Readme.txt file which might be useful for reference to use this program.

PROGRAM FEATURES

The basic features of the program can be highlighted as:

- As explained above, I.C.E. - Intelligent Control Engine is a login control program that intelligently manipulates the amount of time that the user is allowed to use the computer.
- Practically, this program is useful to Parents since it limits the amount of computer use for their child automatically.
- In comparison to similar parental control programs that are available for purchase online and are quite expensive, it is much more convenient and cheaper.
- Moreover, this program is also loaded with other functions such as Generating a Key which lets the Parent use the computer in case of an emergency.
- The Keys that are generated are unique every time so that the Parent can always 'Generate' a different key if the previous one comes into the possession of the Child.
- Using a key is easy as all one has to do is paste the file 'ky.ice'(this is the key file) to his/her pen drive.
- Even if the time-limit is over, the program checks for possible USB drives connected to the computer having this file and verify it against a copy in the program database.
- If a match is found, the logoff is aborted for the session. Automatic logoff can be re-assigned simply by plugging off the device and logging off manually.
- Hence, summarizing the features of our program in a line: it is a login control program that facilitates the end-user in various ways: from having control over the system to using it in their advantages in their own way possible.

ALGORITHMS

ALGORITHM FOR ICE.EXE

Step1	Start
Step2	Set constant variable consttimerval=3600
Step3	Set constant variable loto=60
Step4	Initialize integer timerval=consttimerval
Step5	Can the file 'Datarecord\\Lentime.txt' be opened?
YES	Put the value in the file inside the variable 'timerval'
NO	Display "DEFAULT TIME SET!"
Step6	Is timerval<600
YES	Set timerval=600
NO	Goto Step7
Step7	Initialize integers bln=0, timebln=0, diffa1a2=0 and time_remains=0
Step8	Does the file 'Datarecord\\Date_a1.txt' exist?
YES	Write '01' inside the file 'Daterecord\\bln.txt'
NO	Write '00' inside the file 'Datarecord\\bln.txt'
Step9	Can the file 'Datarecord\\bln.txt' be opened?
YES	Set the value of variable 'bln' from the file 'Datarecord\\bln.txt'
NO	Display "FILE OPENING ERROR!"
	Call a userdefined function errormsg(1)
Step10	Is bln=1
YES	goto Step11
NO	goto Step59
Step11	Create a directory 'Datarecord' if it does not exist
Step12	Record the current system time in the file 'Datarecord\\Time_a1.txt'
Step13	Record the current system date in the file 'Datarecord\\Date_a1.txt'
Step14	Can the file 'Datarecord\\Time_a1.txt' be opened?
YES	Set the value of variable 'time_a1' from the file 'Datarecord\\Time_a1.txt"
NO	Display "FILE OPENING ERROR"
	Call a userdefined function errormsg(2)
Step15	Call a Userdefined function strcpy(hrs_a1,time_a1)
Step16	Call a Userdefined function strcpy(min_a1,time_a1)
Step17	Call a Userdefined function strcpy(sec_a1,time_a1)
Step18	Call a Userdefined function mid(hrs_a1,0,2)
Step19	Call a Userdefined function mid(min_a1,3,2)
Step20	Call a Userdefined function mid(sec_a1,6,2)
Step21	Set value using a Userdefined function nhrs_a1=(hrs_a1)
Step22	Set value using a Userdefined function nmin_a1=(min_a1)
Step23	Set value using a Userdefined function nsec_a1=(sec_a1)
Step24	Can the file 'Datarecord\\Date_a1.txt' be opened?
YES	Set the value of variable 'date_a1' from the file 'Datarecord\\Date_a1.txt"
NO	Display "FILE OPENING ERROR"
	Call a userdefined function errormsg(3)
Step25	Call a Userdefined function strcpy(yrs_a1,date_a1)

Step26		Call a Userdefined function strcpy(mth_a1,date_a1)
Step27		Call a Userdefined function strcpy(day_a1,date_a1)
Step28		Call a Userdefined function mid(yrs_a1,10,4)
Step29		Call a Userdefined function mid(mth_a1,4,2)
Step30		Call a Userdefined function mid(day_a1,7,2)
Step31		Set value using a Userdefined function nyrs_a1=(yrs_a1)
Step32		Set value using a Userdefined function nmth_a1=(mtn_a1)
Step33		Set value using a Userdefined function nday_a1=(day_a1)
Step34		Record the current system time in the file 'Datarecord\\Time_a2.txt'
Step35		Record the current system date in the file 'Datarecord\\Date_a2.txt'
Step36		Can the file 'Datarecord\\Time_a2.txt' be opened?
	YES	Set the value of variable 'time_a2' from the file 'Datarecord\\Time_a2.txt"
	NO	Display "FILE OPENING ERROR" Call a userdefined function errormsg(4)
Step37		Can the file 'Datarecord\\Date_a2.txt' be opened?
	YES	Set the value of variable 'date_a2' from the file 'Datarecord\\Date_a2.txt"
	NO	Display "FILE OPENING ERROR" Call a userdefined function errormsg(5)
Step38		Call a Userdefined function strcpy(hrs_a2,time_a2)
Step39		Call a Userdefined function strcpy(min_a2,time_a2)
Step40		Call a Userdefined function strcpy(sec_a2,time_a2)
Step41		Call a Userdefined function strcpy(yrs_a2,date_a2)
Step42		Call a Userdefined function strcpy(mth_a2,date_a2)
Step43		Call a Userdefined function strcpy(day_a2,date_a2)
Step44		Call a Userdefined function mid(hrs_a2,0,2)
Step45		Call a Userdefined function mid(min_a2,3,2)
Step46		Call a Userdefined function mid(sec_a2,6,2)
Step47		Call a Userdefined function mid(yrs_a2,10,4)
Step48		Call a Userdefined function mid(mth_a2,4,2)
Step49		Call a Userdefined function mid(day_a2,7,2)
Step50		Set value using a Userdefined function nhrs_a2=(hrs_a2)
Step51		Set value using a Userdefined function nmin_a2=(min_a2)
Step52		Set value using a Userdefined function nsec_a2=(sec_a2)
Step53		Set value using a Userdefined function nyrs_a2=(yrs_a2)
Step54		Set value using a Userdefined function nmth_a2=(mtn_a2)
Step55		Set value using a Userdefined function nday_a2=(day_a2)
Step56		Set value using userdeined function diffa1a2=diffx(nhrs_a2,nmin_a2,nsec_a2,nhrs_a1,nmin_a1,nsec_a1)
Step57		Is diffa1a2<timerval
	YES	Pause for 5 seconds Goto Step34
	NO	Display "LOOP COMPLETE!"
Step58		goto Step167
Step59		Record the current system time in the file 'Datarecord\\Time_a3.txt'
Step60		Record the current system date in the file 'Datarecord\\Date_a3.txt'
Step61		Can the file 'datarecord\\Time_a2.txt' be opened?

YES	Set the value of variable 'Time_a2' from the file 'Datarecord\\Time_a2.txt'
NO	Display "File opening error!" Call a user defined function errormsg(4)
Step62	Can the file 'datarecord\\Time_a3.txt' be opened?
YES	Set the value of variable'Time_a3' from the file 'datarecord\\Time_a3.txt'
NO	Display "File opening error!" Call a user defined function errormsg(6)
Step63	Can the file 'datarecord\\Date_a2.txt' be opened?
YES	Set the value of variable'Date_a2 from the file'datarecord\\Date_a2.txt'
NO	Display "File opening error!" Call a user defined function errormsg(5)
Step64	an the file'datarecord\\Date_a3.txt' bbe opened?
YES	Set the value of variable 'Date_a3' from the file 'datarecord\\Date_a3.txt'
NO	Display "File opening error!" Call a user defined function errormsg(7)
Step65	Call a userdefined function strcpy(hrs_a2,time_a2)
Step66	Call a userdefined function strcpy(min_a2,time_a2)
Step67	Call a userdefined function strcpy(sec_a2,time_a2)
Step68	Call a userdefined function strcpy(yrs_a2,date_a2)
Step69	Call a userdefined function strcpy(mth_a2,date_a2)
Step70	Call a userdefined function strcpy(day_a2,date_a2)
Step71	Call a userdefined function strcpy(hrs_a3,time_a3)
Step72	Call a userdefined function strcpy(min_a3,time_a3)
Step73	Call a userdefined function strcpy(sec_a3,time_a3)
Step74	Call a userdefined function strcpy(yrs_a3,date_a3)
Step75	Call a userdefined function strcpy(mth_a3,date_a3)
Step76	Call a userdefined function strcpy(day_a3,date_a3)
Step77	Call a userdefined function mid(hrs_a2,0,2)
Step78	Call a userdefined function mid(min_a2,3,2)
Step79	Call a userdefined function mid(sec_a2,6,2)
Step80	Call a userdefined function mid(yrs_a2,10,4)
Step81	Call a userdefined function mid(mth_a2,4,2)
Step82	Call a userdefined function mid(day_a2,7,2)
Step83	Call a userdefined function mid(hrs_a3,0,2)
Step84	Call a userdefined function mid(min_a3,3,2)
Step85	Call a userdefined function mid(sec_a3,6,2)
Step86	Call a userdefined function mid(yrs_a3,10,4)
Step87	Call a userdefined function mid(mth_a3,4,2)
Step88	Call a userdefined function mid(day_a3,7,2)
Step89	Set value using userdefined function nhrs_a2=(hrs_a2)
Step90	Set value using userdefined function nmin_a2=(min_a2)
Step91	Set value using userdefined function nsec_a2=(sec_a2)
Step92	Set value using userdefined function nyrs_a2=(yrs_a2)
Step93	Set value using userdefined function nmth_a2=(mth_a2)
Step94	Set value using userdefined function nday_a2=(day_a2)
Step95	Set value using userdefined function nhrs_a3=(hrs_a3)
Step96	Set value using userdefined function nmin_a3=(min_a3)
Step97	Set value using userdefined function nsec_a3=(sec_a3)
Step98	Set value using userdefined function nyrs_a3=(yrs_a3)

Step99	Set value using userdefined function nmth_a3=(mth_a3)
Step100	Set value using userdefined function nday_a3=(day_a3)
Step101	Is (nyrs_a3>nyrs_a2) ?
YES	Goto Step 104
NO	Goto Step 102
Step102	Is (nmth_a3>nmth_a2) ?
YES	Goto Step 104
NO	Goto Step 103
Step103	Is (nday_a3>nday_a2) ?
YES	Goto Step 104
NO	Goto Step 106
Step104	Delete all the files inside ‘Datarecord’ folder whose filename starts with the string ‘time’ or ‘date’
Step105	Goto Step11
Step106	Can the file 'datarecord\\time_a1.txt' be opened ?
YES	Set the value of variable 'time_a1' from the file 'datarecord\\time_a1.txt'
NO	Display "FILE OPENING ERROR !" Call a userdefined function errormsg(2)
Step107	Can the file 'datarecord\\time_a2.txt' be opened ?
YES	Set the value of variable 'time_a2' from the file 'datarecord\\time_a2.txt'
NO	Display "FILE OPENING ERROR!" Call a userdefined function errormsg(4)
Step108	Can the file 'datarecord\\date_a1.txt' be opened ?
YES	Set the value of variable 'date_a1' from the file 'datarecord\\date_a1.txt'
NO	Display "FILE OPENING ERROR!" Call a userdefined function errormsg(3)
Step109	Can the file ' datarecord\\date_a2.txt' be opened ?
YES	Set the value of variable 'date_a2' from the file 'datarecord\\date_a2.txt'
NO	Display "FILE OPENING ERROR !" Call a userfined function errormsg(5)
Step110	Call a userdefined function strcpy(hrs_a2,time_a2)
Step111	Call a userdefined function strcpy(min_a2,time_a2)
Step112	Call a userdefined function strcpy(sec_a2,time_a2)
Step113	Call a userdefined function strcpy(yrs_a2,date_a2)
Step114	Call a userdefined function strcpy(mth_a2,date_a2)
Step115	Call a userdefined function strcpy(day_a2,date_a2)
Step116	Call a Userdefined function strcpy(hrs_a1,time_a1)
Step117	Call a Userdefined function strcpy(min_a1,time_a1)
Step118	Call a Userdefined function strcpy(sec_a1,time_a1)
Step119	Call a Userdefined function strcpy(yrs_a1,date_a1)
Step120	Call a Userdefined function strcpy(mth_a1,date_a1)
Step121	Call a Userdefined function strcpy(day_a1,date_a1)
Step122	Call a userdefined function mid(hrs_a2,0,2)
Step123	Call a userdefined function mid(min_a2,3,2)
Step124	Call a userdefined function mid(sec_a2,6,2)
Step125	Call a userdefined function mid(yrs_a2,10,4)
Step126	Call a userdefined function mid(mth_a2,4,2)
Step127	Call a userdefined function mid(day_a2,7,2)
Step128	Call a Userdefined function mid(hrs_a1,0,2)
Step129	Call a Userdefined function mid(min_a1,3,2)

Step130	Call a Userdefined function mid(sec_a1,6,2)
Step131	Call a Userdefined function mid(yrs_a1,10,4)
Step132	Call a Userdefined function mid(mth_a1,4,2)
Step133	Call a Userdefined function mid(day_a1,7,2)
Step134	Set value using userdefined function nhrs_a2=(hrs_a2)
Step135	Set value using userdefined function nmin_a2=(min_a2)
Step136	Set value using userdefined function nsec_a2=(sec_a2)
Step137	Set value using userdefined function nyrs_a2=(yrs_a2)
Step138	Set value using userdefined function nmth_a2=(mth_a2)
Step139	Set value using userdefined function nday_a2=(day_a2)
Step140	Set value using userdefined function nhrs_a1=(hrs_a1)
Step141	Set value using userdefined function nmin_a1=(min_a1)
Step142	Set value using userdefined function nsec_a1=(sec_a1)
Step143	Set value using userdefined function nyrs_a1=(yrs_a1)
Step144	Set value using userdefined function nmth_a1=(mth_a1)
Step145	Set value using userdefined function nday_a1=(day_a1)
Step146	Set value using userdeined function diffa1a2=diffx(nhrs_a2,nmin_a2,nsec_a2,nhrs_a1,nmin_a1,nsec_a1)
Step147	Does the file 'Datarecord\\timerem.txt' exist?
YES	Write '01' inside the file 'Daterecord\\timebln.txt'
NO	Write '00' inside the file 'Datarecord\\timebln.txt'
Step148	Can the file 'Datarecord\\timebln.txt' be opened?
YES	Set the value of variable 'timebln' from the file 'Datarecord\\timebln.txt''
NO	Display "FILE OPENING ERROR" Call a userdefined function errormsg(8)
Step149	Is(timebln==0) ?
YES	Goto Step151
NO	Goto Step150
Step150	Is(timebln==1) ?
YES	Goto Step156
NO	Goto Step160
Step151	Is (diffa1a2<timerval) ?
YES	Goto Step152
NO	Goto Step155
Step152	Calculate 'time_remains=timerval-diffa1a2'
Step153	Store 'time_remains' inside the file 'timerem.txt'
Step154	Display “Program INITATES after first interruption”
Step155	Goto Step160
Step156	Can the file “Datarecord\\Timerem.txt” be opened?
YES	Goto Step157
NO	Display “File Opening Error” Call userdefined function errormsg(9) Goto Step160
Step157	Set the valueof ‘time_remains’ from the file “Datarecord\\Timerem.txt”.
Step158	Display “Program INITATES after multiple interruption”
Step159	Calculate diffa1a2=timerval-time_remains
Step160	Calculate diffa1a2=diffa1a2+5
Step161	Is time_remains>0
YES	Goto Step162
NO	Goto Step167

Step162	Pause for 5 seconds
Step163	Calculate time_remains=time_remains-5
Step164	Write the new value of ‘time_remains’ in the file “Datarecord\\Timerem.txt”
Step165	Calculate diffa1a2=diffa1a2+5
Step166	Goto Step161
Step167	Call the userdefined function verify()
Step168	Display “Shutting down the computer”
Step169	Pause for ‘loto’ seconds Where,loto = constant integer number
Step170	Forcefully Logoff the computer by passing the command “shutdown/f –l” to cmd.
Step171	Stop

ALGORITHM FOR CHAABI.EXE

Step1		Start
Step2		initialize choice=0
Step3		Show title of window as “CHAABI - module of I.C.E.”
Step4		Display the main menu containing the options: 1. Generate a key 2. Invalidate existing key 3. Check your Key Pair/Match 4. Customize the timer value for the automatic log off 5. Check the current value of timer 6. Exit this program select option(1/2/3/4/5/6):
Step5		Input option as the integer variable ‘choice’
Step6		switch(choice)
Step7		Is choice=1
	YES	Call userdefined function genkey() Pause until any key is Pressed Goto Step2
	NO	Step8
Step8		Is choice=2
	YES	Call userdefined function killkey() Pause until any key is Pressed Goto Step2
	NO	Step9
Step9		Is choice=3
	YES	Call userdefined function verify() Pause until any key is Pressed Goto Step2
	NO	Step10
Step10		Is choice=4
	YES	Call userdefined function settimer() Pause until any key is Pressed Goto Step2
	NO	Step11
Step11		Is choice=5
	YES	Call userdefined function checktimer() Pause until any key is Pressed Goto Step2
	NO	Step12
Step12		Is choice=6
	YES	Display “Press Anykey to Terminate the Program” Pause until any key is pressed Goto Step13
	NO	Display “Sorry your entry cannot be accepted. Please input again (1/2/3/4/5/6)” Pause for 2 seconds Goto Step2

Step13		Stop

FOR USERDEFINED FUNCTIONS

for the function void checktimer(void)

Step1		Start
Step2		Can the file 'datarecord\\lentime.txt' be opened ?
	YES	Set the value of ‘timerval’ from the file 'datarecord\\lentime.txt' Display ‘timerval’ as the current time
	NO	Display “Default time is set! ie. 3600 sec.”
Step4		Stop

for the function void settimer(void)

Step1		Start
Step2		Call the function checktimer() to know current timer value
Step3		Ask user to enter required time in hours, minutes and seconds respectively.
Step4		Input required hour h
Step5		Input required minute m
Step6		Is(m>59 or m<0) ?
	YES	display "Invalid entry!, value must be positive and less than 60" goto Step 5
	NO	Goto Step 7
Step7		Input required seconds s
Step8		Is(s>59 or s<0) ?
	YES	display "Invalid entry!, value must be positive and less than 60" goto Step 7
	NO	Goto Step 9
Step9		Ask user to press 'S' to save the change or 'R' to reset the change
Step10		Input 'R' or 'S' in the option
Step11		Is (toupper(opt)=='R') ?
	YES	Goto Step 3
	NO	Goto Step 12
Step12		Is(toupper(opt)=='S') ?
	YES	Goto Step 13
	NO	Goto Step 18
Step13		Create a directory 'datarecord' if it does not exists
Step14		Record the value of ‘h*3600+m*60+s’ seconds in the file 'datarecord\\lentime.txt'
Step15		Display the current timer value as ‘h*3600+m*60+s’
Step16		Display "Invalid input! Please choose between R or S"
Step17		Goto Step9
Step18		Stop

for the function void genkey(void)

Step1		Start
Step2		create directory 'datarecord' if it doesnot exists.
Step3		record the current system time in the file 'datarecord\\ky.ice'
Step4		Can the file 'Datarecord\\ky.ice' be opened?
	YES	Set the KEY from the file 'Datarecord\\ky.ice'
	NO	Display "FILE OPENING ERROR"
Step5		Create a directory 'datarecord\\temp' if it doesnot exists
Step6		Copy 'datarecord\\ky.ice' into 'datarecord\\temp\\ky.ice'
Step7		Start the folder 'datarecord\\temp\\' in GUI mode and wait for it to execute
Step8		Display that the Key has been generated and ask user to copy ky.ice patch file into their pendrive
Step9		Pause for 1 second
Step10		Call winmsgbox(1)
Step11		Stop

for the function void killkey(void)

Step1		Start
Step2		Create directory 'datarecord' if it does not exists.
Step3		Delete 'datarecord\\ky.ice' if it exists.
Step4		Remove ‘Datarecord\\Temp’ folder if it exists
Step5		Display 'Key has been invalidated'
Step6		Call winmsgbox(2)
Step7		Stop

for the function void winmsggbox(int choice)
(for Chaabi.exe only)

Step1		Start
Step2		Is choice=1 ?
	YES	Copy the string “msgbox (\"A KEY has been generated. \"& chr(13) &\" \"& chr(13)&\"Please copy 'ky.ice' file into root path of a memory stick \")” inside the string variable ‘msg’ Goto Step5
	NO	Goto Step3
Step3		Is choice=2 ?
	YES	Copy the string “msgbox (\"The previous KEY has been invalidated. It will no longer work! \"& chr(13) &\" \"& chr(13)&\"Please generate a new KEY from CHAABI - Main Menu \")” inside the string variable ‘msg’

		Goto Step5
	NO	Goto Step4
Step4		Copy the string “msgbox(\"UNEXPECTED ERROR!\")” inside the string variable ‘msg’
Step5		Create a directory 'datarecord' if it does not exists.
Step6		Write the 'msg' into the file 'datarecord\\usrmsg.vbs'
Step7		Execute the file 'datarecord\\usrmsg.vbs'
Step8		Stop.

for the void function verify(void)

Step1		Start
Step2		Display "checking chaabi..."
Step3		Initialize i=65,f1=0,f2=0 and foundx=0
Step4		delete the file 'datarecord\\cdata.txt' if it exists
Step5		delete the file 'datarecord\\test.txt' if it exists
Step6		Is (i<91) ?
	YES	Goto Step 7
	NO	Goto Step 23
Step7		Store ASCII equivalent character of ‘i’ inside the file 'datarecord\\test.txt'
Step8		Extract the character from the file 'datarecord\\test.txt' and put it inside the string variable ‘msg2’
Step9		Copy a blank/space character inside ‘msg’
Step11		Copy “if exist “ into string variable msg1
Step12		Catenate the string ‘msg’ with ‘msg1’
Step13		Catenate the string ‘msg’ with ‘msg2’
Step14		Copy “:\\\\ky.ice echo “ into string variable msg3
Step15		Catenate the string ‘msg’ with ‘msg3’
Step16		Catenate the string ‘msg’ with ‘msg2’
Step17		Copy “>Datarecord\\cdata.txt “ into string variable msg4
Step18		Catenate the string ‘msg’ with ‘msg4’
Step19		Display the string represented by ‘msg’ on the screen
Step20		Execute the command represented by ‘msg’ in DOS with system(msg) command.
Step21		Increase the value of i by 1
Step22		Goto Step6
Step23		Can the file “Datarecord\\cdata.txt” be opened?
	YES	Goto Step24
	NO	Display “NO USB DEVICE DETECTED WITH KEY” Goto Step27
Step24		Extract value of string from “Datarecord\\cdata.txt” and place it in the variable ‘msg2’
Step25		Display “Key detected in drive %s. Now verifying match” Where, %s = string represented by ‘msg2’
Step26		Set foundx=1
Step27		Can the file “Datarecord\\ky.ice” be opened?

	YES	Extract the value of integer from file "Datarecord\\ky.ice" and store it in the integer variable ‘f1’
	NO	Display “No KEY Detected in DATARECORD. Please Generate a New one!"
Step28		Copy the contents of string ‘msg2’ into string ‘mx’
Step29		Catenate “:\\\\ky.ice” to the string ‘mx’
Step30		Can the file represented by ‘mx’ be opened?
	YES	Extract the value of integer from the file in the path ‘mx’ and store it in the integer variable ‘f2’
	NO	Display “No KEY Detected in USB Drive!” “Please Insert a valid Memory Stick.”
Step31		Is f1=f2 and foundx=1 ?
	YES	Display ”KEY MATCHED! Automatic Logoff process will Abort” Call a userdefined function winmsgbox(1) Abort the program with Abort() function
	NO	Goto Step32
Step32		Is foundx=1 and f1!=f2 ?
	YES	Set foundx=0 Display “KEY MISMATCHED! You must be using an older key!” Call a userdefined function winmsgbox(2) Goto Step34
	NO	Goto Step33
Step33		Is foundx=0 ?
	YES	Display “No KEY was detected”
	NO	Goto Step34
Step34		Stop

FOR USER-DEFINED FUNCTIONS

for the function int change(char x[ ])
(to change string to number)

Step1		Start
Step2		Initialize int *l*=strlen(),asc=0,i=0
Step3		Is (i<*l*) ?
	YES	Goto Step 4
	NO	Goto Step 8
Step4		Is ((int)x[i])>47 and ((int)x[i])<58 ?
	YES	Goto Step 5
	NO	Goto Step 6
Step5		Ascii value for string asc= asc*10 + ((int)*[i]-48)
Step6		Increase the value of i by 1
Step7		Goto Step 3
Step8		Return value of asc to the calling function.
Step9		Stop

for the function void mid(char x[ ], int i, int j)
(to extract substring)

Step1		Start
Step2		Initialize *l*=strlen(x), int k=0
Step3		copy value of x[i+k] into naya[k]
Step4		Increase the value of k by 1
Step5		Is (k<j) ?
	YES	Goto Step 3
	NO	Goto Step 6
Step6		copy NULL character into naya[k]
Step7		Increase value of k by 1
Step8		Is (k<=*l*) ?
	YES	Goto Step 6
	NO	Goto Step 9
Step9		Copy the value of string variable ‘naya’ to another string variable ‘x’
Step10		Stop

for the function void errormsg(int errorcode)
(for Error logging)

Step1		Start
Step2		Create a directory “DATARECORD” if it does not exist.
Step3		Record the current system time in the file 'Datarecord\\time_e1.txt'
Step4		Record the current system date in the file 'Datarecord\\date_e1.txt'
Step5		Can the file 'Datarecord\\Time_e1.txt' be opened?
	YES	Set the value of variable 'time_e1' from the file 'Datarecord\\Time_e1.txt'
	NO	Display "FILE OPENING ERROR!"
Step6		Can the file 'Datarecord\\Date_e1.txt' be opened?
	YES	Set the value of variable 'Date_e1' from the file 'Datarecord\\Date_e1.txt'
	NO	Display "FILE OPENING ERROR!"
Step7		Is errorcode=1 ?
	YES	copy "||Error Type 1: The fileboolean 'bln.txt' was not found or corrupt!||" into the string variable ‘msg’ goto Step14
	NO	goto Step8
Step8		Is errorcode=2 ?
	YES	copy "||Error Type 2: The file Time_a1.txt was not found or corrupt!||" into the string variable ‘msg’ goto Step14
	NO	goto Step9
Step9		Is errorcode=3 ?
	YES	copy "||Error Type 3: The file Date_a1.txt was not found or corrupt!||" into the string variable ‘msg’ goto Step17
	NO	goto Step10
Step10		Is errorcode=4 ?
	YES	copy "||Error Type 4: The file Time_a2.txt was not found or corrupt!||"into the string variable ‘msg’ goto Step17
	NO	goto Step11
Step11		Is errorcode=5 ?
	YES	copy "||Error Type 5: The file Date_a2.txt was not found or corrupt!||" into the string variable ‘msg’ goto Step17
	NO	goto Step12
Step12		Is errorcode=6 ?
	YES	copy "||Error Type 6: The file Time_a3.txt was not found or corrupt!||" into the string variable ‘msg’ goto Step17
	NO	goto Step13
Step13		Is errorcode=7 ?
	YES	copy "||Error Type 7: The file Date_a3.txt was not found or corrupt!||" into the string variable ‘msg’ goto Step17
	NO	goto Step14
Step14		Is errorcode=8 ?
	YES	copy "||Error Type 8: The time boolean file timebln.txt was not found or corrupt!||" into the string variable ‘msg’

		goto Step17
	NO	goto Step15
Step15		Is errorcode=9 ?
	YES	copy "||Error Type 9: The file timerem.txt was not found or corrupt!||" into the string variable ‘msg’ goto Step17
	NO	goto Step16
Step16		copy "||Error Type 0: Unexpected ERROR encountered!||" into the string variable ‘msg’
Step17		Display the string represented by ‘msg’ on the screen
Step18		Create a directory ‘Datarecord\\Error_Log’ if it does not exist.
Step19		Record current system date in Datarecord\\Date_e1.txt
Step20		Record current system time in Datarecord\\Time_e1.txt
Step21		Write the value of the variable ‘msg’ inside the file ‘Datarecord\\Error_Log\\ERL.txt’
Step22		Rename the file ‘Datarecord\\Error_Log\\ERL.txt’ to ‘Datarecord\\Error_Log\\Error%random%.txt’ Where, %random% = random positive integer number.
Step23		Stop

for the function int diffx(int a, int b, int c, int d, int e, int f)
(to find the difference in time)

Step1	Start
Step2	Initialize int diff
Step3	Obtain value of 'diff' as ((a-d)*3600)+((b-e)*60)+(c-f)
Step4	Return the value of 'diff' to the calling function.
Step5	Stop

for the function void verify(void)
(for file checking)

Step1		Start
Step2		Display "checking chaabi..."
Step3		Initialize i=65,f1=0,f2=0 and foundx=0
Step4		delete the file 'datarecord\\cdata.txt' if it exists
Step5		delete the file 'datarecord\\test.txt' if it exists
Step6		Is (i<91) ?
	YES	Goto Step 7
	NO	Goto Step 23
Step7		Store ASCII equivalent character of ‘i’ inside the file 'datarecord\\test.txt'
Step8		Extract the character from the file 'datarecord\\test.txt' and put it inside the string variable ‘msg2’
Step9		Copy a blank/space character inside ‘msg’
Step11		Copy “if exist “ into string variable msg1
Step12		Catenate the string ‘msg’ with ‘msg1’
Step13		Catenate the string ‘msg’ with ‘msg2’
Step14		Copy “:\\\\ky.ice echo “ into string variable msg3
Step15		Catenate the string ‘msg’ with ‘msg3’
Step16		Catenate the string ‘msg’ with ‘msg2’
Step17		Copy “>Datarecord\\cdata.txt “ into string variable msg4
Step18		Catenate the string ‘msg’ with ‘msg4’
Step19		Display the string represented by ‘msg’ on the screen
Step20		Execute the command represented by ‘msg’ in DOS with system(msg) command.
Step21		Increase the value of i by 1
Step22		Goto Step6
Step23		Can the file “Datarecord\\cdata.txt” be opened?
	YES	Goto Step24
	NO	Display “NO USB DEVICE DETECTED WITH KEY” Goto Step27
Step24		Extract value of string from “Datarecord\\cdata.txt” and place it in the variable ‘msg2’
Step25		Display “Key detected in drive %s. Now verifying match” Where, %s = string represented by ‘msg2’
Step26		Set foundx=1
Step27		Can the file “Datarecord\\ky.ice” be opened?
	YES	Extract the value of integer from file "Datarecord\\ky.ice" and store it in the integer variable ‘f1’
	NO	Display “No KEY Detected in DATARECORD. Please Generate a New one!"
Step28		Copy the contents of string ‘msg2’ into string ‘mx’
Step29		Catenate “:\\\\ky.ice” to the string ‘mx’
Step30		Can the file represented by ‘mx’ be opened?
	YES	Extract the value of integer from the file in the path ‘mx’ and store it in the integer variable ‘f2’
	NO	Display “No KEY Detected in USB Drive!” “Please Insert a valid Memory Stick.”
Step31		Is f1=f2 and foundx=1 ?

	YES	Display ”KEY MATCHED! Automatic Logoff process will Abort”
		Call a userdefined function winmsgbox(1)
		Abort the program with Abort() function
	NO	Goto Step32
Step32		Is foundx=1 and f1!=f2 ?
	YES	Set foundx=0
		Display “KEY MISMATCHED! You must be using an older key!”
		Call a userdefined function winmsgbox(2)
		Goto Step34
	NO	Goto Step33
Step33		Is foundx=0
	YES	Call a userdefined function winmsgbox(3)
	NO	Goto Step34
Step34		Stop

ALGORITHM FOR ICEMAKER.EXE

Step1		Start
Step2		Display “I.C.E. Setup” as the window title
Step3		Display the message “Welcome to the I.C.E Setup.This setup file will guide you through the setup process.Please follow the on-screen instructions to complete the setup.”
Step4		Display popup message “Welcome to the I.C.E Setup”
Step5		Pause until any key is pressed
Step6		Display “SETUP PROCESS (1/3) : COPYING REQUIRED FILES....”
Step7		Create a folder ‘GENice’ if it does not exist
Step8		Create a folder ‘GENice\\ICE’ if it does not exist
Step9		Copy ‘setup_resources\\ice.dat’ as ‘GENice\\ICE\\ICE.exe’
Step10		Copy ‘setup_resources\\chaabi.dat’ as ‘GENice\\ICE\\chaabi.exe’
Step11		Copy ‘setup_resources\\hice.dat’ as ‘GENice\\ICE\\hICE.vbs’
Step12		Copy ‘setup_resources\\p2s.dat’ as ‘GENice\\ICE\\Patch2start.bat’
Step13		Copy ‘setup_resources\\upc.dat’ as ‘GENice\\ICE\\Unpatcher.bat’
Step14		Pause until any key is pressed
Step15		Display “SETUP PROCESS (2/3) : SETTING UP LOGOFF TIMER....”
Step16		Display “The default timer period is 1 hour (3600seconds). Do you wish to change that and enter your own timer period?”
Step17		Display “Your Option(Y/N)”
Step18		Input option as string variable ‘ask’
Step19		Is ask==’N’?
	YES	Clear all the files inside ‘GENice\\ICE\\Datarecord’
		Goto Step23
	NO	Goto step20
Step20		Is ask==’Y’?
	YES	Display “Customizing value of logoff timer”
		Call userdefined function settimer()
		Goto Step23
	NO	Goto Step21
Step21		Display “Invalid Selection. Please select between Y or N”
Step22		Goto Step17

Step23	Display “SETUP PROCESS (3/3) : FINISHING UP....”
Step24	Display “Please copy the generated folder 'ICE' to somewhere convenient in your drive”
Step25	Delete the file ‘readme.txt’ if it exists
Step26	Write the following message inside ‘readme.txt’ file: “Instructions: – Keep The main ICE folder somewhere convenient in your harddrive – Once placed in the desired path, open it and double click on Patch2start.bat – Patch2start.bat activates this program for intended use. – Double click on Unpatcher.bat to deactivate it. – To change the timer, set the key or other settings, open Chaabi.exe”
Step27	Copy ‘Readme.txt’ to ‘GENice\\ICE\\Readme.txt’
Step28	Open the directory ‘GENice’ in GUI mode to show its contents to the user
Step29	Display popup message “Please copy the generated folder 'ICE' to somewhere convenient in your harddrive”
Step30	Open the file ‘Readme.txt’ with notepad to view its contents
Step31	Display “Press OK to exit setup”
Step32	Display popup message “SETUP HAS COMPLETED SUCCESSFULLY!” and wait for further execution until ‘OK’ is pressed on the dialog box
Step33	Delete the file ‘Readme.txt’ if it exists
Step34	Delete the file ‘msg.vbs’ if it exists
Step35	Stop

FOR USERDEFINED FUNCTIONS

for the function void checktimer(void)

Step1	Start
Step2	Can the file 'datarecord\\lentime.txt' be opened ?
YES	Set the value of ‘timerval’ from the file 'datarecord\\lentime.txt' Display ‘timerval’ as the current time
NO	Display “Default time is set! ie. 3600 sec.”
Step4	Stop

for the function void settimer(void)

Step1	Start
Step2	Call the function checktimer() to know current timer value
Step3	Ask user to enter required time in hours, minutes and seconds respectively.
Step4	Input required hour h
Step5	Input required minute m
Step6	Is(m>59 or m<0) ?
YES	display "Invalid entry!, value must be positive and less than 60" goto Step 5
NO	Goto Step 7
Step7	Input required seconds s
Step8	Is(s>59 or s<0) ?

	YES	display "Invalid entry!, value must be positive and less than 60" goto Step 7
	NO	Goto Step 9
Step9		Ask user to press 'S' to save the change or 'R' to reset the change
Step10		Input 'R' or 'S' in the option
Step11		Is (toupper(opt)=='R') ?
	YES	Goto Step 3
	NO	Goto Step 12
Step12		Is(toupper(opt)=='S') ?
	YES	Goto Step 13
	NO	Goto Step 18
Step13		Create a directory 'datarecord' if it does not exists
Step14		Record the value of ‘h*3600+m*60+s’ seconds in the file 'datarecord\\lentime.txt'
Step15		Display the current timer value as ‘h*3600+m*60+s’
Step16		Display "Invalid input! Please choose between R or S"
Step17		Goto Step9
Step18		Stop

for the function void winmsgbox(int choice)
(windows message box)
(for ICE.exe only)

Step1		Start
Step2		Initialize i=0
Step3		Is (i<200) ?
	YES	Goto Step 4
	NO	Goto Step 7
Step4		msg[i]=' '
Step5		Increase i by 1
Step6		Goto Step3
Step7		Is choice=1 ?
	YES	Copy the string “msgbox (\"A valid key was Detected! | STATUS: UNLOCKED\"& chr(13) &\" \"& chr(13)&\"Remove it and logoff to re-initiate the I.C.E. LOCK anytime \")” inside the string variable ‘msg’ Goto Step11
	NO	Goto Step8
Step8		Is choice=2 ?
	YES	Copy the string “msgbox (\"An INVALID key was detected. You must be using an older key\"& chr(13) &\" \"& chr(13)&\"This computer will log off in a few minutes \")” inside the string variable ‘msg’ Goto Step11
	NO	Goto Step9
Step9		Is choice=3 ?
	YES	Copy the string “msgbox (\"The time limit has finished \"& chr(13) &\"Please save any open documents or files \"& chr(13)&\"This computer will log off in one minute \")” inside the string variable ‘msg’ Goto Step11
	NO	Goto Step10
Step10		Copy the string “msgbox(\"UNEXPECTED ERROR!\")” inside the string variable ‘msg’
Step11		Create a directory ‘DATARECORD’ if it does not exit
Step12		Store the string ‘msg’ in the file “Datarecord\\usrmsg.vbs”
Step13		Execute the file “Datarecord\\usrmsg.vbs”
Step14		Stop

SOURCE CODES

SOURCE CODE FOR ICE.EXE

```
Line1   #include <stdio.h>
Line2   #include <conio.h>
Line3
Line4   #include <string.h>
Line5   #include <stdlib.h>
Line6   #include <dos.h>
Line7
Line8
Line9   #define consttimerval 3600 // Edit this number to change default timer
Line10  #define loto 60 //Set a log-off timeout warning message interval
Line11  int timerval=consttimerval; //sets default timer value
Line12
Line13
Line14
Line15  void main()
Line16  {
Line17  /*----------------------------*/ //Sets a custom timer value
Line18  FILE *tas;
Line19  if ((tas=fopen("Datarecord\\Lentime.txt","r"))==0)
Line20        {
Line21     printf("DEFAULT TIME SET!");
Line22     }
Line23  else
Line24        fscanf(tas,"%d",&timerval);
Line25  fclose(tas);
Line26
Line27  //This prevents the user from setting timervalue below 10 minutes.
Line28  if (timerval<600)
Line29  {
Line30  timerval=600;
Line31  }
Line32  /*-----------------------------*/
Line33
Line34
Line35
Line36  void mid(char x[], int i, int j);
Line37  int change(char x[]);
Line38  int diffx(int a, int b, int c, int d, int e, int f);
Line39  void errormsg(int errorcode);
Line40  void verify(void);
Line41  void winmsgbox(int choice);
Line42
Line43  FILE *temp;
Line44
Line45  char time_a1[12],hrs_a1[12],min_a1[12],sec_a1[12];
```

```
Line46  char date_a1[15],yrs_a1[15],mth_a1[15],day_a1[15];
Line47  char time_a2[12],hrs_a2[12],min_a2[12],sec_a2[12];
Line48  char date_a2[15],yrs_a2[15],mth_a2[15],day_a2[15];
Line49  char time_a3[12],hrs_a3[12],min_a3[12],sec_a3[12];
Line50  char date_a3[15],yrs_a3[15],mth_a3[15],day_a3[15];
Line51
Line52  int nhrs_a1,nmin_a1,nsec_a1;
Line53  int nyrs_a1,nmth_a1,nday_a1;
Line54  int nhrs_a2,nmin_a2,nsec_a2;
Line55  int nyrs_a2,nmth_a2,nday_a2;
Line56  int nhrs_a3,nmin_a3,nsec_a3;
Line57  int nyrs_a3,nmth_a3,nday_a3;
Line58
Line59  int bln=0,timebln=0,diffa1a2=0,time_remains=0;
Line60
Line61
        //S1: Section that checks the existence of file folder initially
Line62  & then assigns a boolean value
Line63  /*--------------------------------*/  //S1:START
Line64
        system("If exist Datarecord\\Date_a1.txt echo
        01>Datarecord\\bln.txt"); //If file exists, boolean value 1 is
Line65  set to a certain file
Line66
Line67  system("If not exist Datarecord\\Date_a1.txt md Datarecord");
        system("If not exist Datarecord\\Date_a1.txt echo
        00>Datarecord\\bln.txt"); //If file does not exist, boolean
Line68  value 0 is set to a certain file
Line69
Line70  //Extracting boolean value from file
Line71  if((temp=fopen("Datarecord\\bln.txt","r"))==0)
Line72        {
Line73     printf("FILE OPEN ERROR!\n");
Line74     errormsg(1);
Line75     }
Line76  else
Line77        fscanf(temp,"%d",&bln);
Line78  fclose(temp);
Line79
Line80  /*-----------------------------*/ //S1: STOP
Line81
Line82
Line83  //S2:Start normally or compare time depending upon boolean value
Line84  /*--------------------------------*/ //S2:START
Line85
Line86  printf("fileboolean=%d\n",bln);
Line87  if(bln==1)
Line88  goto timechecker;
Line89  else
Line90  goto start;
Line91
Line92  /*--------------------------------*/ //S2:STOP
```

```
Line93
Line94
Line95  //S3:Logs the initialization time and date every time
Line96  /*--------------------------------*/ //S3:START
Line97  start:
Line98
Line99        clrscr();
Line100     printf("Logging Program start time and date\n");
Line101     system("if not exist Datarecord md Datarecord");
            system("echo %time%>DataRecord\\Time_a1.txt");
Line102 //initialization time
            system("echo %date%>DataRecord\\Date_a1.txt");
Line103 //initialization date
Line104
Line105 /*--------------------------------*/ //S3:STOP
Line106
Line107
Line108 //S4: A section to extract time log info from file
Line109 /*--------------------------------------------------*/ //S4:START
Line110
Line111 //FOR TIME:
Line112
Line113             if((temp=fopen("Datarecord\\Time_a1.txt","r"))==0)
Line114                         {
Line115                                 printf("FILE OPEN ERROR!\n");
Line116                 errormsg(2);
Line117                 }
Line118             else
Line119                                 fscanf(temp,"%[^\n]",time_a1);
Line120             fclose(temp);
Line121
Line122       //Creating a copy of the original time log
Line123       strcpy(hrs_a1,time_a1);
Line124       strcpy(min_a1,time_a1);
Line125       strcpy(sec_a1,time_a1);
Line126
Line127       //Extracts required string.
Line128       mid(hrs_a1, 0, 2);
Line129     mid(min_a1, 3, 2);
Line130     mid(sec_a1, 6, 2);
Line131
Line132       //Changes Extracted Strings to Numbers
Line133       nhrs_a1=change(hrs_a1);
Line134       nmin_a1=change(min_a1);
Line135       nsec_a1=change(sec_a1);
Line136
Line137 //FOR DATE:
Line138
Line139             if((temp=fopen("Datarecord\\Date_a1.txt","r"))==0)
Line140                                 {
Line141                 printf("FILE OPEN ERROR!\n");
Line142                 errormsg(3);
```

```
Line143                 }
Line144             else
Line145                                 fscanf(temp,"%[^\n]",date_a1);
Line146             fclose(temp);
Line147
Line148       //Creating a copy of the original time log
Line149       strcpy(yrs_a1,date_a1);
Line150       strcpy(mth_a1,date_a1);
Line151       strcpy(day_a1,date_a1);
Line152
Line153       //Extracts required string.
Line154       mid(yrs_a1, 10, 4);
Line155    mid(mth_a1, 4, 2);
Line156    mid(day_a1, 7, 2);
Line157
Line158       //Changes Extracted Strings to Numbers
Line159       nyrs_a1=change(yrs_a1);
Line160       nmth_a1=change(mth_a1);
Line161       nday_a1=change(day_a1);
Line162
Line163 // Here nhrs_a1, nmin_a1, nsec_a1 are time variables for a1
Line164 // Here nyrs_a1, nmth_a1, nday_a1 are date variables for a1
Line165 /*-------------------------------------------------*/ //S4:STOP
Line166
Line167
Line168
Line169
Line170
Line171 //S5: Section to log date and time in next file for comparision
Line172 /*---------------------------------*/ //S5:START
Line173
Line174 ptl:
Line175
        system("echo %time%>DataRecord\\Time_a2.txt");  //running
Line176 time log
        system("echo %date%>DataRecord\\Date_a2.txt");  //running
Line177 date log
Line178
Line179       if((temp=fopen("Datarecord\\Time_a2.txt","r"))==0)
Line180                         {
Line181                                 printf("FILE OPEN ERROR!\n");
Line182                 errormsg(4);
Line183                 }
Line184             else
Line185                                 fscanf(temp,"%[^\n]",time_a2);
Line186             fclose(temp);
Line187
Line188       if((temp=fopen("Datarecord\\Date_a2.txt","r"))==0)
Line189                                 {
Line190                 printf("FILE OPEN ERROR!\n");
Line191                 errormsg(5);
Line192                 }
```

```
Line193             else
Line194                                 fscanf(temp,"%[^\n]",date_a2);
Line195             fclose(temp);
Line196
Line197 //Creating a copy of the original log
Line198       strcpy(hrs_a2,time_a2);
Line199       strcpy(min_a2,time_a2);
Line200       strcpy(sec_a2,time_a2);
Line201    strcpy(yrs_a2,date_a2);
Line202       strcpy(mth_a2,date_a2);
Line203       strcpy(day_a2,date_a2);
Line204
Line205       //Extracts required string.
Line206       mid(hrs_a2, 0, 2);
Line207    mid(min_a2, 3, 2);
Line208    mid(sec_a2, 6, 2);
Line209    mid(yrs_a2, 10, 4);
Line210    mid(mth_a2, 4, 2);
Line211    mid(day_a2, 7, 2);
Line212
Line213       //Changes Extracted Strings to Numbers
Line214       nhrs_a2=change(hrs_a2);
Line215       nmin_a2=change(min_a2);
Line216       nsec_a2=change(sec_a2);
Line217    nyrs_a2=change(yrs_a2);
Line218       nmth_a2=change(mth_a2);
Line219       nday_a2=change(day_a2);
Line220
Line221 diffa1a2=diffx(nhrs_a2,nmin_a2,nsec_a2,nhrs_a1,nmin_a1,nsec_a1);
Line222
Line223 if (diffa1a2<timerval)
Line224 {
Line225 printf("ELAPSED TIME:%d "
Line226             " TOTAL TIME:%d "
        " TIME REMAINING:%d\n",diffa1a2,timerval,timerval-
Line227 diffa1a2);
Line228 sleep(5);
            goto ptl;   //loop this sequence of recording a2
Line229 values
Line230 }
Line231 else
Line232             printf("Loop Complete\n");
Line233 /*----------------------------------*/ //S5:STOP
Line234 goto endpoint;
Line235
Line236
Line237
Line238
        //S6: This segment starts only if the program starts a second
        time in a single day. or if the datarecord folder has some
Line239 previously undeleted data
Line240 /*-----------------------*/ //S6: START
```

```
Line241
Line242       timechecker:
Line243
Line244    system("echo %time%>DataRecord\\Time_a3.txt"); //restart time log
Line245    system("echo %date%>DataRecord\\Date_a3.txt");  //restart date log
Line246
Line247       if((temp=fopen("Datarecord\\Time_a2.txt","r"))==0)
Line248                                     {
Line249                                             printf("FILE OPEN ERROR!\n");
Line250                     errormsg(4);
Line251                     }
Line252                             else

Line253       fscanf(temp,"%[^\n]",time_a2);
Line254                             fclose(temp);
Line255
Line256       if((temp=fopen("Datarecord\\Time_a3.txt","r"))==0)
Line257                     {
Line258                                             printf("FILE OPEN ERROR!\n");
Line259                     errormsg(6);
Line260                     }
Line261                             else

Line262       fscanf(temp,"%[^\n]",time_a3);
Line263                fclose(temp);
Line264
Line265       if((temp=fopen("Datarecord\\Date_a2.txt","r"))==0)
Line266                     {
Line267                                             printf("FILE OPEN ERROR!\n");
Line268                     errormsg(5);
Line269                     }
Line270                             else

Line271       fscanf(temp,"%[^\n]",date_a2);
Line272                             fclose(temp);
Line273
Line274       if((temp=fopen("Datarecord\\Date_a3.txt","r"))==0)
Line275                                             {
Line276                     printf("FILE OPEN ERROR!\n");
Line277                     errormsg(7);
Line278                     }
Line279                             else

Line280       fscanf(temp,"%[^\n]",date_a3);
Line281                             fclose(temp);
Line282
Line283
Line284 //Creating a copy of the original log
```

```
Line285        strcpy(hrs_a2,time_a2);
Line286        strcpy(min_a2,time_a2);
Line287        strcpy(sec_a2,time_a2);
Line288     strcpy(yrs_a2,date_a2);
Line289        strcpy(mth_a2,date_a2);
Line290        strcpy(day_a2,date_a2);
Line291
Line292     strcpy(hrs_a3,time_a3);
Line293        strcpy(min_a3,time_a3);
Line294        strcpy(sec_a3,time_a3);
Line295     strcpy(yrs_a3,date_a3);
Line296        strcpy(mth_a3,date_a3);
Line297        strcpy(day_a3,date_a3);
Line298
Line299        //Extracts required string.
Line300        mid(hrs_a2, 0, 2);
Line301     mid(min_a2, 3, 2);
Line302     mid(sec_a2, 6, 2);
Line303     mid(yrs_a2, 10, 4);
Line304     mid(mth_a2, 4, 2);
Line305     mid(day_a2, 7, 2);
Line306
Line307     mid(hrs_a3, 0, 2);
Line308     mid(min_a3, 3, 2);
Line309     mid(sec_a3, 6, 2);
Line310     mid(yrs_a3, 10, 4);
Line311     mid(mth_a3, 4, 2);
Line312     mid(day_a3, 7, 2);
Line313
Line314        //Changes Extracted Strings to Numbers
Line315        nhrs_a2=change(hrs_a2);
Line316        nmin_a2=change(min_a2);
Line317        nsec_a2=change(sec_a2);
Line318     nyrs_a2=change(yrs_a2);
Line319        nmth_a2=change(mth_a2);
Line320        nday_a2=change(day_a2);
Line321
Line322     nhrs_a3=change(hrs_a3);
Line323        nmin_a3=change(min_a3);
Line324        nsec_a3=change(sec_a3);
Line325     nyrs_a3=change(yrs_a3);
Line326        nmth_a3=change(mth_a3);
Line327        nday_a3=change(day_a3);
Line328
Line329  // Here nhrs_a2, nmin_a2, nsec_a2 are time variables for a2
Line330  // Here nyrs_a2, nmth_a2, nday_a2 are date variables for a2
Line331  // Here nhrs_a3, nmin_a3, nsec_a3 are time variables for a3
Line332  // Here nyrs_a3, nmth_a3, nday_a3 are date variables for a3
Line333  /*-----------------------*/ //S6: STOP
Line334
Line335
```

```
Line336 
        //S7: This segment checks if a day has passed or not. If TRUE,
        the whole data is cleared or RESET. Then the program restarts
        itself. If FALSE, the program exits this checking sequence and
        starts checking if the USER has some time left of his/her
Line337 alloted time
Line338 /*---------------------*/ //S7:START
Line339 /*Note: S7 Depends on S6. Keep in same order.*/
Line340 
Line341 if(nyrs_a3>nyrs_a2)
Line342       goto reset;
Line343 else
Line344       {
Line345             if(nmth_a3>nmth_a2)
Line346             goto reset;
Line347       else
Line348             {
Line349                   if (nday_a3>nday_a2)
Line350                         goto reset;
Line351                   else
Line352                         goto noaccess;
Line353             }
Line354       }
Line355 
Line356 /*-----------------------*/ //S7:STOP
Line357 
Line358 
Line359 
Line360 //S8: Resets the datafile values if the date changes
Line361 /*----------------*/ //S8:START
Line362             reset:
Line363 
            system("if exist Datarecord\ del/f
Line364 Datarecord\\time*.txt ");
            system("if exist Datarecord\ del/f
Line365 Datarecord\\date*.txt ");
            printf("Status: Datarecord has been cleared! RESET!
Line366 "); // Status msg
Line367             sleep(2);
Line368             goto start;
Line369 /*----------------*/ //S8:STOP
Line370 
Line371 
Line372 
        //S9: This section checks if the user has remaining time left
        after it is confirmed that the USER is still operating in the
Line373 same day.
Line374 /*---------------*/ //S9:START
Line375       noaccess:
Line376       printf("No RESET condition."
Line377              "\nIt is the same day."
Line378            "\nChecking remaining time if available...\n");
Line379 
```

```
Line380
Line381
Line382        if((temp=fopen("Datarecord\\Time_a1.txt","r"))==0)
Line383                                        {
                                                     printf("FILE OPEN
Line384 ERROR!\n");
Line385                        errormsg(2);
Line386                        }
Line387                                else

Line388        fscanf(temp,"%[^\n]",time_a1);
Line389                                fclose(temp);
Line390
Line391        if((temp=fopen("Datarecord\\Time_a2.txt","r"))==0)
Line392                                             {
Line393                        printf("FILE OPEN ERROR!\n");
Line394                        errormsg(4);
Line395                        }
Line396                                else

Line397        fscanf(temp,"%[^\n]",time_a2);
Line398                  fclose(temp);
Line399
Line400        if((temp=fopen("Datarecord\\Date_a1.txt","r"))==0)
Line401                                             {
Line402                        printf("FILE OPEN ERROR!\n");
Line403                        errormsg(3);
Line404                        }
Line405                                else

Line406        fscanf(temp,"%[^\n]",date_a1);
Line407                                fclose(temp);
Line408
Line409        if((temp=fopen("Datarecord\\Date_a2.txt","r"))==0)
Line410                                             {
Line411                        printf("FILE OPEN ERROR!\n");
Line412                        errormsg(5);
Line413                        }
Line414                                else

Line415        fscanf(temp,"%[^\n]",date_a2);
Line416                                fclose(temp);
Line417
Line418
Line419 //Creating a copy of the original log
Line420        strcpy(hrs_a2,time_a2);
Line421        strcpy(min_a2,time_a2);
Line422        strcpy(sec_a2,time_a2);
Line423     strcpy(yrs_a2,date_a2);
Line424        strcpy(mth_a2,date_a2);
Line425        strcpy(day_a2,date_a2);
Line426
Line427     strcpy(hrs_a1,time_a1);
```

```
Line428        strcpy(min_a1,time_a1);
Line429        strcpy(sec_a1,time_a1);
Line430     strcpy(yrs_a1,date_a1);
Line431        strcpy(mth_a1,date_a1);
Line432        strcpy(day_a1,date_a1);
Line433
Line434        //Extracts required string.
Line435        mid(hrs_a2, 0, 2);
Line436     mid(min_a2, 3, 2);
Line437     mid(sec_a2, 6, 2);
Line438     mid(yrs_a2, 10, 4);
Line439     mid(mth_a2, 4, 2);
Line440     mid(day_a2, 7, 2);
Line441
Line442     mid(hrs_a1, 0, 2);
Line443     mid(min_a1, 3, 2);
Line444     mid(sec_a1, 6, 2);
Line445     mid(yrs_a1, 10, 4);
Line446     mid(mth_a1, 4, 2);
Line447     mid(day_a1, 7, 2);
Line448
Line449        //Changes Extracted Strings to Numbers
Line450        nhrs_a2=change(hrs_a2);
Line451        nmin_a2=change(min_a2);
Line452        nsec_a2=change(sec_a2);
Line453     nyrs_a2=change(yrs_a2);
Line454        nmth_a2=change(mth_a2);
Line455        nday_a2=change(day_a2);
Line456
Line457     nhrs_a1=change(hrs_a1);
Line458        nmin_a1=change(min_a1);
Line459        nsec_a1=change(sec_a1);
Line460     nyrs_a1=change(yrs_a1);
Line461        nmth_a1=change(mth_a1);
Line462        nday_a1=change(day_a1);
Line463
Line464 // Here nhrs_a1, nmin_a1, nsec_a1 are time variables for a1
Line465 // Here nyrs_a1, nmth_a1, nday_a1 are date variables for a1
Line466 // Here nhrs_a2, nmin_a2, nsec_a2 are time variables for a2
Line467 // Here nyrs_a2, nmth_a2, nday_a2 are date variables for a2
Line468
Line469 diffa1a2=diffx(nhrs_a2,nmin_a2,nsec_a2,nhrs_a1,nmin_a1,nsec_a1);
Line470
        printf("\n a1 HRS:%d MIN: %d SEC:
Line471 %d\n",nhrs_a1,nmin_a1,nsec_a1);
        printf("\n a2 HRS:%d MIN: %d SEC:
Line472 %d\n",nhrs_a2,nmin_a2,nsec_a2);
Line473
Line474
        system("If exist Datarecord\\timerem.txt echo
        01>Datarecord\\timebln.txt"); //If file exists, boolean value 1
Line475 is set to a certain file
```

```
Line476      system("If not exist Datarecord\\Date_a1.txt md Datarecord");
Line477      system("If not exist Datarecord\\timebln.txt echo 00>Datarecord/timebln.txt"); //If file does not exist, boolean value 0 is set to a certain file
Line478
Line479 //Extracting boolean value from file
Line480 if((temp=fopen("Datarecord\\timebln.txt","r"))==0)
Line481    {
Line482      printf("FILE OPEN ERROR!\n");
Line483    errormsg(8);
Line484    }
Line485 else
Line486      fscanf(temp,"%d",&timebln);
Line487 fclose(temp);
Line488
Line489
Line490 /*-----------------------------------------------------------*/
Line491
Line492
Line493      if (timebln==0)
Line494      {
Line495                  if (diffa1a2<timerval)
Line496                  {
Line497                  time_remains=timerval-diffa1a2;
Line498
Line499                  temp=fopen("Datarecord\\Timerem.txt","w");
Line500                  fprintf(temp,"%d",time_remains);
Line501                printf("\nINVOKE POINT A: PROGRAM INITIATES AFTER FIRST INTERRUPTION\n");
Line502                  fclose(temp);
Line503          }
Line504    }
Line505    else if (timebln==1)
Line506      {
Line507
Line508      if((temp=fopen("Datarecord\\Timerem.txt","r"))==0)
Line509          {
Line510          printf("FILE OPEN ERROR!");
Line511          errormsg(9);
Line512          }
Line513          else
Line514          {
Line515                                fscanf(temp,"%d",&time_remains);
Line516                        printf("\nINVOKE POINT B: PROGRAM INITIATES AFTER SECOND OR MULTIPLE INTERRUPTION\n");
Line517                diffa1a2=timerval-time_remains;
Line518                    }
Line519           fclose(temp);
Line520    }
Line521
Line522                        printf("\n|TIMEBOOLEAN=%d |"
```

```
Line523                                    " |SERVICE USED TIME=%d |"
                    " |TIME REMAINING=%d
Line524 |",timebln,diffa1a2,time_remains);
Line525             diffa1a2=diffa1a2+5;
Line526
Line527
Line528 /*-------------------------------------------------------------*/
Line529
Line530         while(time_remains>0)
Line531                 {
Line532                         sleep(5);
Line533
Line534                /*------------*/
Line535            time_remains=time_remains-5;
Line536

Line537      temp=fopen("Datarecord\\Timerem.txt","w");
Line538                             fprintf(temp,"%d",time_remains);
Line539                 fclose(temp);
Line540
Line541                 printf("\n|TIMEBOOLEAN=%d |"
Line542                             " |SERVICE USED TIME=%d |"
                   " |TIME REMAINING=%d
Line543 |",timebln,diffa1a2,time_remains);
Line544                         diffa1a2=diffa1a2+5;
Line545                 /*------------*/
Line546
Line547                 };
Line548
Line549 /*-------------------------------------------------------------*/
Line550
Line551
Line552
Line553 goto endpoint;
Line554 /*---------------*/ //S9:STOP
Line555
Line556
Line557
Line558 endpoint:
Line559
Line560 verify();
Line561
Line562                         printf("\n\nTERMINATING.."
Line563             "\n\nThe original program will Shutdown the"
Line564             " computer at this point");
Line565             sleep(loto);
Line566             system("shutdown/f -l");
Line567
Line568 }
Line569
Line570
Line571
```

```
Line572
Line573
Line574
Line575
Line576
Line577 /*-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-*/
Line578 //USER DEFINED FUNCTIONS BELOW THIS POINT
Line579 /*-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-*/
Line580
Line581
Line582 //This function converts string to number
Line583 int change(char x[])
Line584 {
Line585 int i,l=strlen(x),asc=0;
Line586             for (i=0;i<l;i++)
Line587                   {
Line588                                 if((int)x[i]>47 && (int)x[i]<58)
Line589                                 asc=asc*10+((int)x[i]-48);
Line590                   }
Line591 return(asc);
Line592 }
Line593
Line594
Line595 //This function extracts substring
Line596 void mid(char x[], int i, int j)
Line597 {
Line598       int l = strlen(x);
Line599       char naya[15];
Line600       int k=0;
Line601       do{
Line602             naya[k]=x[i+k];
Line603             k++;
Line604       }while(k<j);
Line605       do{
Line606             naya[k]=NULL;
Line607             k++;
Line608       }while(k<=l);
Line609       strcpy(x,naya);
Line610 }
Line611
Line612
Line613
Line614
Line615
Line616
Line617 int diffx(int a, int b, int c, int d, int e, int f)
Line618 {
Line619 int diff;
Line620 diff=((a-d)*3600)+((b-e)*60)+(c-f);
Line621 return(diff);
Line622 }
```

```
Line623
Line624
Line625 void errormsg(int errorcode)
Line626 {
        /*-----------------------------------------------------*/
Line627 //ERRORLOGGING:START
Line628
Line629 FILE *temp;
Line630 char msg[150],time_e1[12], date_e1[15];
Line631
Line632
Line633 //BLOCK1: Extracts Date and time information from system
Line634 /*--x-x-x-x-x-x-x-x-xx-*/ //Block1:START
Line635       system("if not exist Datarecord md Datarecord");
        system("echo %time%>DataRecord\\Time_e1.txt");
Line636 //initialization time
        system("echo %date%>DataRecord\\Date_e1.txt");
Line637 //initialization date
Line638 if((temp=fopen("Datarecord\\Time_e1.txt","r"))==0)
Line639                                     printf("FILE OPEN ERROR!\n");
Line640                                 else

Line641       fscanf(temp,"%[^\n]",time_e1);
Line642                     fclose(temp);
Line643
Line644 if((temp=fopen("Datarecord\\Date_e1.txt","r"))==0)
Line645                                     printf("FILE OPEN ERROR!\n");
Line646                                 else

Line647       fscanf(temp,"%[^\n]",date_e1);
Line648                     fclose(temp);
Line649 /*--x-x-x-x-x-x-x-x-xx-*/ //Block1:STOP
Line650
Line651
Line652   switch(errorcode)
Line653   {
Line654   case 1:
          strcpy(msg,"||Error Type 1: The fileboolean 'bln.txt' was not
Line655 found or corrupt!||");
Line656   break;
Line657
Line658   case 2:
          strcpy(msg,"||Error Type 2: The file Time_a1.txt was not found
Line659 or corrupt!||");
Line660   break;
Line661
Line662   case 3:
          strcpy(msg,"||Error Type 3: The file Date_a1.txt was not found
Line663 or corrupt!||");
Line664   break;
Line665
Line666   case 4:
Line667   strcpy(msg,"||Error Type 4: The file Time_a2.txt was not found
```

```
or corrupt!||");
  break;

  case 5:
  strcpy(msg,"||Error Type 5: The file Date_a2.txt was not found or corrupt!||");
  break;

  case 6:
  strcpy(msg,"||Error Type 6: The file Time_a3.txt was not found or corrupt!||");
  break;

  case 7:
  strcpy(msg,"||Error Type 7: The file Date_a3.txt was not found or corrupt!||");
  break;

  case 8:
  strcpy(msg,"||Error Type 8: The time boolean file timebln.txt was not found or corrupt!||");
  break;

  case 9:
  strcpy(msg,"||Error Type 9: The file timerem.txt was not found or corrupt!||");
  break;

  default:
  strcpy(msg,"||Error Type 0: Unexpected ERROR encountered!||");
  break;
  }

puts(msg);
system("If not exist Datarecord\\Error_Log md Datarecord\\Error_Log");

      temp=fopen("Datarecord\\Error_Log\\ERL.txt","w");
   fprintf(temp,"Date Log: %s\n",date_e1);
      fprintf(temp,"Time Log: %s\n",time_e1);
   fprintf(temp,"\nType of Error:\n%s\n",msg);
   fclose(temp);

system("If exist Datarecord\\Error_Log\\ERL.txt (ren Datarecord\\Error_Log\\ERL.txt Error%random%.txt)");


/*-------------------------------------------------*/
//ERRORLOGGING:STOP
}
```

```
Line712 //FILECHECKING START
Line713 void verify(void)
Line714 {
Line715 void winmsgbox(int choice);
Line716 printf("\n\nChecking Chaabi...");
Line717 FILE *temp;
                        char
Line718 msg1[9],msg2[2],msg3[15],msg4[22],msg[50],mx[25];
Line719                        int i,f1=0,f2=0,foundx=0;
                        system("if exist DATARECORD\\cdata.txt
Line720 del DATARECORD\\cdata.txt");
                        system("if exist DATARECORD\\test.txt del
Line721 DATARECORD\\test.txt");
Line722                                    for(i=65;i<91;i++)
Line723                                          {

Line724       temp=fopen("Datarecord\\TEST.txt","w");

Line725 fprintf(temp,"%c \n",i);

Line726       fclose(temp);
                      /*-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-
Line727 x-x-x-*/

Line728 if((temp=fopen("Datarecord\\TEST.txt","r"))==0)
Line729                              printf("FILE OPENING ERROR!");
Line730                            else

Line731       fscanf(temp,"%s",msg2);
Line732                            fclose(temp);
                      /*-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-
Line733 x-x-x-*/
                                                     strcpy(msg," ");
Line734 //RESET THE CATENATION
Line735                        strcpy(msg1,"if exist ");

Line736 strcat(msg,msg1);
Line737                                          strcat(msg,msg2);
Line738                        strcpy(msg3,":\\\\ky.ice echo ");
Line739                                             strcat(msg,msg3);

Line740       strcat(msg,msg2);
Line741                        strcpy(msg4,">Datarecord\\cdata.txt");

Line742 strcat(msg,msg4);
Line743                                    //puts(msg);
Line744                              system(msg);
Line745                                  }
Line746

Line747       if((temp=fopen("Datarecord\\cdata.txt","r"))==0)

Line748       printf("\nNo USB device detected with KEY");
Line749                            else
Line750                            {
```

```
Line751      fscanf(temp,"%s",msg2);
                                 printf("\n\n KEY detected in drive
Line752 %s\n\n NOW VERIFYING MATCH..: ",msg2);
Line753                          foundx=1;
Line754                          }
Line755                          fclose(temp);
Line756
Line757
                            /*-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx-
Line758 xx-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx*/

Line759      if((temp=fopen("Datarecord\\ky.ice","r"))==0)
                                          printf("\nNo KEY Detected in
Line760 DATARECORD \nPlease Generate a New one!");
Line761                        else
Line762                          fscanf(temp,"%d",&f1);
Line763                        fclose(temp);
Line764
Line765                       /*-----------------------*/
Line766                        strcpy(mx,msg2);
Line767                        strcat(mx,":\\\\ky.ice");
Line768                       /*-----------------------*/
Line769
Line770                     if((temp=fopen(mx,"r"))==0)
                                          printf("\nNo KEY Detected in
Line771 USB Drive!"
                                "\nPlease Insert a valid Memory
Line772 Stick.");
Line773                        else
Line774                          fscanf(temp,"%d",&f2);
Line775                        fclose(temp);
Line776
Line777
                                                          if(f1==f2 &&
Line778 foundx==1)
Line779                                                       {
                                                     printf("KEY
Line780 MATCHED!"
                                        "\nSo, automatic Shutdown
Line781 process will Abort");
Line782                                 winmsgbox(1);
                                        abort(); //ABORT SHUTDOWN at
Line783 KEY MATCH EVENT
Line784                                                       }
Line785                            else if(foundx==1 && f1!=f2)
Line786                            {
Line787                            foundx=0;

Line788      printf("\nKEY MISMATCHED!"
                                        "\nYou must be using an
Line789 older key");
Line790                                 winmsgbox(2);
Line791                            }
```

```
Line792                                 else if (foundx==0)
Line793                                 {
Line794                                 winmsgbox(3);
Line795                                 }
Line796
Line797 /*-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx*/
Line798 } //FILECHECKING STOP
Line799
Line800
Line801 //WINDOWS MESSAGE BOX START
Line802 /*-----------------------------------------------------------------------------------*/
Line803 void winmsgbox(int choice)
Line804 {
Line805 FILE *temp;
Line806 char msg[200];
Line807 flushall();
Line808 int i=0;
Line809 for (i=0;i<200;i++)
Line810 {
Line811 msg[i]=' ';
Line812 }
Line813
Line814
Line815 switch(choice)
Line816 {
Line817       case 1:
Line818    strcpy(msg,"msgbox (\"A valid key was Detected! | STATUS: UNLOCKED\"&  chr(13) &\" \"& chr(13)&\"Remove it and logoff to re-initiate the I.C.E. LOCK anytime \")");
Line819    break;
Line820
Line821    case 2:
Line822       strcpy(msg,"msgbox (\"An INVALID key was detected. You must be using an older key\"&  chr(13) &\" \"& chr(13)&\"This computer will log off in a few minutes \")");
Line823    break;
Line824
Line825       case 3:
Line826       strcpy(msg,"msgbox (\"The time limit has finished \"& chr(13) &\"Please save any open documents or files \"& chr(13)&\"This computer will log off in one minute \")");
Line827    break;
Line828
Line829    default:
Line830    strcpy(msg,"msgbox(\"UNEXPECTED ERROR!\") ");
Line831    break;
Line832 }
Line833
Line834    system("if not exist Datarecord md Datarecord");
Line835
Line836    temp=fopen("Datarecord\\usrmsg.vbs","w");
```

```
Line837    fprintf(temp,"%s",msg);
Line838    fclose(temp);
Line839
Line840  system("start Datarecord\\usrmsg.vbs");
Line841 }
        /*-------------------------------------------------------------
Line842 --------*/
Line843 //WINDOWS MESSAGE BOX STOP
Line844
```

SOURCE CODE FOR CHAABI.EXE

```
        
Line1   #include <stdio.h>
Line2   #include <conio.h>
Line3
Line4   #include <string.h>
Line5   #include <stdlib.h>
Line6   #include <dos.h>
Line7   #include <process.h>
Line8   #include <ctype.h>
Line9
Line10  void winmsgbox(int choice);
Line11
Line12  void main()
Line13  {
Line14  void genkey(void);
Line15  void killkey(void);
Line16  void verify(void);
Line17  void settimer(void);
Line18  void checktimer(void);
Line19
Line20  mm:
Line21  clrscr();
Line22  int choice=0;
Line23
Line24  system("title CHAABI - module of I.C.E.");
Line25  printf("\nCHAABI Main Menu"
Line26              "\n\n1.Generate a KEY"
Line27        "\n2.Invalidate Existing KEY"
Line28        "\n3.Check your Key Pair/Match"
Line29        "\n4.Customize the Timer Value for automatic Logoff"
Line30        "\n5.Check the current value of timer"
Line31        "\n6.Exit this program"
Line32        "\n\nSELECT OPTION(1/2/3/4/5/6): "
Line33  );
Line34
Line35  scanf("%d",&choice);
Line36
```

```
Line37  switch (choice)
Line38              {
Line39              case 1:
Line40               genkey();
Line41               getch();
Line42           goto mm;
Line43
Line44           case 2:
Line45              killkey();
Line46               getch();
Line47           goto mm;
Line48
Line49           case 3:
Line50              verify();
Line51               getch();
Line52           goto mm;
Line53
Line54           case 4:
Line55              settimer();
Line56               getch();
Line57           goto mm;
Line58
Line59           case 5:
Line60              checktimer();
Line61               getch();
Line62           goto mm;
Line63
Line64           case 6:
Line65           printf("\nPress ANY KEY to terminate this program");
Line66           getch();
Line67           abort();
Line68
Line69           default:
Line70           printf("\n\nSorry, your entry cannot be accepted."
Line71           "\nPlease input again(1/2/3/4/5/6)");
Line72           sleep(2);
Line73           goto mm;
Line74        }
Line75
Line76  }
Line77
Line78
Line79  void checktimer(void)
Line80  {
Line81  int timerval;
Line82  FILE *tas;
Line83  if ((tas=fopen("Datarecord\\Lentime.txt","r"))==0)
Line84        {
        printf("\n\nCurrently,DEFAULT TIME=1hour ie.3600s is
Line85  SET!\n\n");
Line86     }
Line87  Else
```

```
Line88      {
Line89        fscanf(tas,"%d",&timerval);
Line90        printf ("\n\nThe current timer value is : %d seconds\n\n",timerval);
Line91      }
Line92  fclose(tas);
Line93  }
Line94
Line95  void settimer(void)
Line96  {
Line97  int h,m,s;
Line98  char opt;
Line99  printf("\nWelcome to the timer value customization module!\n|This module sets up a custom timer for the login controller|\n");
Line100
Line101 checktimer(); // To KNOW current timer value
Line102
Line103 reask:
Line104 printf("\n\nPlease enter the required time in \nhours, minutes and seconds respectively:\n");
Line105
Line106             printf("HOURS:");
Line107             scanf("%d",&h);
Line108
Line109 minask:
Line110             printf("MINUTES:");
Line111             scanf("%d",&m);
Line112 if (m>59 || m<0)
Line113 {
Line114 printf("INVALID ENTRY!, Value must be positive integer less than 60.\n");
Line115 goto minask;
Line116 }
Line117
Line118 secask:
Line119             printf("SECONDS:");
Line120             scanf("%d",&s);
Line121 if (s>59 || s<0)
Line122 {
Line123 printf("INVALID ENTRY!, Value must be positive integer less than 60.\n");
Line124 goto secask;
Line125 }
Line126
Line127 printf("\n\n The timer is about to be set at: \n%dhours:%dminutes:%dseconds i.e. %d seconds in total\n\n Do you want to save this change or input again?\n Press 'S' to save and proceed or 'R' to reset the changes: ",h,m,s,h*60*60+m*60+s);
Line128 optask:
Line129 printf("\nYOUR OPTION(R/S):");
Line130 opt=getche();
```

```
Line131 if (toupper(opt)=='R')
Line132       goto reask;
Line133 else if (toupper(opt)=='S')
Line134       {
Line135    /*SETTING UP TIMER*/
Line136    system("if not exist Datarecord md Datarecord");
Line137    FILE *tmx;
Line138    tmx=fopen("Datarecord\\Lentime.txt","w");
Line139    fprintf(tmx,"%d",h*3600+m*60+s);
Line140    fclose(tmx);
Line141
           printf("\n\nTimer is set at: %dhours:%dminutes:%dseconds
Line142 i.e. %d seconds in total \n",h,m,s,h*3600+m*60+s);
Line143       }
Line144 else
Line145       {
           printf("\n\nINVALID INPUT. Please choose between 'R' or
Line146 'S'\n");
Line147    goto optask;
Line148    }
Line149 }
Line150
Line151 void genkey(void)
Line152 {
Line153
Line154 FILE *temp;
Line155 long int KEY;
Line156
Line157  system("if not exist Datarecord md Datarecord");
         system("echo %random%>DataRecord\\ky.ice");  //initialization
Line158 time
Line159
Line160    if((temp=fopen("Datarecord\\ky.ice","r"))==0)
Line161                                    printf("FILE OPEN ERROR!\n");
Line162                              else
Line163                                    fscanf(temp,"%ld",&KEY);
Line164                  fclose(temp);
Line165
Line166    system("if not exist Datarecord\\Temp md Datarecord\\Temp");
Line167    system("copy Datarecord\\ky.ice Datarecord\\Temp\\ky.ice");
Line168    clrscr();
Line169    system("start/w Datarecord\\Temp\\");
Line170
Line171
Line172 printf("\nA KEY has been generated"
Line173            "\nPlease copy ky.ice patch file"
Line174       "\ninto root path of a memory stick"
Line175       "\nor pendrive");
Line176       sleep(1);winmsgbox(1);
Line177
Line178
Line179 }
```

```
Line180
Line181
Line182 void killkey(void)
Line183 {
Line184  system("if not exist Datarecord md Datarecord");
         system("if exist Datarecord\\ky.ice del/q/f/s
Line185 Datarecord\\ky.ice ");
Line186  system("if exist Datarecord\\Temp rd Datarecord\\Temp");
Line187  clrscr();
Line188  printf("The previous KEY has been invalidated"
Line189  "\nIt will no longer work!"
Line190  "\n\nThere is currently no KEY assigned"
Line191  "\nPlease generate a new KEY on the next screen."
Line192  );
Line193
Line194  winmsgbox(2);
Line195
Line196 }
Line197
Line198 void winmsgbox(int choice)
Line199 {
Line200 FILE *temp;
Line201 char msg[200];
Line202
Line203 switch(choice)
Line204 {
Line205       case 1:
           strcpy(msg,"msgbox (\"A KEY has been generated. \"&  chr(13)
        &\" \"& chr(13)&\"Please copy 'ky.ice' file into root path of a
Line206 memory stick \")");
Line207    break;
Line208
Line209       case 2:
           strcpy(msg,"msgbox (\"The previous KEY has been
        invalidated. It will no longer work! \"&  chr(13) &\" \"&
        chr(13)&\"Please generate a new KEY from CHAABI - Main Menu
Line210 \")");
Line211    break;
Line212
Line213    default:
Line214    strcpy(msg,"msgbox(\"UNEXPECTED ERROR!\") ");
Line215    break;
Line216 }
Line217
Line218    system("if not exist Datarecord md Datarecord");
Line219
Line220    temp=fopen("Datarecord\\usrmsg.vbs","w");
Line221    fprintf(temp,"%s",msg);
Line222    fclose(temp);
Line223
Line224  system("start Datarecord\\usrmsg.vbs");
Line225
Line226 }
```

```
Line227
Line228
Line229 void verify(void)
Line230 {
Line231 printf("Checking......");
Line232 FILE *temp;
                        char
Line233 msg1[9],msg2[2],msg3[15],msg4[22],msg[50],mx[25];
Line234                        int i,f1=0,f2=0,foundx=0;
                        system("if exist DATARECORD\\cdata.txt
Line235 del DATARECORD\\cdata.txt");
                        system("if exist DATARECORD\\test.txt
Line236 del DATARECORD\\test.txt");
Line237                                    for(i=65;i<91;i++)
Line238                                          {

Line239       temp=fopen("Datarecord\\TEST.txt","w");

Line240 fprintf(temp,"%c \n",i);

Line241       fclose(temp);
                      /*-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-
Line242 x-x-x-x-*/

Line243 if((temp=fopen("Datarecord\\TEST.txt","r"))==0)
Line244                              printf("FILE OPENING ERROR!");
Line245                            else

Line246       fscanf(temp,"%s",msg2);
Line247                            fclose(temp);
                      /*-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-x-
Line248 x-x-x-x-*/
                                                      strcpy(msg," ");
Line249 //RESET THE CATENATION
Line250                        strcpy(msg1,"if exist ");

Line251 strcat(msg,msg1);
Line252                                             strcat(msg,msg2);
Line253                        strcpy(msg3,":\\\\ky.ice echo ");
Line254                                                strcat(msg,msg3);

Line255       strcat(msg,msg2);
Line256                        strcpy(msg4,">Datarecord\\cdata.txt");

Line257 strcat(msg,msg4);
Line258                                    //puts(msg);
Line259                              system(msg);
Line260                                  }
Line261

Line262       if((temp=fopen("Datarecord\\cdata.txt","r"))==0)

              printf("\nNo KEY Detected in Datarecord! \nPlease run
Line263 Chaabi application to create one!\n");
Line264                            else
```

```
Line265                                {
Line266        fscanf(temp,"%s",msg2);
                                       printf("KEY detected in drive %s\n\n
Line267 NOW VERIFYING MATCH..: ",msg2);
Line268                                foundx=1;
Line269                                }
Line270                                fclose(temp);
Line271
Line272
                                /*-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx-
Line273 xx-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx*/
Line274        if((temp=fopen("Datarecord\\ky.ice","r"))==0)
                                                printf("\nNo KEY Detected in
Line275 DATARECORD \nPlease Generate a New one!");
Line276                                else
Line277                                   fscanf(temp,"%d",&f1);
Line278                                fclose(temp);
Line279
Line280                                /*-----------------------*/
Line281                                strcpy(mx,msg2);
Line282                                strcat(mx,":\\\\ky.ice");
Line283                                /*-----------------------*/
Line284
Line285                         if((temp=fopen(mx,"r"))==0)
                                                printf("\nNo KEY Detected in
Line286 USB Drive!"
                                          "\nPlease Insert a valid Memory
Line287 Stick.");
Line288                                else
Line289                                   fscanf(temp,"%d",&f2);
Line290                                fclose(temp);
Line291
Line292
                                                                  if(f1==f2 &&
Line293 foundx==1)
Line294                                                                  {
                                                              printf("KEY
Line295 MATCHED!"
                                                   "\nThis KEY can be used to
Line296 avoid shutting down");
Line297                                                                  }
Line298                                  else if(foundx==1 && f1!=f2)
Line299                                  {
Line300                                  foundx=0;
Line301                                        printf("KEY MISMATCHED!"
                                               "\nYou must be using an
Line302 older key");
Line303                                  }
Line304
        /*-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx-xx-
Line305 xx-xx-xx-xx-xx-xx*/
Line306 }
```

SOURCE CODE FOR ICEMAKER.EXE

```
Line1   #include <stdio.h>
Line2   #include <conio.h>
Line3
Line4   #include <stdlib.h>
Line5   #include <process.h>
Line6   #include <ctype.h>
Line7
Line8   void main()
Line9   {
Line10
Line11  void settimer(void);
Line12  void checktimer(void);
Line13
Line14  char ask;
Line15
Line16  system("title I.C.E. Setup");
Line17  printf("Welcome to the I.C.E Setup\n"
Line18  "\nThis setup file will guide you through the setup process."
        "\nPlease follow the on-screen instructions to complete the
Line19  setup.\n\n");
Line20  /*------------------------*/ //SHOWS POPUP MESSAGE
        system("echo x=msgbox(\"Welcome to the I.C.E Setup\",0+64,\"ICE
Line21  Setup Notifier\")>msg.vbs");
Line22  system("msg *");
Line23  /*------------------------*/
Line24  system("pause");
Line25
Line26  clrscr();
        printf("\nSETUP PROCESS (1/3) : COPYING REQUIRED
Line27  FILES....\n\n");
Line28  system("If not exist GENice md GENice");
Line29  system("If not exist GENice\\ICE md GENice\\ICE");
Line30
        system("If not exist setup_resources\\ice.dat echo WARNING!
Line31  ICE.dat file not found!");
        system("If not exist setup_resources\\chaabi.dat echo WARNING!
Line32  chaabi.dat file not found!");
        system("If not exist setup_resources\\hice.dat echo WARNING!
Line33  hICE.dat file not found!");
        system("If not exist setup_resources\\p2s.dat echo WARNING!
Line34  p2s.dat file not found!");
Line35
        system("If exist setup_resources\\ice.dat copy
Line36  setup_resources\\ice.dat GENice\\ICE\\ICE.exe");
        system("If exist GENice\\ICE\\ICE.exe echo COPIED (1/5) FILES:
Line37  ICE.EXE");
Line38  system("If exist setup_resources\\chaabi.dat copy
```

```
        setup_resources\\chaabi.dat GENice\\ICE\\chaabi.exe");
        system("If exist GENice\\ICE\\chaabi.exe echo COPIED (2/5)
Line39  FILES: CHAABI.EXE");
        system("If exist setup_resources\\hice.dat copy
Line40  setup_resources\\hice.dat GENice\\ICE\\hICE.vbs");
        system("If exist GENice\\ICE\\hICE.vbs echo COPIED (3/5) FILES:
Line41  hICE.VBS");
        system("If exist setup_resources\\p2s.dat copy
Line42  setup_resources\\p2s.dat GENice\\ICE\\patch2start.bat");
        system("If exist GENice\\ICE\\patch2start.bat echo COPIED (4/5)
Line43  FILES: Patch2Start.bat");
        system("If exist setup_resources\\upc.dat copy
Line44  setup_resources\\upc.dat GENice\\ICE\\Unpatcher.bat");
        system("If exist GENice\\ICE\\unpatcher.bat echo COPIED (5/5)
Line45  FILES: Unpatcher.bat");
Line46
Line47  system("pause");
Line48  clrscr();
        printf("\nSETUP PROCESS (2/3) : SETTING UP LOGOFF
Line49  TIMER....\n\n");
Line50  printf("\nThe default timer period is 1 hour (3600seconds)."
               "\nDo you wish to change that and enter your own timer
Line51  period?");
Line52
Line53  askagain:
Line54  printf("\nYOUR OPTION(Y/N):");
Line55  ask=getche();
Line56
Line57  if(toupper(ask)=='N')
Line58  {
        system("if exist GENice\\ICE\\Datarecord rd/s/q
Line59  GENice\\ICE\\Datarecord");
        system("if not exist GENice\\ICE\\Datarecord md
Line60  GENice\\ICE\\Datarecord");
Line61  }
Line62  else if (toupper(ask)=='Y')
Line63  {
Line64  printf("\n|CUSTOMIZING VALUE OF LOGOFF TIMER|\n");
Line65  settimer();
Line66  }
Line67  else
Line68  {
        printf ("\nINVALID SELECTION. PLEASE SELECT BETWEEN 'Y' or
Line69  'N'.\n");
Line70  goto askagain;
Line71  }
Line72
Line73  clrscr();
Line74  printf("\nSETUP PROCESS (3/3) : FINISHING UP....\n");
        printf("\nPlease copy the generated folder 'ICE' to somewhere
Line75  convenient in your drive\n");
Line76
Line77  system("if exist readme.txt del readme.txt");
Line78  system("echo Instructions:>>Readme.txt");
```

```
Line79   system("echo -Keep The main ICE folder somewhere convenient in your harddrive>>Readme.txt");
Line80   system("echo -Once placed in the desired path, open it and double click on Patch2start.bat>>Readme.txt");
Line81   system("echo -Patch2start.bat activates this program for intended use.>>Readme.txt");
Line82   system("echo -Double click on Unpatcher.bat to deactivate it. >>Readme.txt");
Line83   system("echo -To change the timer, set the key or other settings, open Chaabi.exe>>Readme.txt");
Line84   system("copy readme.txt GENice\\ICE\\README.TXT");
Line85
Line86   system("start GENice");
Line87
Line88   /*-------------------------*/ //SHOWS POPUP MESSAGE
Line89   system("echo x=msgbox(\"Please copy the generated folder 'ICE' to somewhere convenient in your harddrive\",0+64,\"ICE Setup Notifier\")>msg.vbs");
Line90   system("msg *");
Line91   /*-------------------------*/
Line92   system("start Readme.txt");
Line93
Line94   printf("\n\n\PRESS OK TO EXIT SETUP\n\n");
Line95
Line96   /*-------------------------*/ //SHOWS POPUP MESSAGE
Line97   system("echo x=msgbox(\"SETUP HAS COMPLETED SUCCESSFULLY!\",0+64,\"ICE Setup Notifier\")>msg.vbs");
Line98   system("start/w msg");
Line99   /*-------------------------*/
Line100  system("if exist readme.txt del readme.txt");
Line101  system("if exist msg.vbs del msg.vbs");
Line102
Line103  }
Line104
Line105
Line106  void checktimer(void)
Line107  {
Line108  int timerval;
Line109  FILE *tas;
Line110  if ((tas=fopen("GENice\\ICE\\Datarecord\\Lentime.txt","r"))==0)
Line111        {
Line112     printf("\n\nCurrently,DEFAULT TIME=1hour ie.3600s is SET!\n\n");
Line113     }
Line114  else
Line115     {
Line116        fscanf(tas,"%d",&timerval);
Line117     printf ("\n\nThe current timer value is : %d seconds\n\n",timerval);
Line118     }
Line119  fclose(tas);
Line120  }
Line121
Line122  void settimer(void)
```

```
Line123 {
Line124 int h,m,s;
Line125 char opt;
        printf("\nWelcome to the timer value customization
        module!\n|This module sets up a custom timer for the login
Line126 controller|\n");
Line127
Line128 checktimer(); // To KNOW current timer value
Line129
Line130 reask:
        printf("\n\nPlease enter the required time in \nhours, minutes
Line131 and seconds respectively:\n");
Line132
Line133             printf("HOURS:");
Line134             scanf("%d",&h);
Line135
Line136 minask:
Line137             printf("MINUTES:");
Line138             scanf("%d",&m);
Line139 if (m>59 || m<0)
Line140 {
        printf("INVALID ENTRY!, Value must be positive integer less
Line141 than 60.\n");
Line142 goto minask;
Line143 }
Line144
Line145 secask:
Line146             printf("SECONDS:");
Line147             scanf("%d",&s);
Line148 if (s>59 || s<0)
Line149 {
        printf("INVALID ENTRY!, Value must be positive integer less
Line150 than 60.\n");
Line151 goto secask;
Line152 }
Line153
        printf("\n\n The timer is about to be set at:
        \n%dhours:%dminutes:%dseconds i.e. %d seconds in total\n\n Do
        you want to save this change or input again?\n Press 'S' to
        save and proceed or 'R' to reset the changes:
Line154 ",h,m,s,h*60*60+m*60+s);
Line155 optask:
Line156 printf("\nYOUR OPTION(R/S):");
Line157 opt=getche();
Line158 if (toupper(opt)=='R')
Line159       goto reask;
Line160 else if (toupper(opt)=='S')
Line161       {
Line162    /*SETTING UP TIMER*/
           system("if not exist GENice\\ICE\\Datarecord md
Line163 GENice\\ICE\\Datarecord");
Line164    FILE *tmx;
Line165    tmx=fopen("GENice\\ICE\\Datarecord\\Lentime.txt","w");
```

```
Line166    fprintf(tmx,"%d",h*3600+m*60+s);
Line167    fclose(tmx);
Line168
           printf("\n\nTimer is set at: %dhours:%dminutes:%dseconds
Line169 i.e. %d seconds in total \n",h,m,s,h*3600+m*60+s);
Line170       }
Line171 else
Line172       {
           printf("\n\nINVALID INPUT. Please choose between 'R' or
Line173 'S'\n");
Line174    goto optask;
Line175    }
Line176 }
```

SOURCE CODE FOR HICE.VBS

```
Line1   CreateObject("Wscript.Shell").Run "ICE.exe",0,True
```

SOURCE CODE FOR PATCH2START.BAT

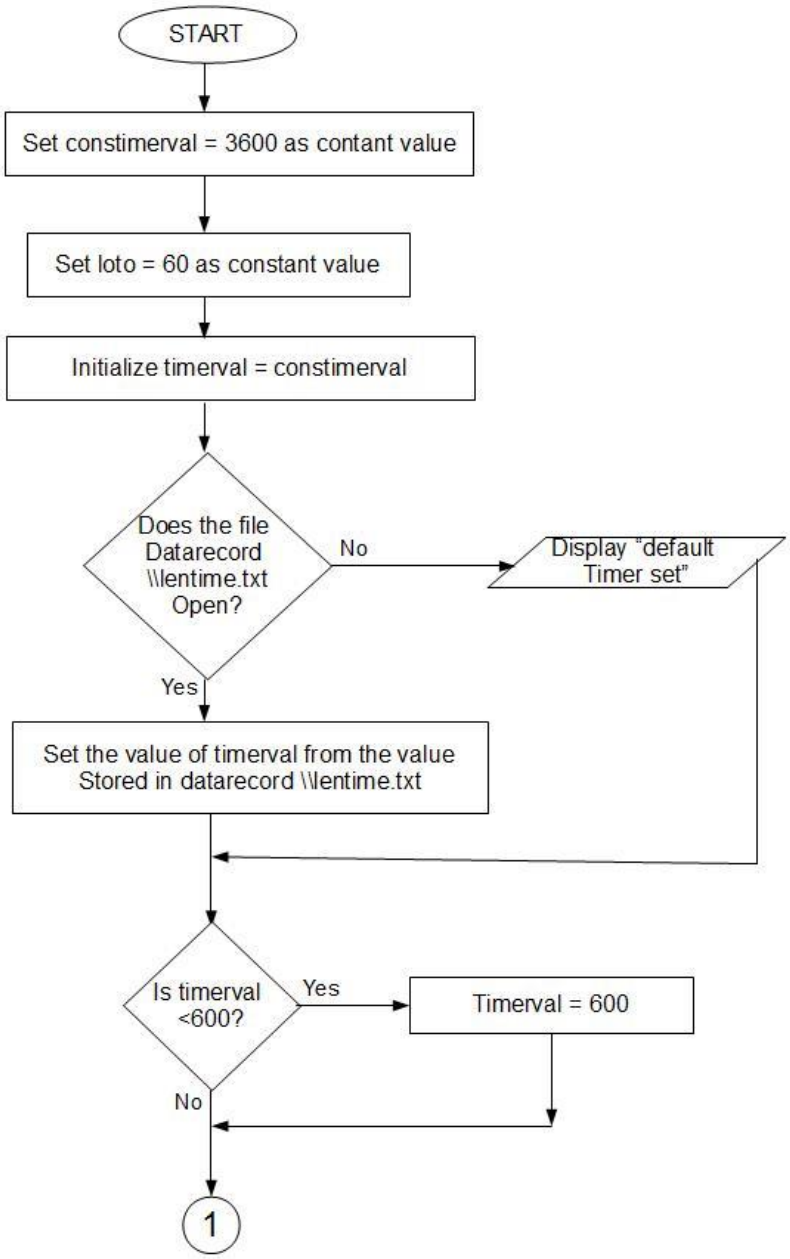
```
Line1   @echo off
Line2   title I.C.E - Patcher
Line3   echo Patcher to set ICE.exe to startup directory
Line4   echo.
Line5   echo Patching....
Line6   echo.
Line7   echo @echo off>>x.bat
Line8   echo title ICE starter>>x.bat
Line9   echo %cd:~0,2%>>x.bat
Line10  echo cd %cd%>>x.bat
Line11  echo start hIce.vbs>>x.bat
Line12
        if not exist x.bat echo Patch item not found. Please keep this
Line13  file along ICE.exe
        if exist x.bat copy x.bat "%homedrive%%homepath%\start
Line14  menu\programs\startup\ICE.bat"
        if exist "%homedrive%%homepath%\start
Line15  menu\programs\startup\ICE.bat" echo Successfully Patched!
Line16  echo.
Line17  pause
Line18  echo exiting.....
Line19  del x.bat
Line20  exit
```

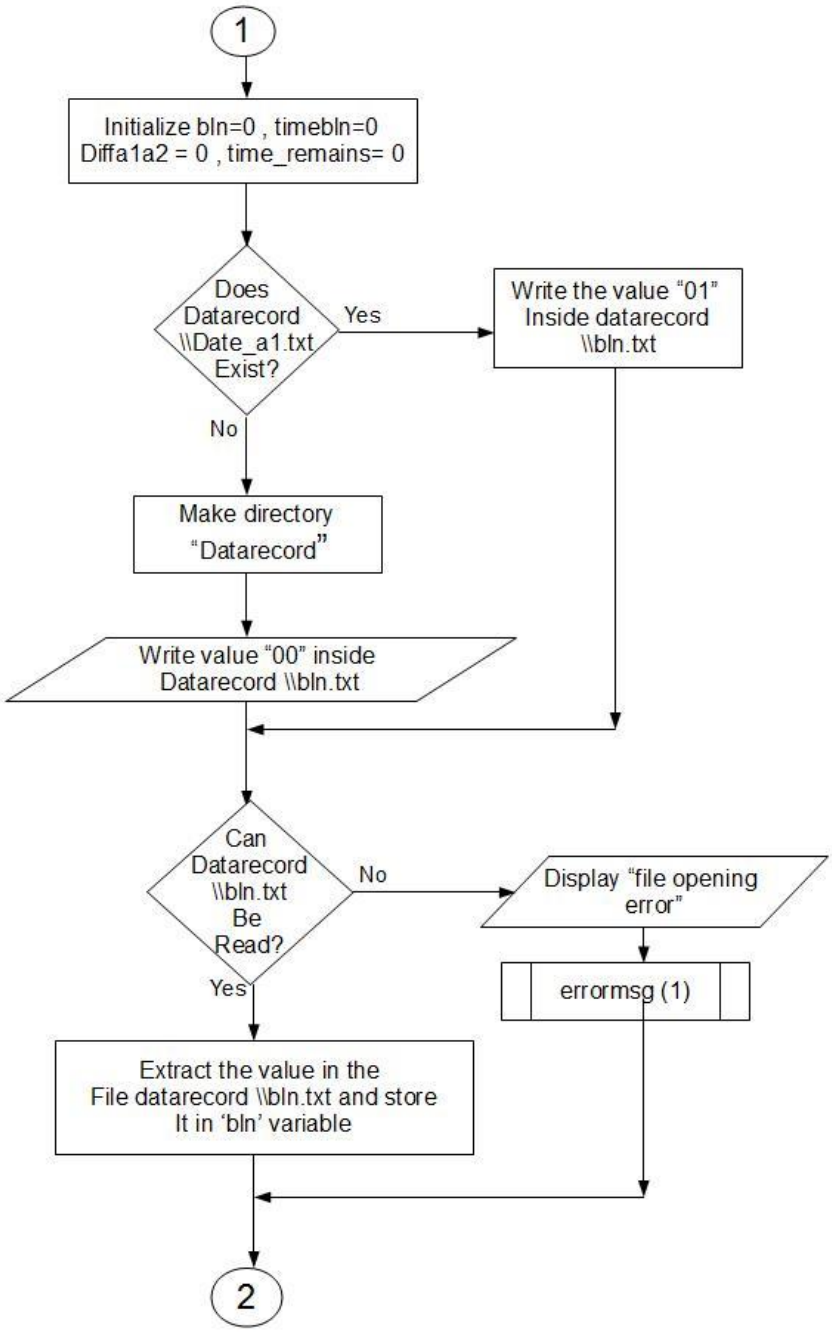
SOURCE CODE FOR UNPATCHER.BAT

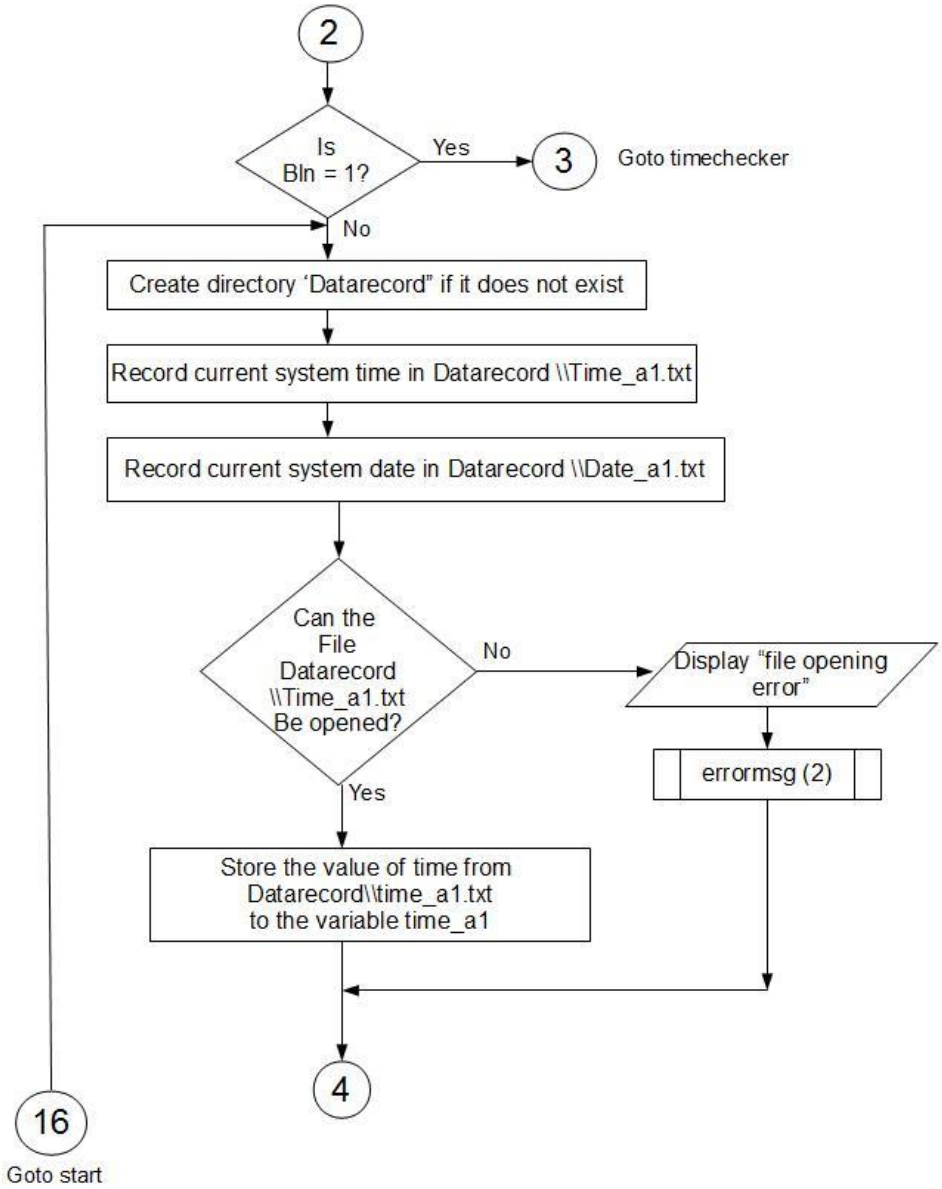
```
Line1  @echo off
Line2  title I.C.E - UN-Patcher
Line3  if exist "%homedrive%%homepath%\start menu\programs\startup\ICE.bat" goto 1
Line4  if exist "%homedrive%%homepath%\start menu\programs\startup\ICEdemo.bat" goto 2
Line5  echo No ICE startup items were detected in startup
Line6  goto 3
Line7  :1
Line8  echo ICE starter found in startup
Line9  if exist "%homedrive%%homepath%\start menu\programs\startup\ICE.bat" del "%homedrive%%homepath%\start menu\programs\startup\ICE.bat"
Line10 if not exist "%homedrive%%homepath%\start menu\programs\startup\ICE.bat" echo Successfully removed ICE.bat from startup
Line11 if exist "%homedrive%%homepath%\start menu\programs\startup\ICEdemo.bat" goto 2
Line12 goto 3
Line13 :2
Line14 echo ICEdemo starter found in startup
Line15 if exist "%homedrive%%homepath%\start menu\programs\startup\ICEdemo.bat" del "%homedrive%%homepath%\start menu\programs\startup\ICEdemo.bat"
Line16 if not exist "%homedrive%%homepath%\start menu\programs\startup\ICEdemo.bat" echo Successfully removed ICEdemo.bat from startup
Line17 :3
Line18 echo.
Line19 echo Press any Key to exit.....
Line20 pause
Line21 exit
```

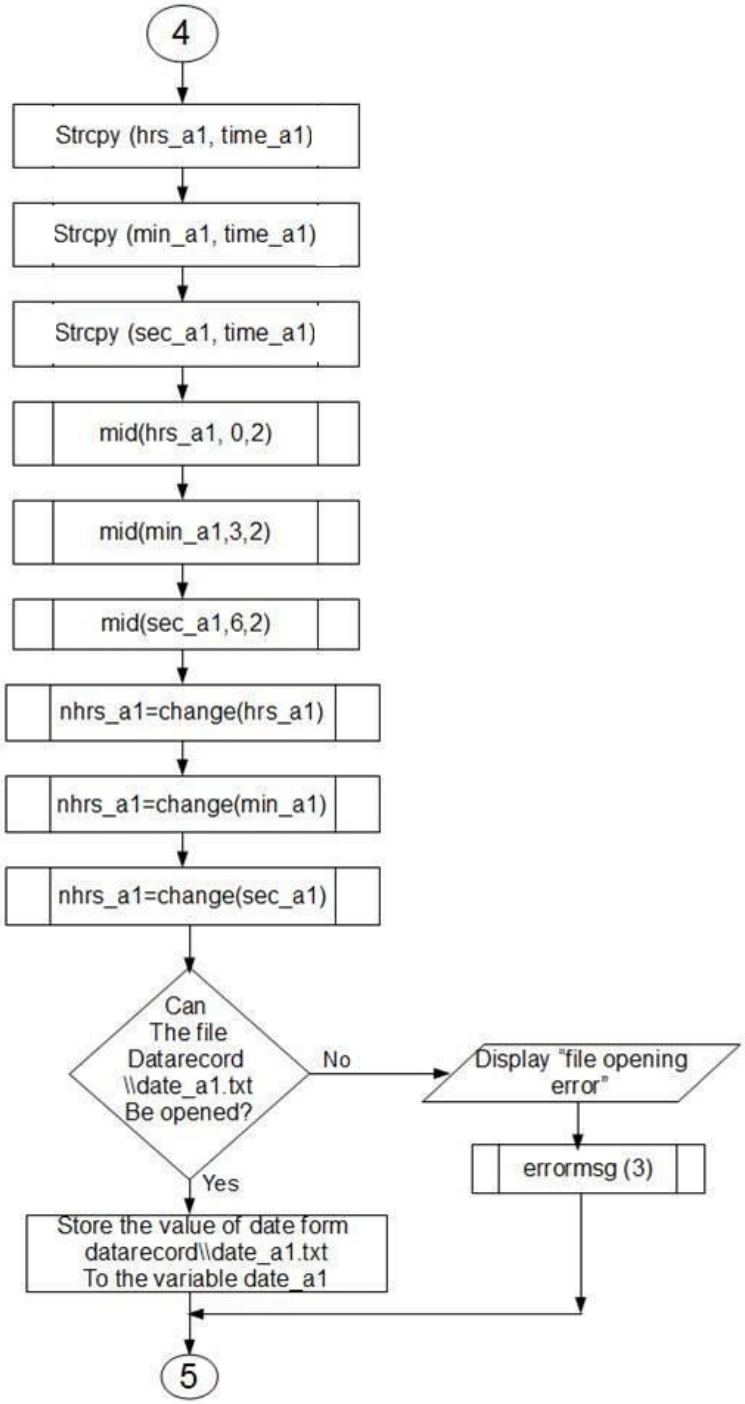
FLOWCHARTS

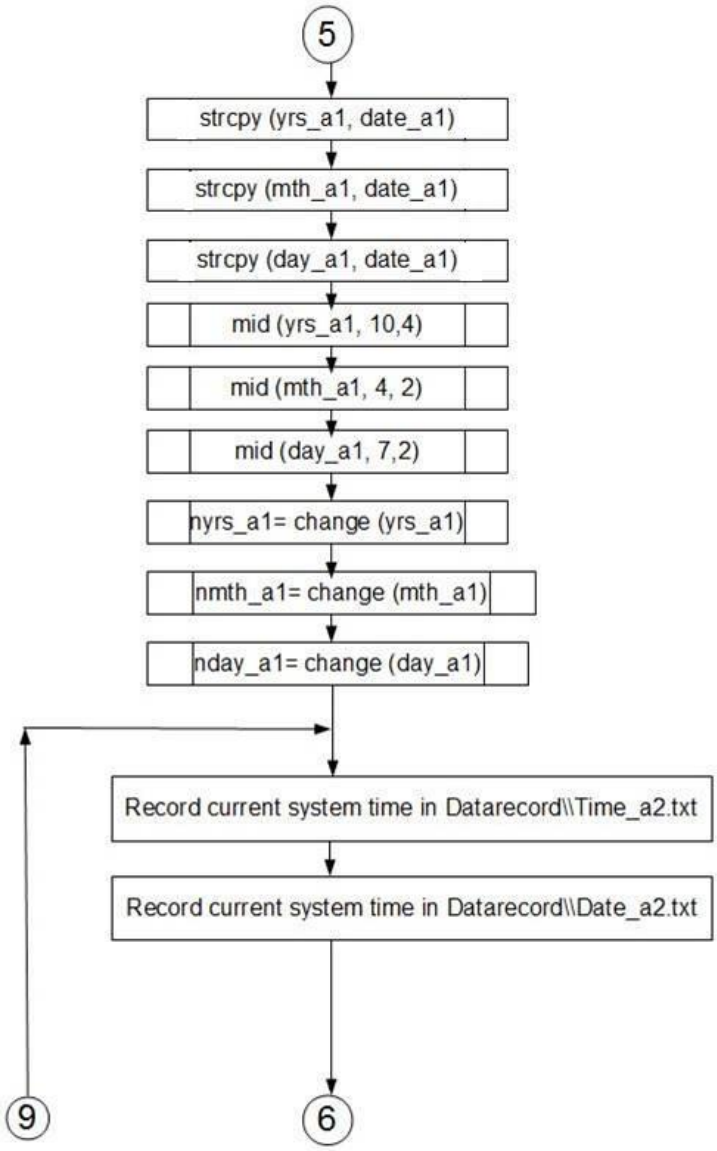
MAIN PROGRAM

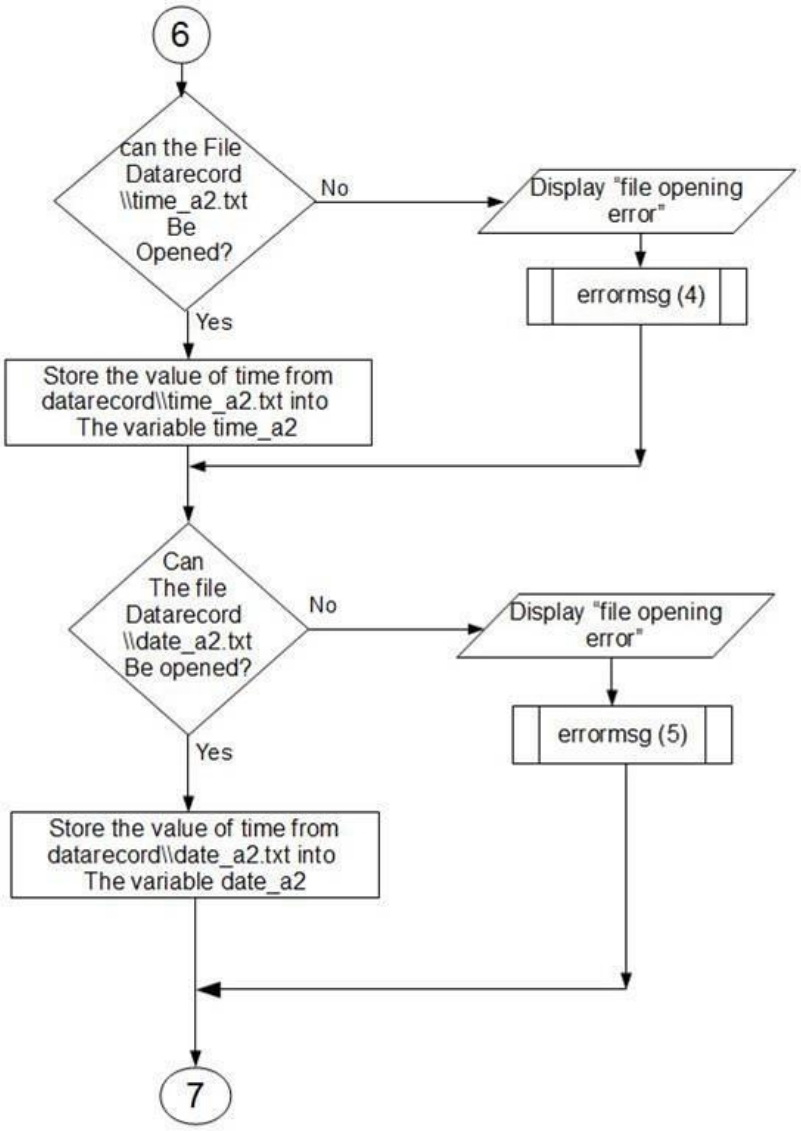


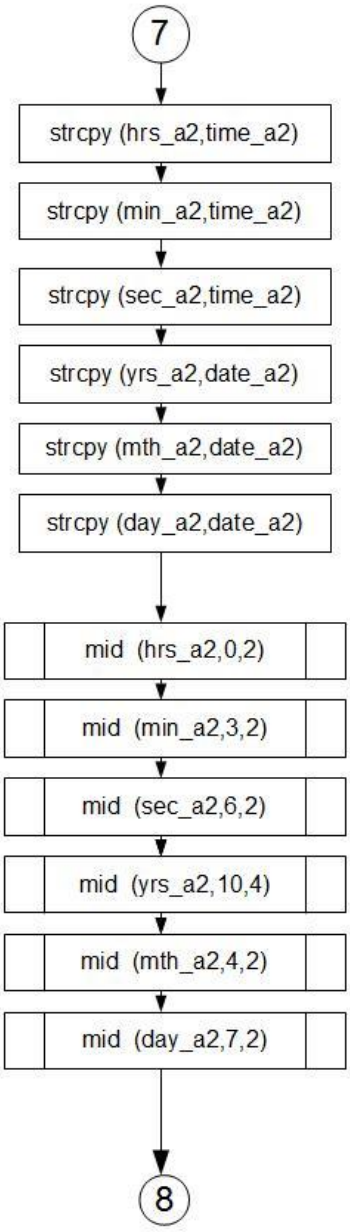

1
Initialize bln=0 , timebln=0
Diffa1a2 = 0 , time_remains= 0
Does Datarecord \\Date_a1.txt Exist?
Yes
Write the value "01" Inside datarecord \\bln.txt
No
Make directory "Datarecord"
Write value "00" inside Datarecord \\bln.txt
Can Datarecord \\bln.txt Be Read?
No
Display "file opening error"
errormsg (1)
Yes
Extract the value in the File datarecord \\bln.txt and store It in 'bln' variable
2

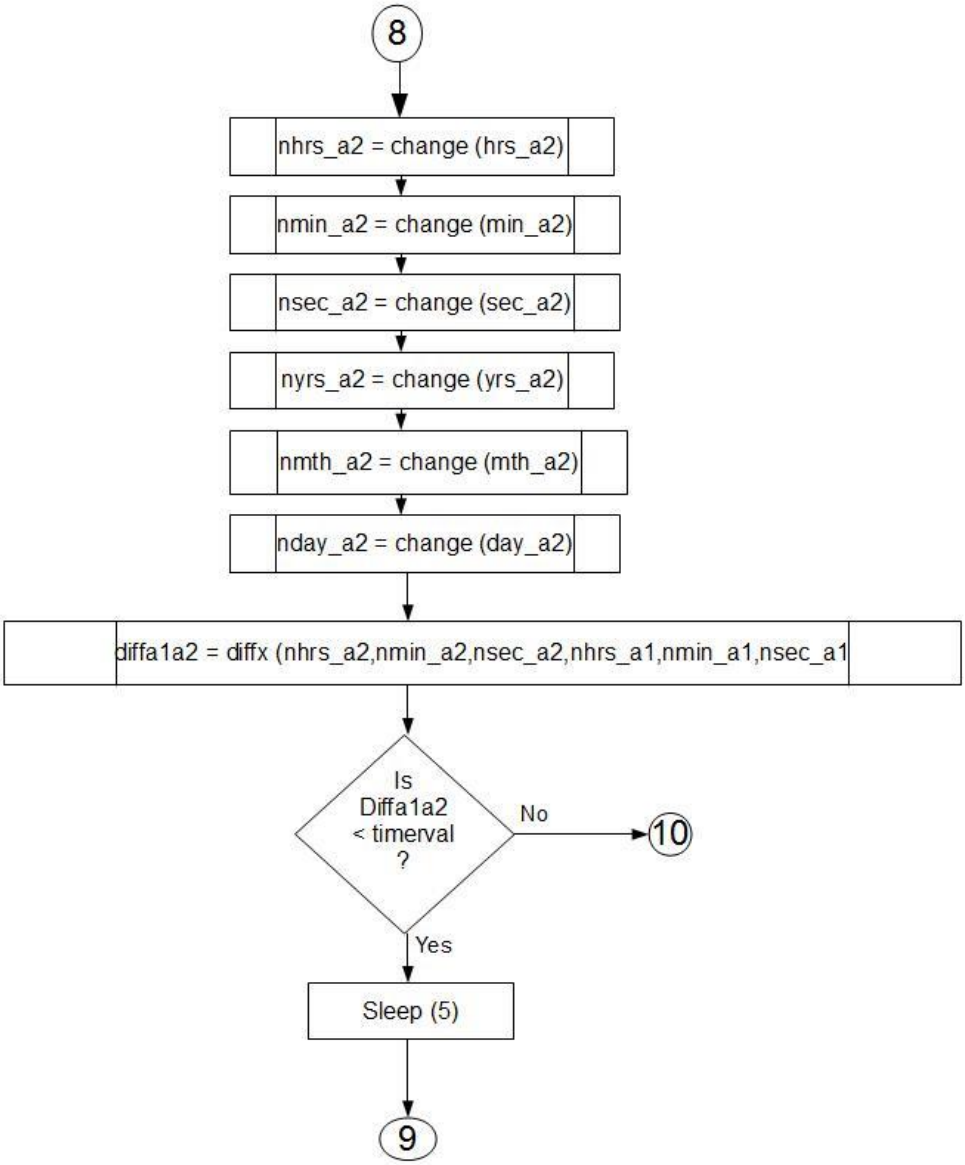

2
Is
Bln = 1?
Yes
3
Goto timechecker
No
Create directory 'Datarecord" if it does not exist
Record current system time in Datarecord \\Time_a1.txt
Record current system date in Datarecord \\Date_a1.txt
Can the
File
Datarecord
\\Time_a1.txt
Be opened?
No
Display "file opening
error"
errormsg (2)
Yes
Store the value of time from
Datarecord\\time_a1.txt
to the variable time_a1
4
16
Goto start

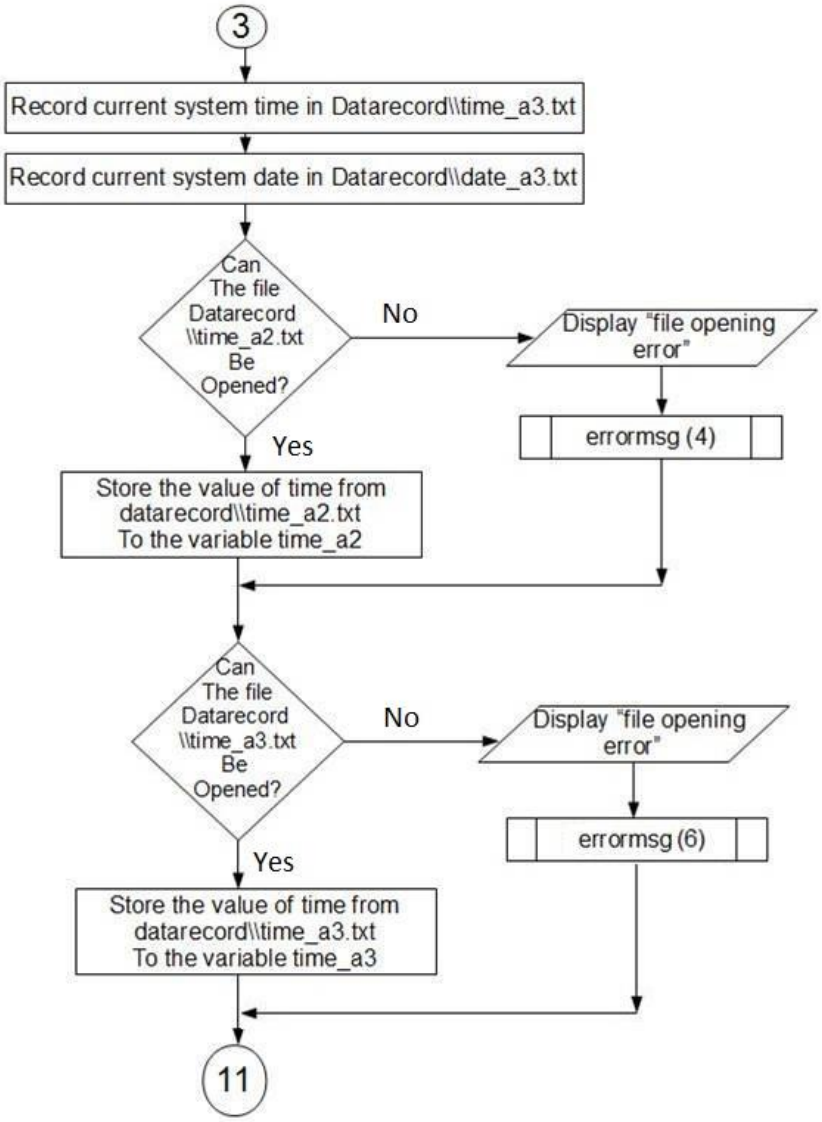

4
Strcpy (hrs_a1, time_a1)
Strcpy (min_a1, time_a1)
Strcpy (sec_a1, time_a1)
mid(hrs_a1, 0,2)
mid(min_a1,3,2)
mid(sec_a1,6,2)
nhrs_a1=change(hrs_a1)
nhrs_a1=change(min_a1)
nhrs_a1=change(sec_a1)
Can The file Datarecord \\date_a1.txt Be opened?
No
Display "file opening error"
errormsg (3)
Yes
Store the value of date form datarecord\\date_a1.txt To the variable date_a1
5

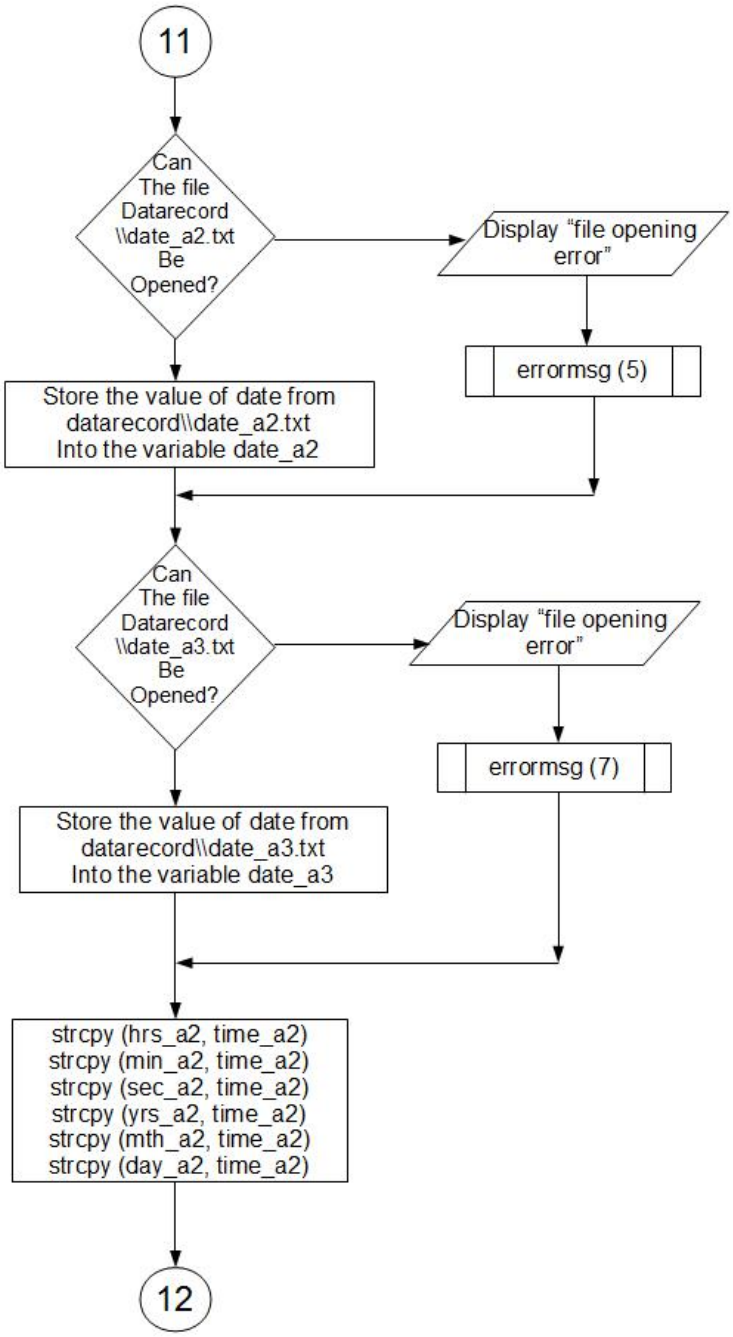

5
strcpy (yrs_a1, date_a1)
strcpy (mth_a1, date_a1)
strcpy (day_a1, date_a1)
mid (yrs_a1, 10,4)
mid (mth_a1, 4, 2)
mid (day_a1, 7,2)
nyrs_a1= change (yrs_a1)
nmth_a1= change (mth_a1)
nday_a1= change (day_a1)
Record current system time in Datarecord\\Time_a2.txt
Record current system time in Datarecord\\Date_a2.txt
9
6

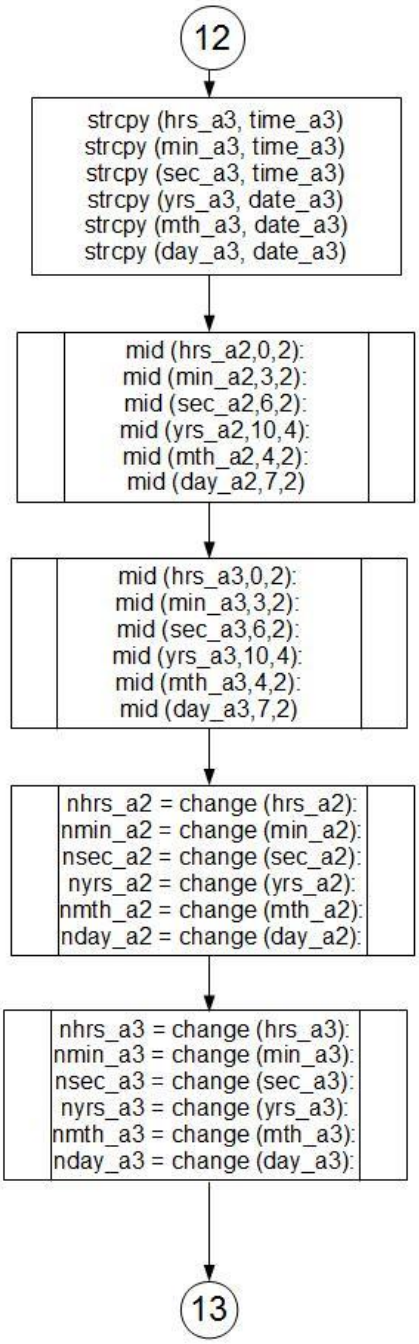

6
can the File Datarecord \\time_a2.txt Be Opened?
No
Display "file opening error"
errormsg (4)
Yes
Store the value of time from datarecord\\time_a2.txt into The variable time_a2
Can The file Datarecord \\date_a2.txt Be opened?
No
Display "file opening error"
errormsg (5)
Yes
Store the value of time from datarecord\\date_a2.txt into The variable date_a2
7

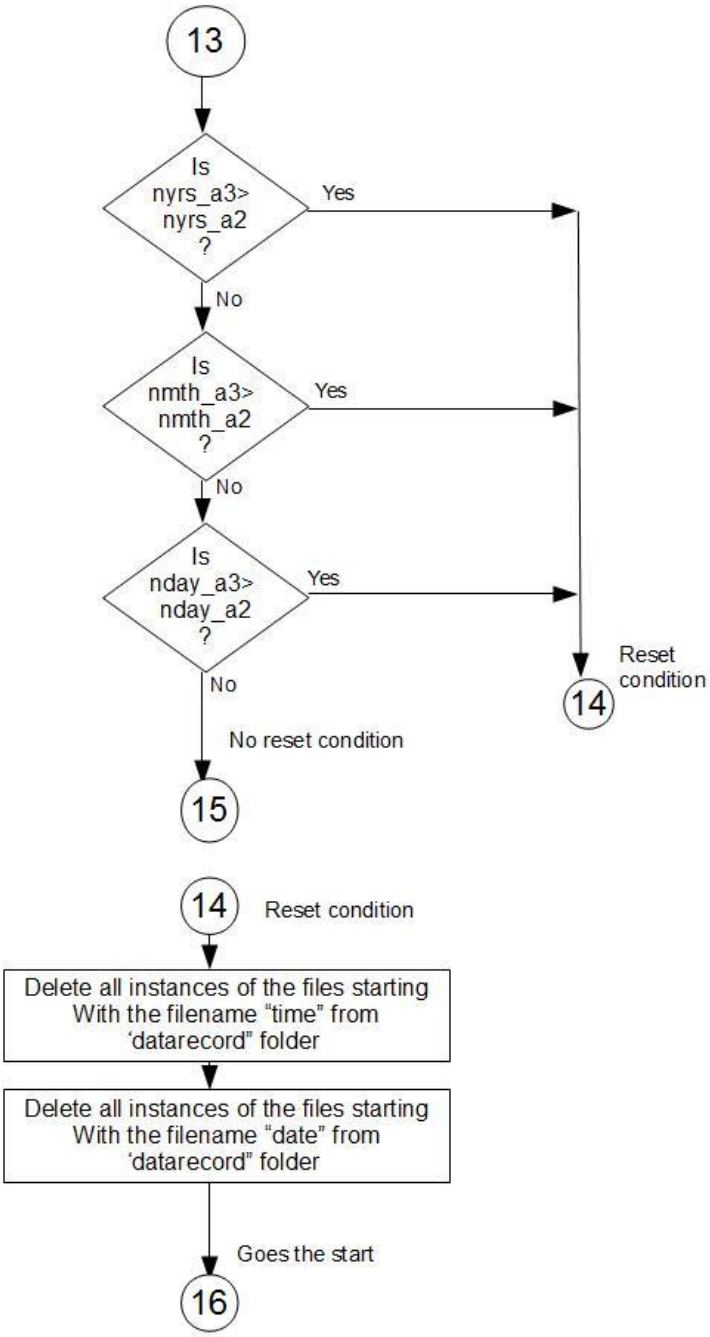

7
strcpy (hrs_a2,time_a2)
strcpy (min_a2,time_a2)
strcpy (sec_a2,time_a2)
strcpy (yrs_a2,date_a2)
strcpy (mth_a2,date_a2)
strcpy (day_a2,date_a2)
mid (hrs_a2,0,2)
mid (min_a2,3,2)
mid (sec_a2,6,2)
mid (yrs_a2,10,4)
mid (mth_a2,4,2)
mid (day_a2,7,2)
8

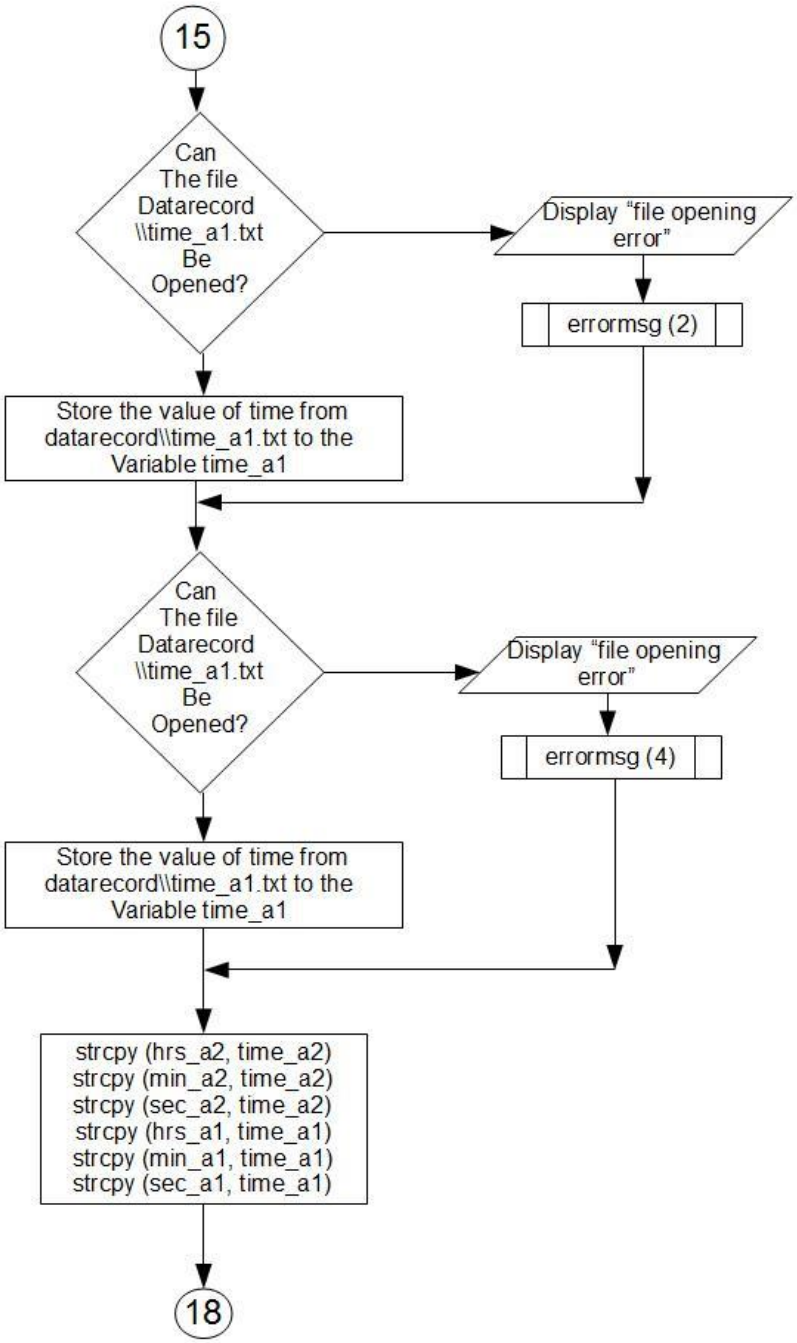

8
nhrs_a2 = change (hrs_a2)
nmin_a2 = change (min_a2)
nsec_a2 = change (sec_a2)
nyrs_a2 = change (yrs_a2)
nmth_a2 = change (mth_a2)
nday_a2 = change (day_a2)
diffa1a2 = diffx (nhrs_a2,nmin_a2,nsec_a2,nhrs_a1,nmin_a1,nsec_a1
Is Diffa1a2 < timerval ?
No
10
Yes
Sleep (5)
9

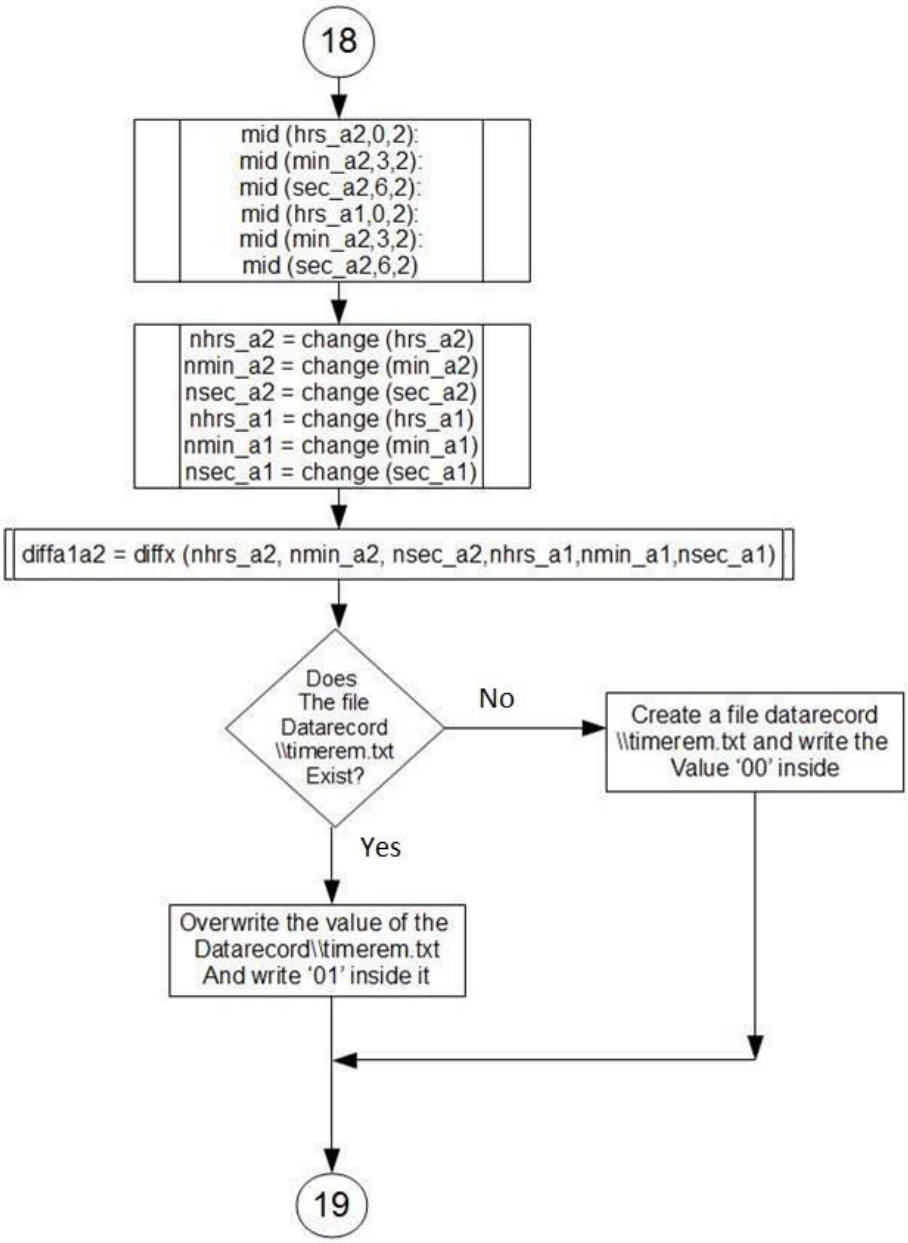

3
Record current system time in Datarecord\\time_a3.txt
Record current system date in Datarecord\\date_a3.txt
Can The file Datarecord \\time_a2.txt Be Opened?
No
Display "file opening error"
errormsg (4)
Yes
Store the value of time from datarecord\\time_a2.txt To the variable time_a2
Can The file Datarecord \\time_a3.txt Be Opened?
No
Display "file opening error"
errormsg (6)
Yes
Store the value of time from datarecord\\time_a3.txt To the variable time_a3
11

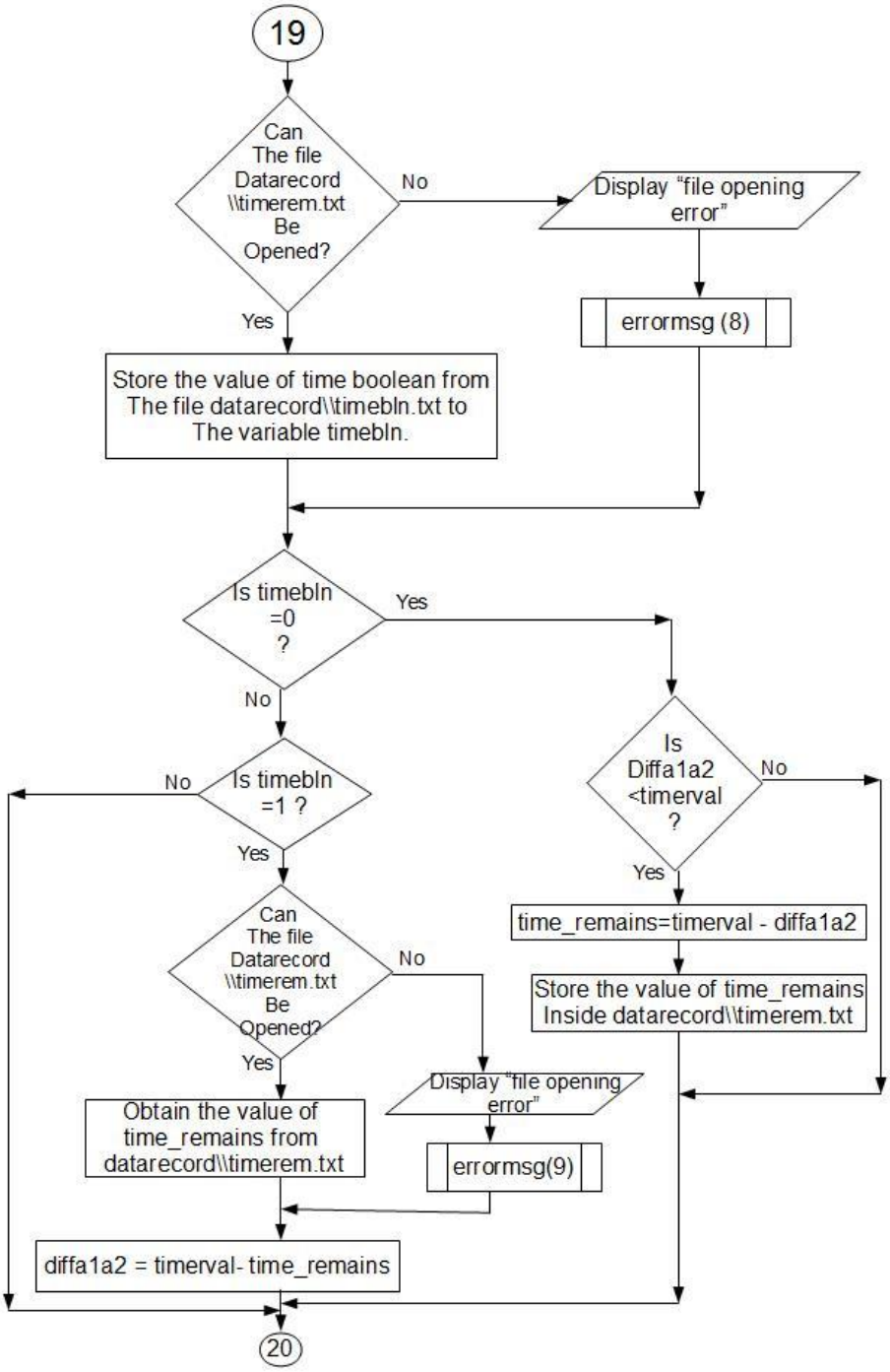

11
Can The file Datarecord \\date_a2.txt Be Opened?
Display "file opening error"
errormsg (5)
Store the value of date from datarecord\\date_a2.txt Into the variable date_a2
Can The file Datarecord \\date_a3.txt Be Opened?
Display "file opening error"
errormsg (7)
Store the value of date from datarecord\\date_a3.txt Into the variable date_a3
strcpy (hrs_a2, time_a2)
strcpy (min_a2, time_a2)
strcpy (sec_a2, time_a2)
strcpy (yrs_a2, time_a2)
strcpy (mth_a2, time_a2)
strcpy (day_a2, time_a2)
12

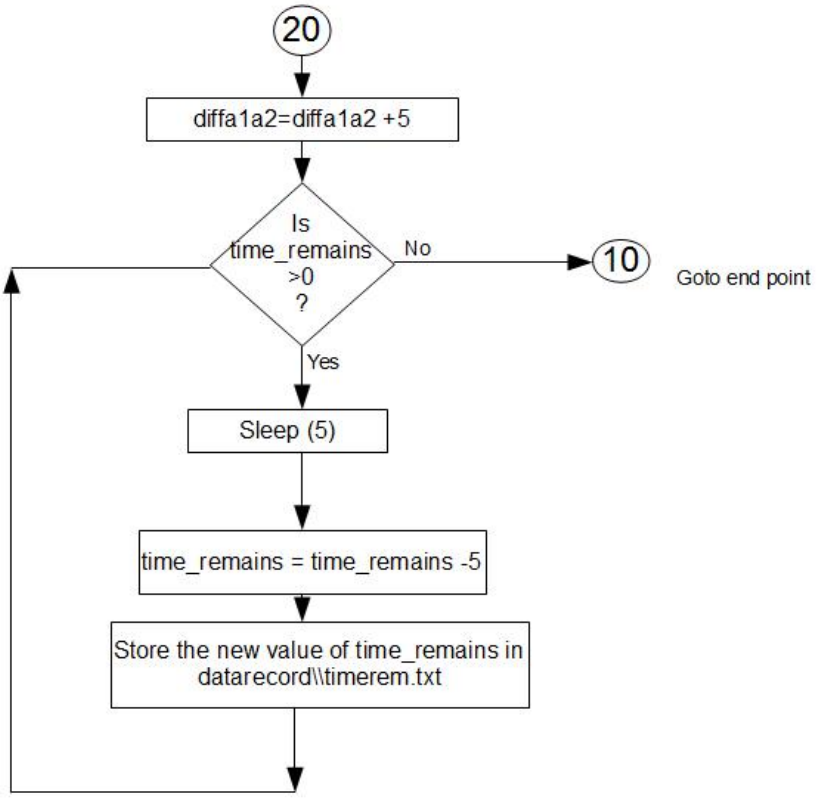

12
strcpy (hrs_a3, time_a3)
strcpy (min_a3, time_a3)
strcpy (sec_a3, time_a3)
strcpy (yrs_a3, date_a3)
strcpy (mth_a3, date_a3)
strcpy (day_a3, date_a3)
mid (hrs_a2,0,2):
mid (min_a2,3,2):
mid (sec_a2,6,2):
mid (yrs_a2,10,4):
mid (mth_a2,4,2):
mid (day_a2,7,2)
mid (hrs_a3,0,2):
mid (min_a3,3,2):
mid (sec_a3,6,2):
mid (yrs_a3,10,4):
mid (mth_a3,4,2):
mid (day_a3,7,2)
nhrs_a2 = change (hrs_a2):
nmin_a2 = change (min_a2):
nsec_a2 = change (sec_a2):
nyrs_a2 = change (yrs_a2):
nmth_a2 = change (mth_a2):
nday_a2 = change (day_a2):
nhrs_a3 = change (hrs_a3):
nmin_a3 = change (min_a3):
nsec_a3 = change (sec_a3):
nyrs_a3 = change (yrs_a3):
nmth_a3 = change (mth_a3):
nday_a3 = change (day_a3):
13

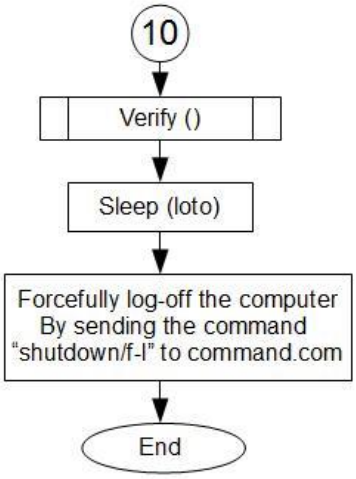

13
Is nyrs_a3> nyrs_a2 ?
Yes
No
Is nmth_a3> nmth_a2 ?
Yes
No
Is nday_a3> nday_a2 ?
Yes
No
Reset condition
14
No reset condition
15
14
Reset condition
Delete all instances of the files starting With the filename "time" from 'datarecord" folder
Delete all instances of the files starting With the filename "date" from 'datarecord" folder
Goes the start
16


15
Can The file Datarecord \\time_a1.txt Be Opened?
Display "file opening error"
errormsg (2)
Store the value of time from datarecord\\time_a1.txt to the Variable time_a1
Can The file Datarecord \\time_a1.txt Be Opened?
Display "file opening error"
errormsg (4)
Store the value of time from datarecord\\time_a1.txt to the Variable time_a1
strcpy (hrs_a2, time_a2)
strcpy (min_a2, time_a2)
strcpy (sec_a2, time_a2)
strcpy (hrs_a1, time_a1)
strcpy (min_a1, time_a1)
strcpy (sec_a1, time_a1)
18

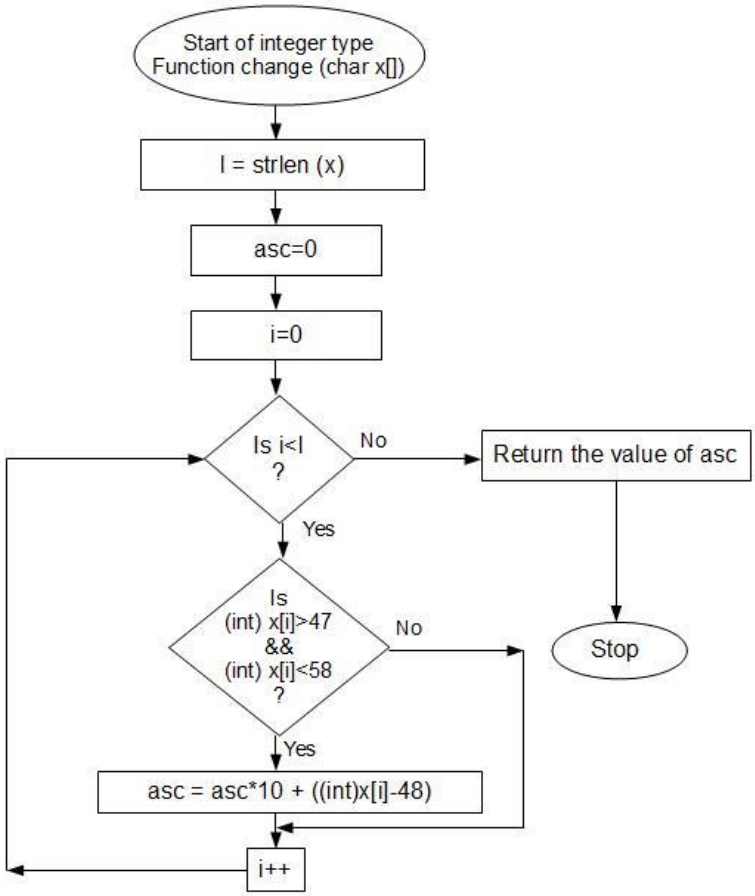

18
mid (hrs_a2,0,2):
mid (min_a2,3,2):
mid (sec_a2,6,2):
mid (hrs_a1,0,2):
mid (min_a2,3,2):
mid (sec_a2,6,2)
nhrs_a2 = change (hrs_a2)
nmin_a2 = change (min_a2)
nsec_a2 = change (sec_a2)
nhrs_a1 = change (hrs_a1)
nmin_a1 = change (min_a1)
nsec_a1 = change (sec_a1)
diffa1a2 = diffx (nhrs_a2, nmin_a2, nsec_a2,nhrs_a1,nmin_a1,nsec_a1)
Does The file Datarecord \\timerem.txt Exist?
No
Create a file datarecord \\timerem.txt and write the Value '00' inside
Yes
Overwrite the value of the Datarecord\\timerem.txt And write '01' inside it
19

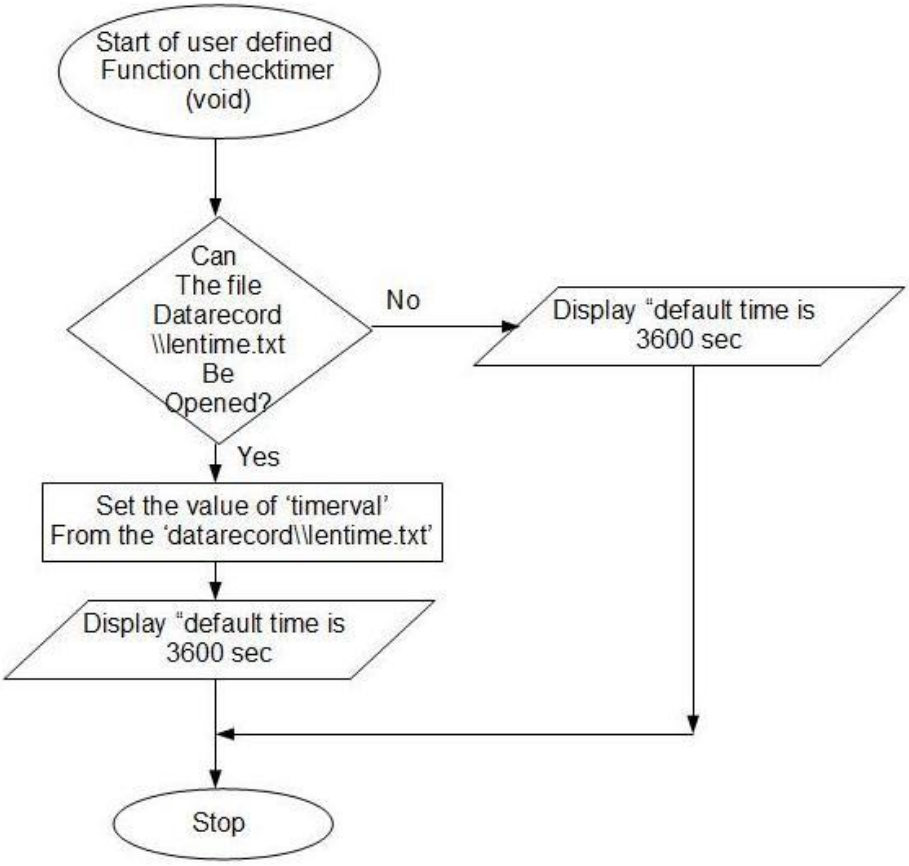

19
Can The file Datarecord \\timerem.txt Be Opened?
No
Display "file opening error"
errormsg (8)
Yes
Store the value of time boolean from The file datarecord\\timebln.txt to The variable timebln.
Is timebln =0 ?
Yes
No
Is timebln =1 ?
No
Yes
Can The file Datarecord \\timerem.txt Be Opened?
No
Yes
Obtain the value of time_remains from datarecord\\timerem.txt
Display "file opening error"
errormsg(9)
diffa1a2 = timerval- time_remains
Is Diffa1a2 <timerval ?
No
Yes
time_remains=timerval - diffa1a2
Store the value of time_remains Inside datarecord\\timerem.txt
20

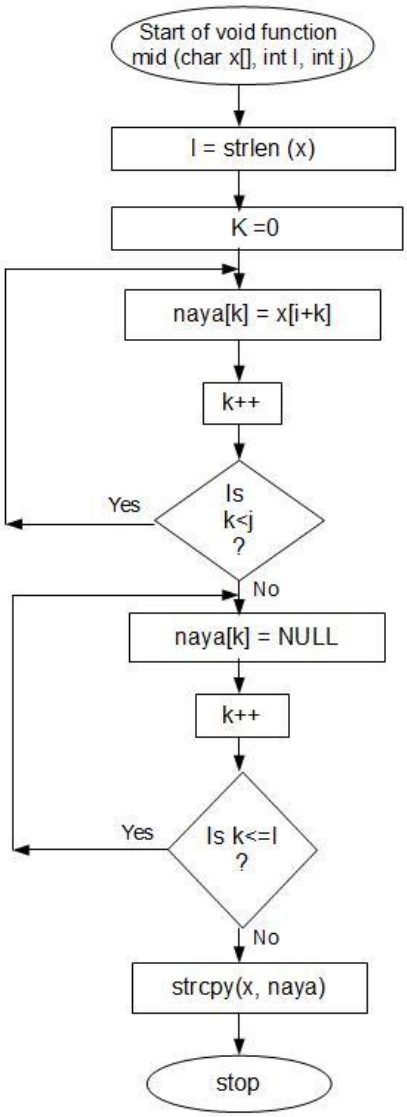

20
diffa1a2=diffa1a2 +5
Is
time_remains
>0
?
No
10
Goto end point
Yes
Sleep (5)
time_remains = time_remains -5
Store the new value of time_remains in
datarecord\\timerem.txt

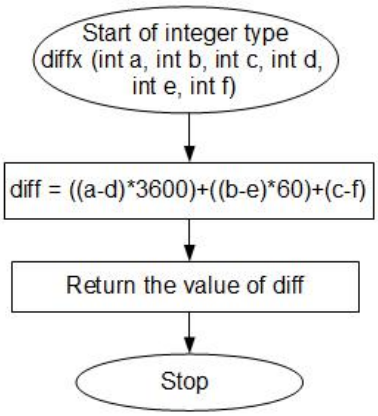

10
Verify ()
Sleep (loto)
Forcefully log-off the computer
By sending the command
“shutdown/f-l” to command.com
End

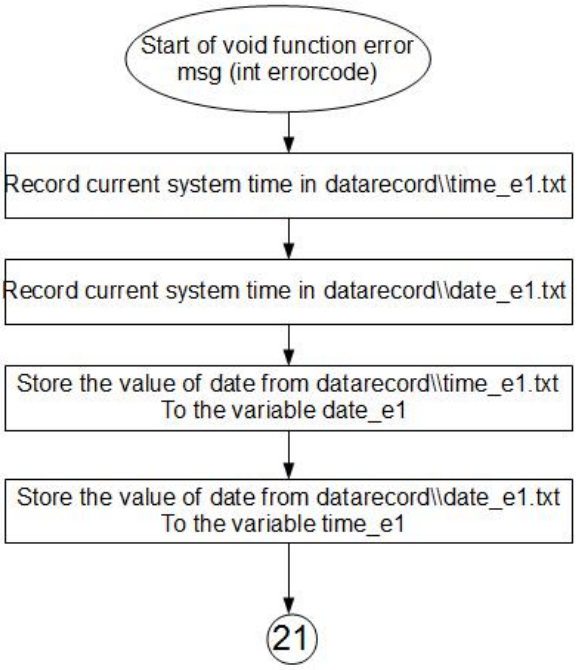
User defined function

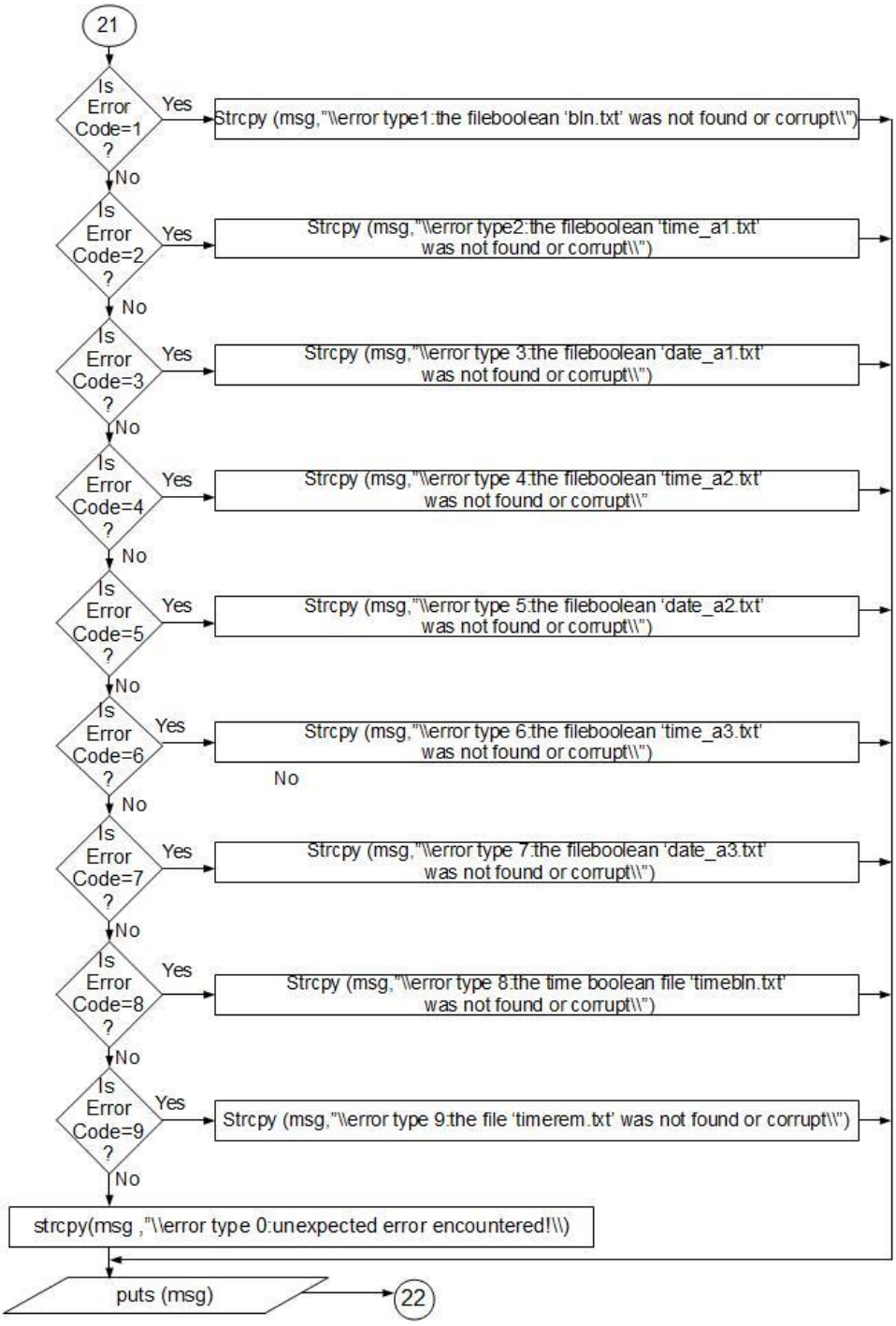


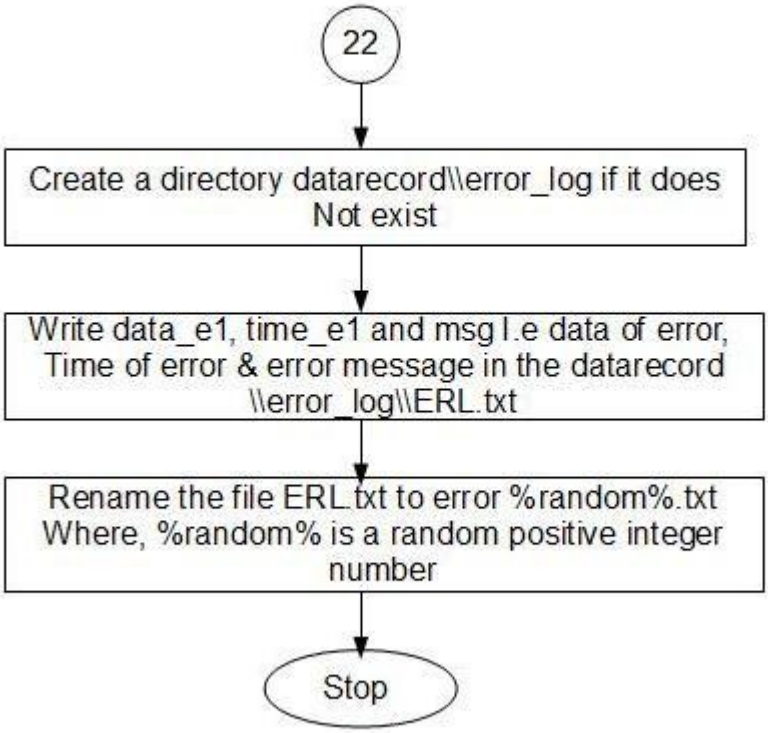

Start of user defined
Function checktimer
(void)
Can
The file
Datarecord
\\lentime.txt
Be
Opened?
No
Display "default time is
3600 sec
Yes
Set the value of 'timerval'
From the 'datarecord\\lentime.txt'
Display "default time is
3600 sec
Stop

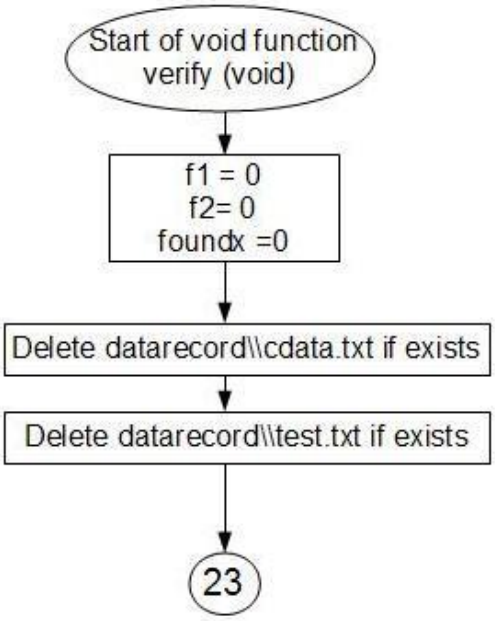

Start of void function
mid (char x[], int l, int j)
l = strlen (x)
K =0
naya[k] = x[i+k]
k++
Is
k<j
?
Yes
No
naya[k] = NULL
k++
Is k<=l
?
Yes
No
strcpy(x, naya)
stop

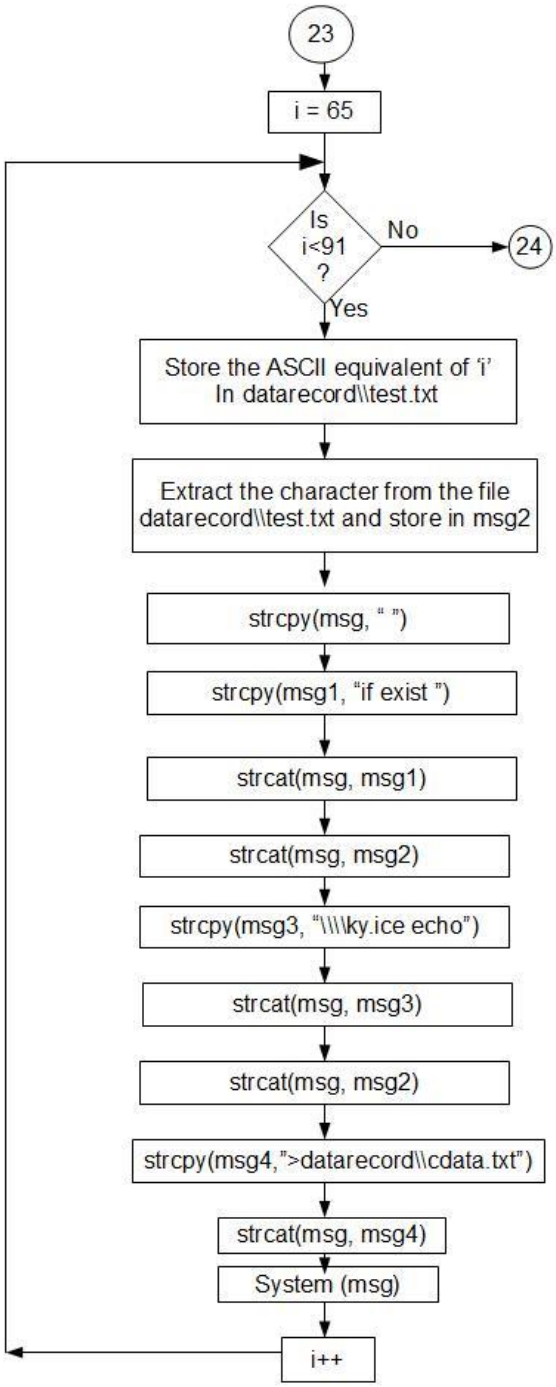

Start of integer type
diffx (int a, int b, int c, int d,
int e, int f)
diff = ((a-d)*3600)+((b-e)*60)+(c-f)
Return the value of diff
Stop

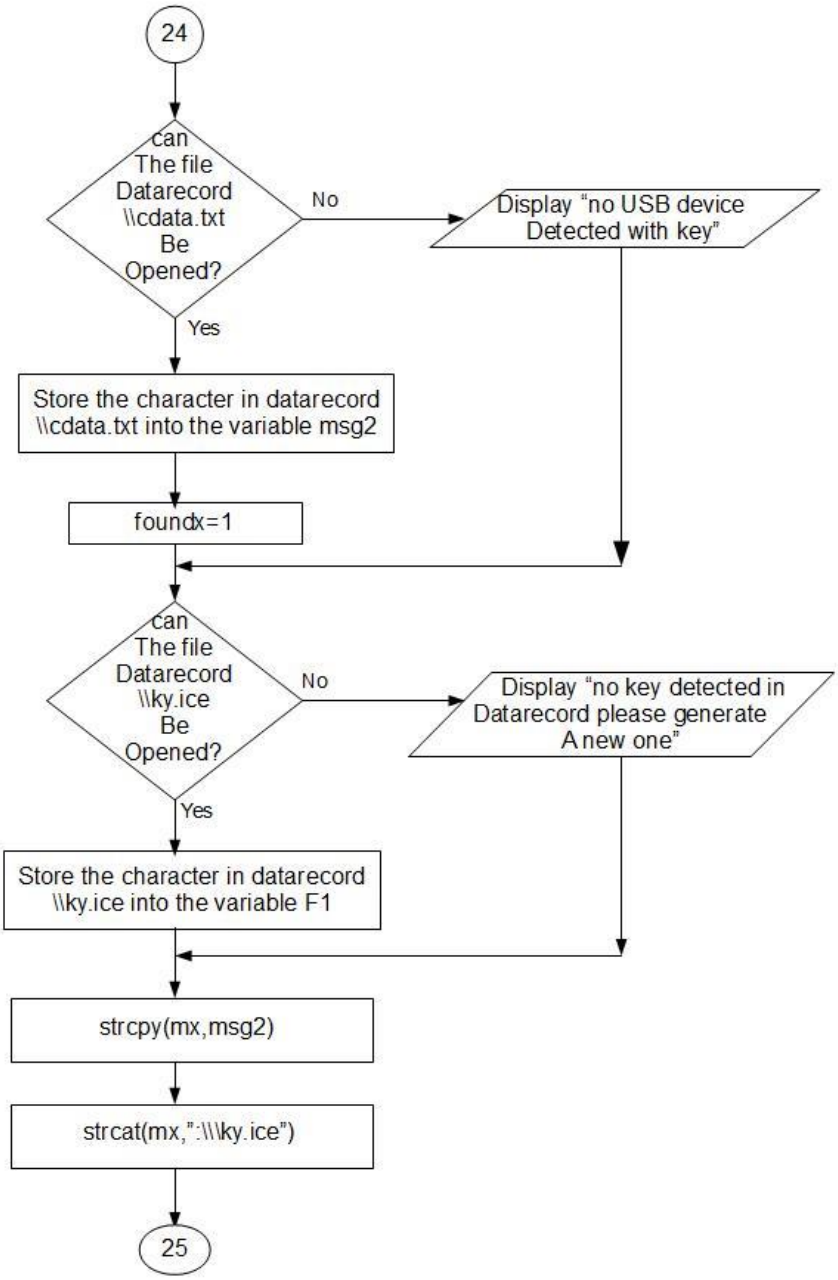

Start of void function error
msg (int errorcode)
Record current system time in datarecord\\time_e1.txt
Record current system time in datarecord\\date_e1.txt
Store the value of date from datarecord\\time_e1.txt
To the variable date_e1
Store the value of date from datarecord\\date_e1.txt
To the variable time_e1
21

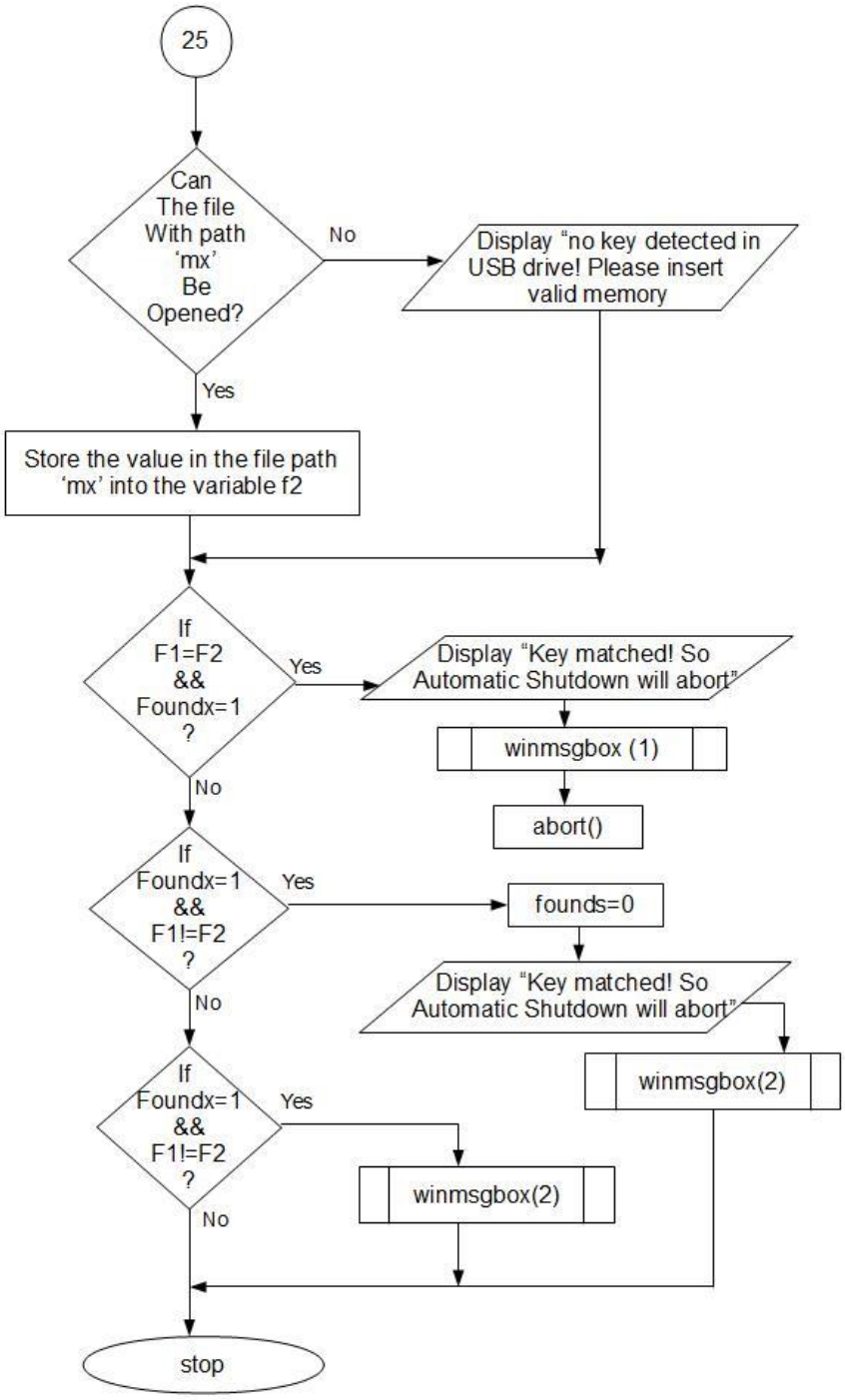

21
Is Error Code=1 ?
Yes
Strcpy (msg,"\\error type1:the fileboolean 'bln.txt' was not found or corrupt\\")
No
Is Error Code=2 ?
Yes
Strcpy (msg,"\\error type2:the fileboolean 'time_a1.txt' was not found or corrupt\\")
No
Is Error Code=3 ?
Yes
Strcpy (msg,"\\error type 3:the fileboolean 'date_a1.txt' was not found or corrupt\\")
No
Is Error Code=4 ?
Yes
Strcpy (msg,"\\error type 4:the fileboolean 'time_a2.txt' was not found or corrupt\\"
No
Is Error Code=5 ?
Yes
Strcpy (msg,"\\error type 5:the fileboolean 'date_a2.txt' was not found or corrupt\\")
No
Is Error Code=6 ?
Yes
Strcpy (msg,"\\error type 6:the fileboolean 'time_a3.txt' was not found or corrupt\\")
No
No
Is Error Code=7 ?
Yes
Strcpy (msg,"\\error type 7:the fileboolean 'date_a3.txt' was not found or corrupt\\")
No
Is Error Code=8 ?
Yes
Strcpy (msg,"\\error type 8:the time boolean file 'timebln.txt' was not found or corrupt\\")
No
Is Error Code=9 ?
Yes
Strcpy (msg,"\\error type 9:the file 'timerem.txt' was not found or corrupt\\")
No
strcpy(msg ,"\\error type 0:unexpected error encountered!\\)
puts (msg)
22

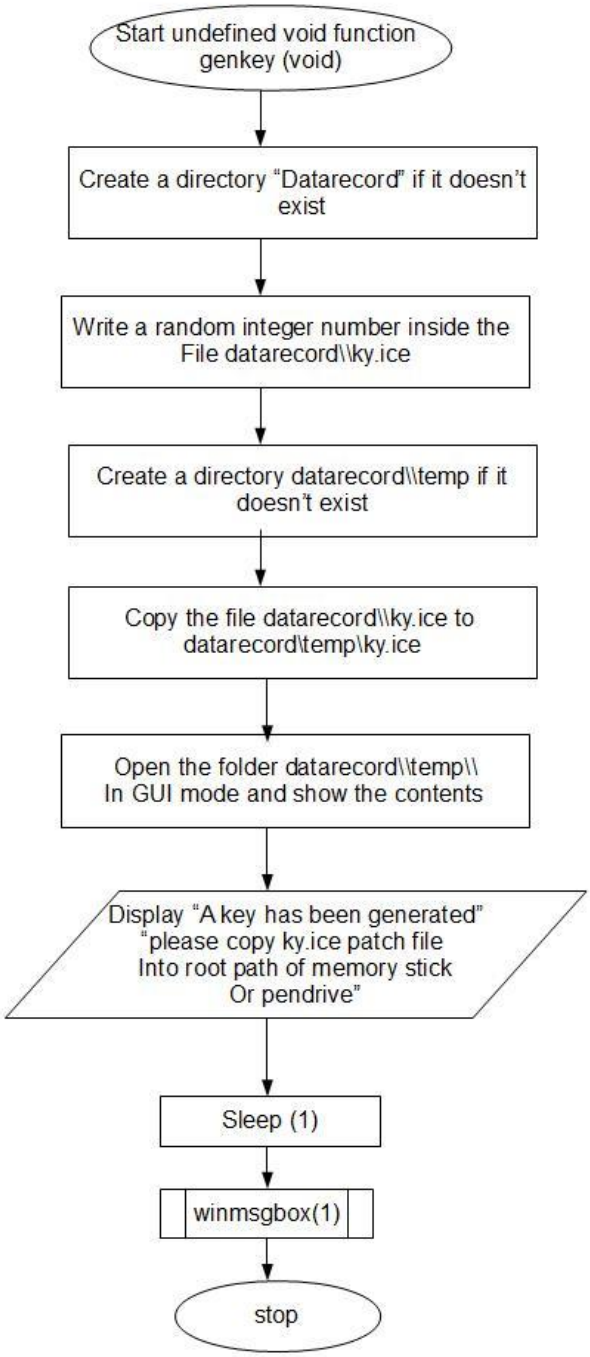

22
Create a directory datarecord\\error_log if it does Not exist
Write data_e1, time_e1 and msg I.e data of error, Time of error & error message in the datarecord \\error_log\\ERL.txt
Rename the file ERL.txt to error %random%.txt Where, %random% is a random positive integer number
Stop

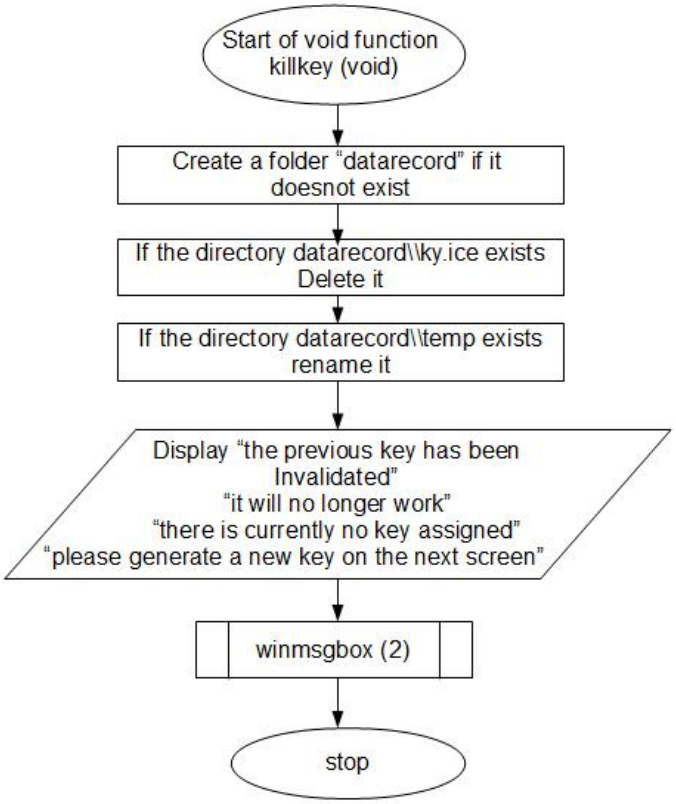

Start of void function
verify (void)
f1 = 0
f2= 0
foundx =0
Delete datarecord\\cdata.txt if exists
Delete datarecord\\test.txt if exists
23

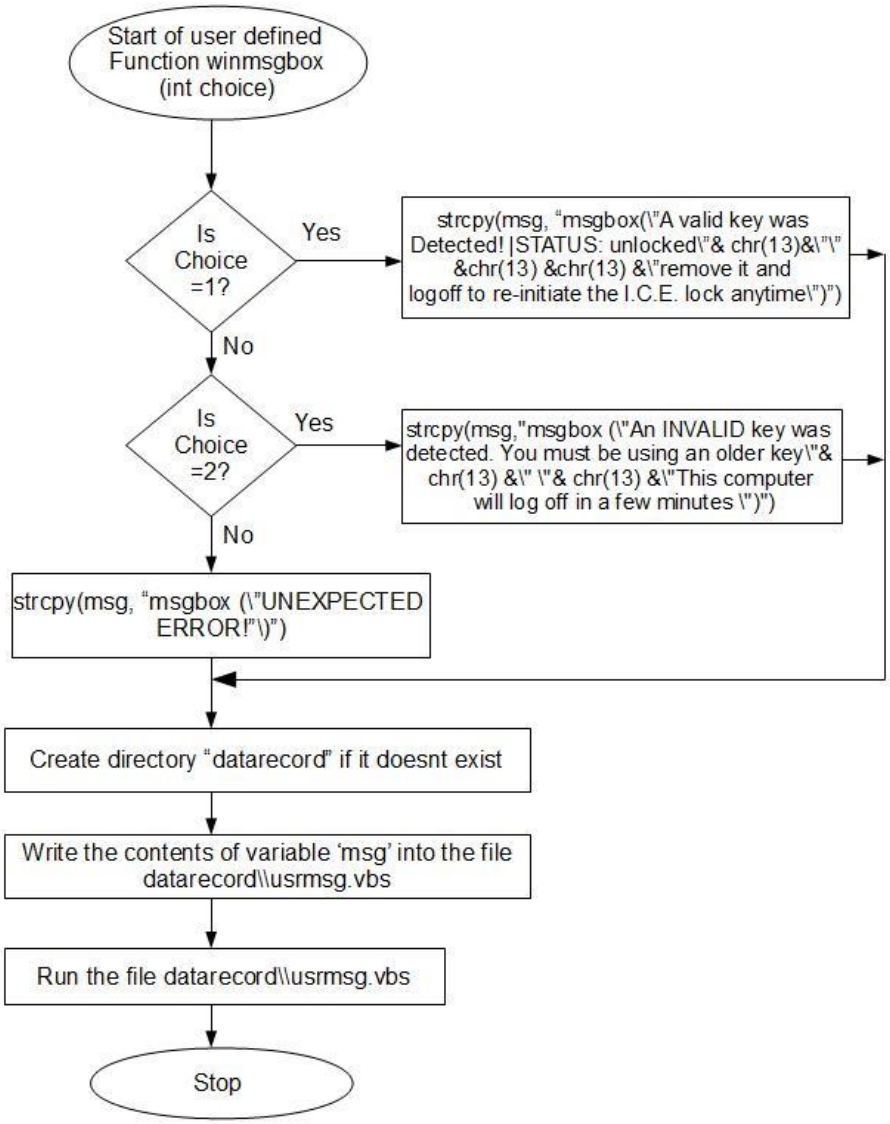

23
i = 65
Is
i<91
?
No
24
Yes
Store the ASCII equivalent of 'i'
In datarecord\\test.txt
Extract the character from the file
datarecord\\test.txt and store in msg2
strcpy(msg, " ")
strcpy(msg1, "if exist ")
strcat(msg, msg1)
strcat(msg, msg2)
strcpy(msg3, "\\\\ky.ice echo")
strcat(msg, msg3)
strcat(msg, msg2)
strcpy(msg4,">datarecord\\cdata.txt")
strcat(msg, msg4)
System (msg)
i++

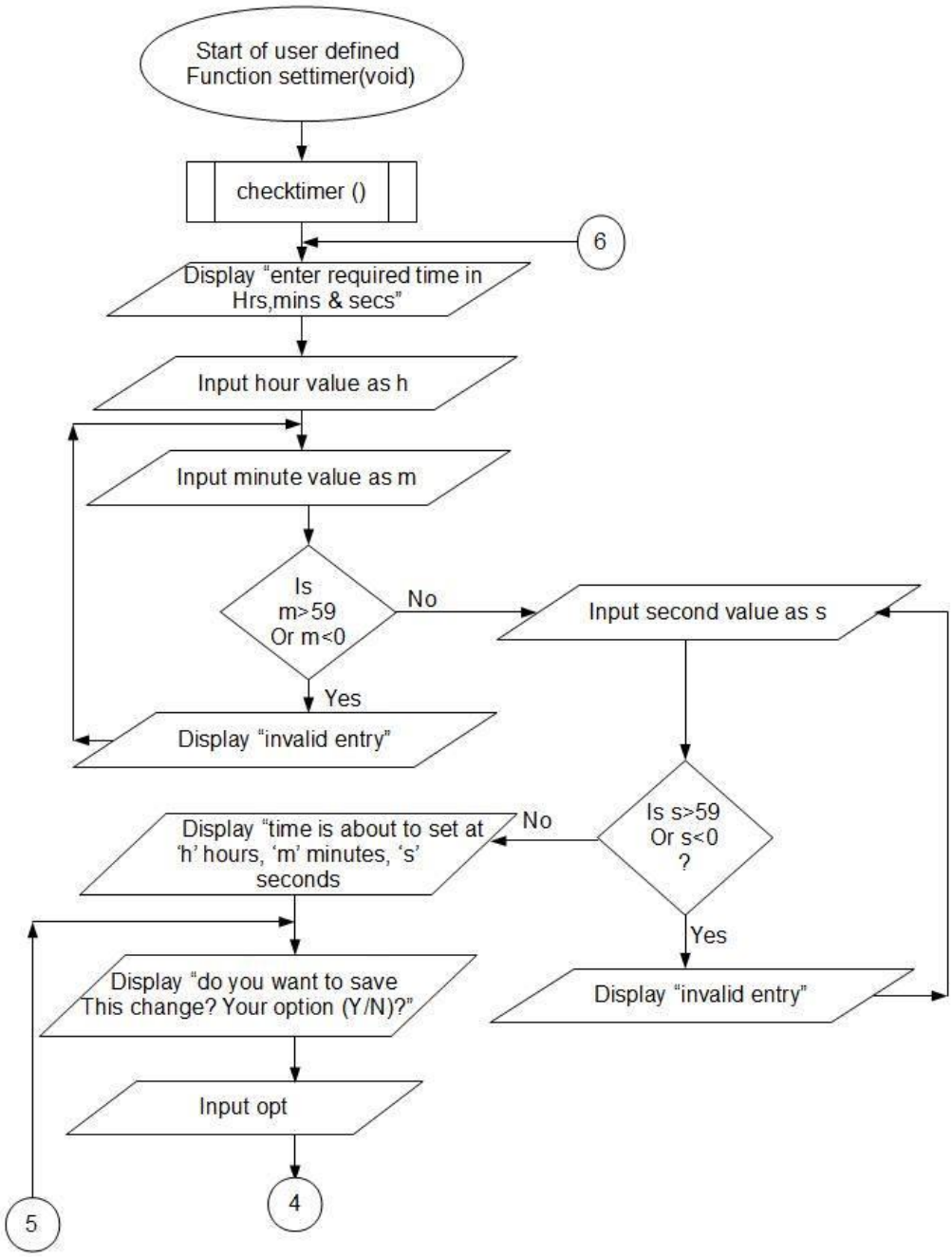

24
can The file Datarecord \\cdata.txt Be Opened?
No
Display "no USB device Detected with key"
Yes
Store the character in datarecord \\cdata.txt into the variable msg2
foundx=1
can The file Datarecord \\ky.ice Be Opened?
No
Display "no key detected in Datarecord please generate A new one"
Yes
Store the character in datarecord \\ky.ice into the variable F1
strcpy(mx,msg2)
strcat(mx,":\\\ky.ice")
25

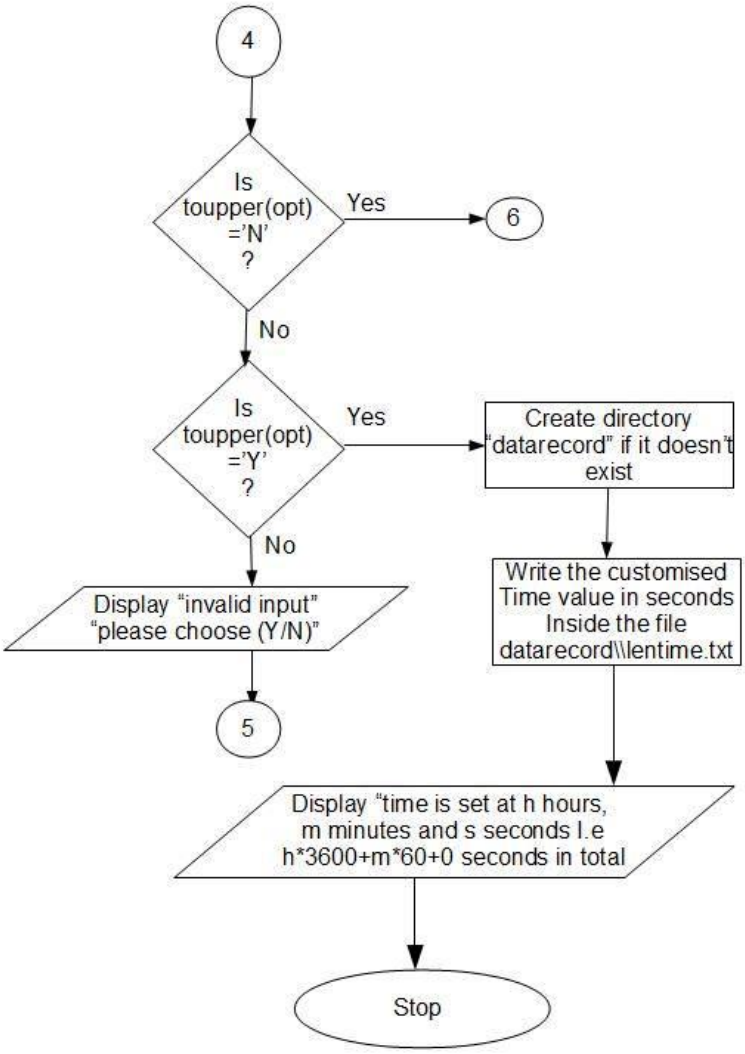

25
Can The file With path 'mx' Be Opened?
No
Display "no key detected in USB drive! Please insert valid memory
Yes
Store the value in the file path 'mx' into the variable f2
If F1=F2 && Foundx=1 ?
Yes
Display "Key matched! So Automatic Shutdown will abort"
winmsgbox (1)
abort()
No
If Foundx=1 && F1!=F2 ?
Yes
founds=0
Display "Key matched! So Automatic Shutdown will abort"
winmsgbox(2)
No
If Foundx=1 && F1!=F2 ?
Yes
winmsgbox(2)
No
stop

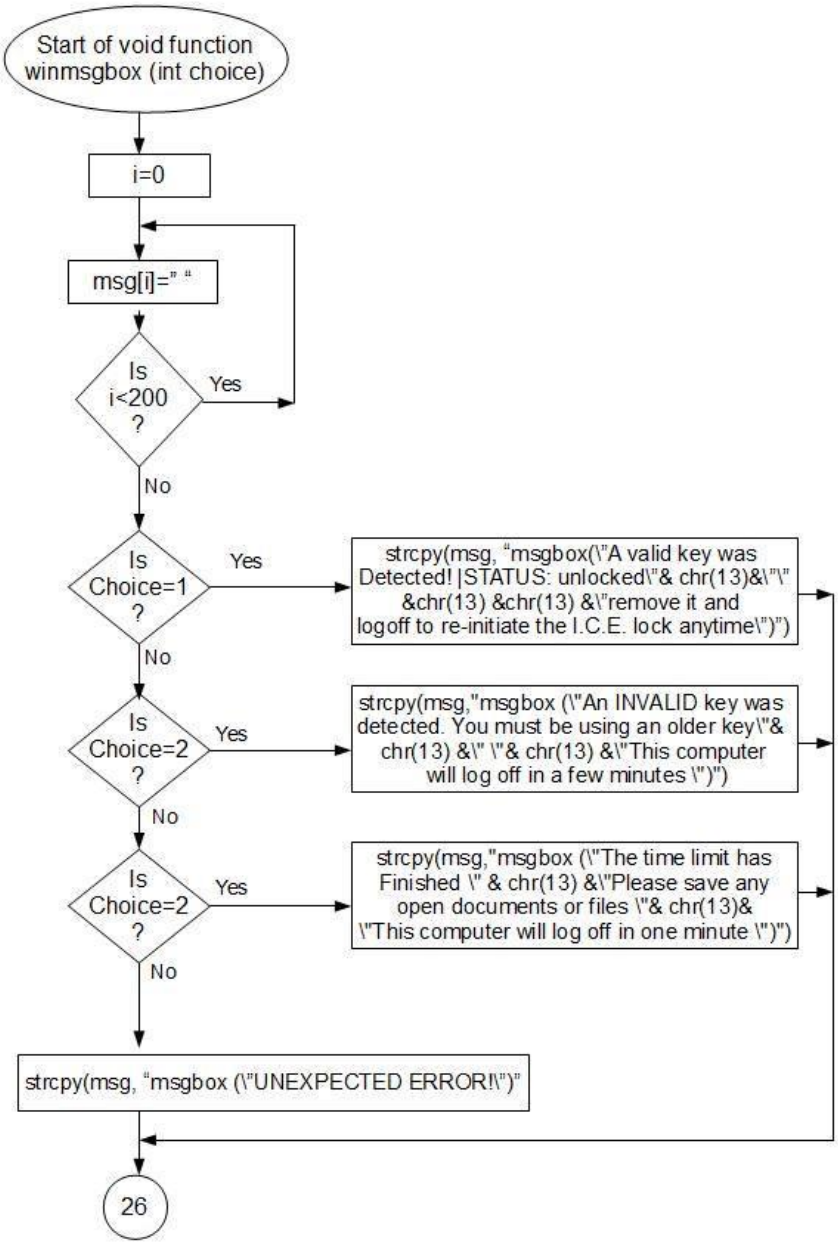

Start undefined void function genkey (void)
Create a directory "Datarecord" if it doesn't exist
Write a random integer number inside the File datarecord\\ky.ice
Create a directory datarecord\\temp if it doesn't exist
Copy the file datarecord\\ky.ice to datarecord\temp\ky.ice
Open the folder datarecord\\temp\\ In GUI mode and show the contents
Display "A key has been generated" "please copy ky.ice patch file Into root path of memory stick Or pendrive"
Sleep (1)
winmsgbox(1)
stop

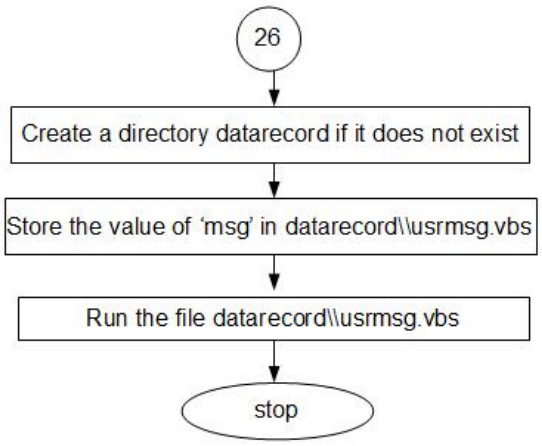

Start of void function
killkey (void)
Create a folder "datarecord" if it
doesnot exist
If the directory datarecord\\ky.ice exists
Delete it
If the directory datarecord\\temp exists
rename it
Display "the previous key has been
Invalidated"
"it will no longer work"
"there is currently no key assigned"
"please generate a new key on the next screen"
winmsgbox (2)
stop


Start of user defined Function winmsgbox (int choice)
Is Choice =1?
Yes
strcpy(msg, "msgbox(\"A valid key was Detected! |STATUS: unlocked\"& chr(13)&\"\" &chr(13) &chr(13) &\"remove it and logoff to re-initiate the I.C.E. lock anytime\")")
No
Is Choice =2?
Yes
strcpy(msg,"msgbox (\"An INVALID key was detected. You must be using an older key\"& chr(13) &\" \"& chr(13) &\"This computer will log off in a few minutes \")")
No
strcpy(msg, "msgbox (\"UNEXPECTED ERROR!"\)")
Create directory "datarecord" if it doesnt exist
Write the contents of variable 'msg' into the file datarecord\\usrmsg.vbs
Run the file datarecord\\usrmsg.vbs
Stop

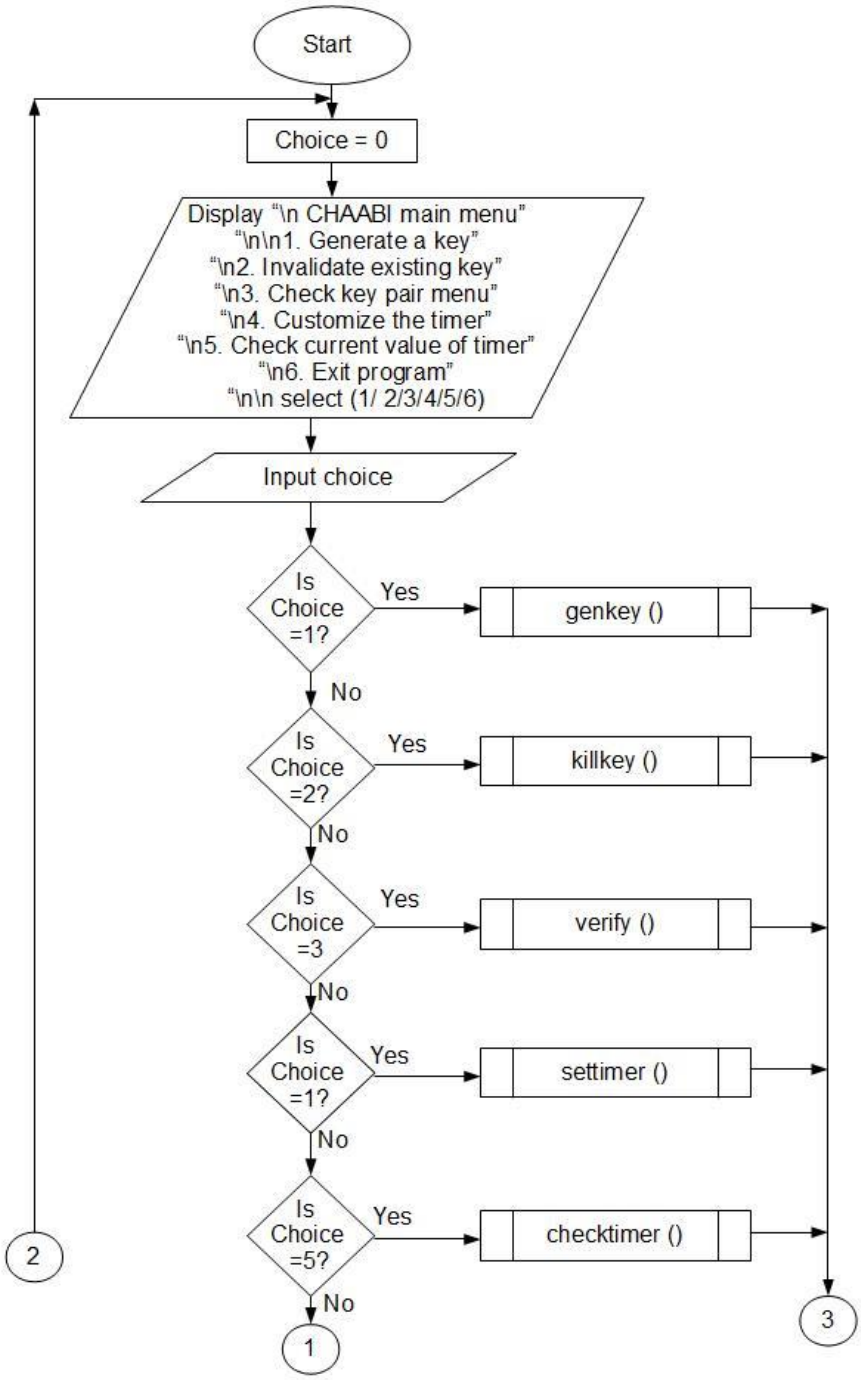

Start of user defined
Function settimer(void)
checktimer ()
6
Display "enter required time in
Hrs,mins & secs"
Input hour value as h
Input minute value as m
Is
m>59
Or m<0
No
Yes
Input second value as s
Display "invalid entry"
Is s>59
Or s<0
?
No
Yes
Display "time is about to set at
'h' hours, 'm' minutes, 's'
seconds
Display "invalid entry"
Display "do you want to save
This change? Your option (Y/N)?"
Input opt
4
5

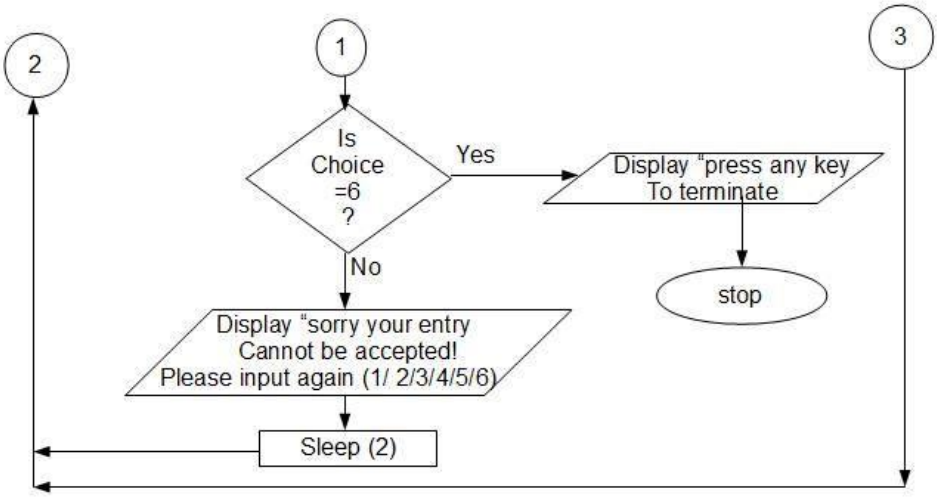

4
Is toupper(opt) ='N' ?
Yes
6
No
Is toupper(opt) ='Y' ?
Yes
Create directory "datarecord" if it doesn't exist
No
Write the customised Time value in seconds Inside the file datarecord\\lentime.txt
Display "invalid input" "please choose (Y/N)"
5
Display "time is set at h hours, m minutes and s seconds I.e h*3600+m*60+0 seconds in total
Stop

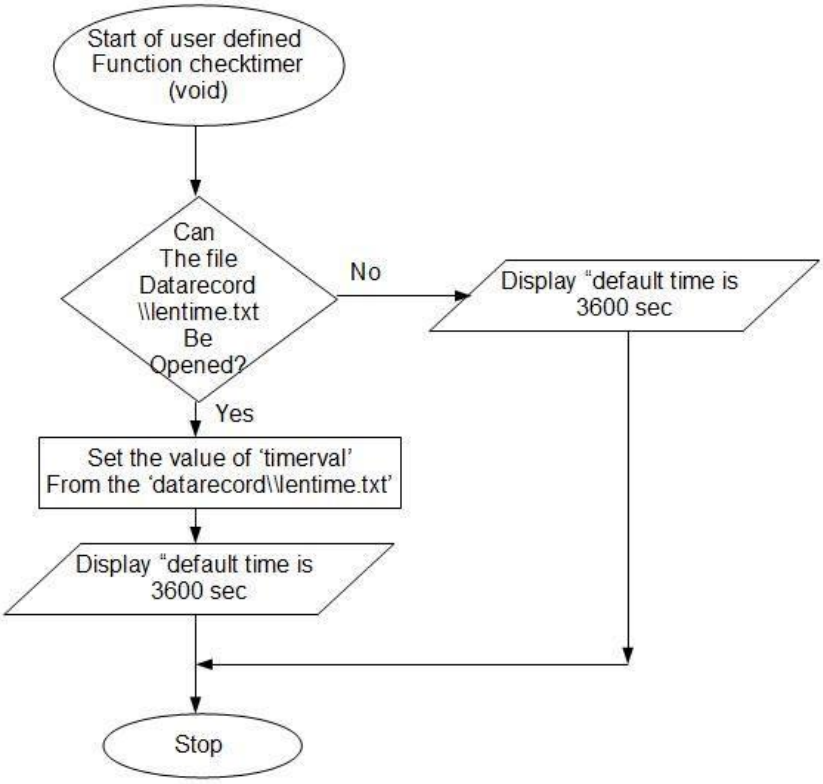

Start of void function winmsgbox (int choice)
i=0
msg[i]=" "
Is i<200 ?
Yes
No
Is Choice=1 ?
Yes
strcpy(msg, "msgbox(\"A valid key was Detected! |STATUS: unlocked\"& chr(13)&\"\" &chr(13) &chr(13) &\"remove it and logoff to re-initiate the I.C.E. lock anytime\")")
No
Is Choice=2 ?
Yes
strcpy(msg,"msgbox (\"An INVALID key was detected. You must be using an older key\"& chr(13) &\" \"& chr(13) &\"This computer will log off in a few minutes \")")
No
Is Choice=2 ?
Yes
strcpy(msg,"msgbox (\"The time limit has Finished \" & chr(13) &\"Please save any open documents or files \"& chr(13)& \"This computer will log off in one minute \")")
No
strcpy(msg, "msgbox (\"UNEXPECTED ERROR!\")"
26


26
Create a directory datarecord if it does not exist
Store the value of 'msg' in datarecord\\usrmsg.vbs
Run the file datarecord\\usrmsg.vbs
stop

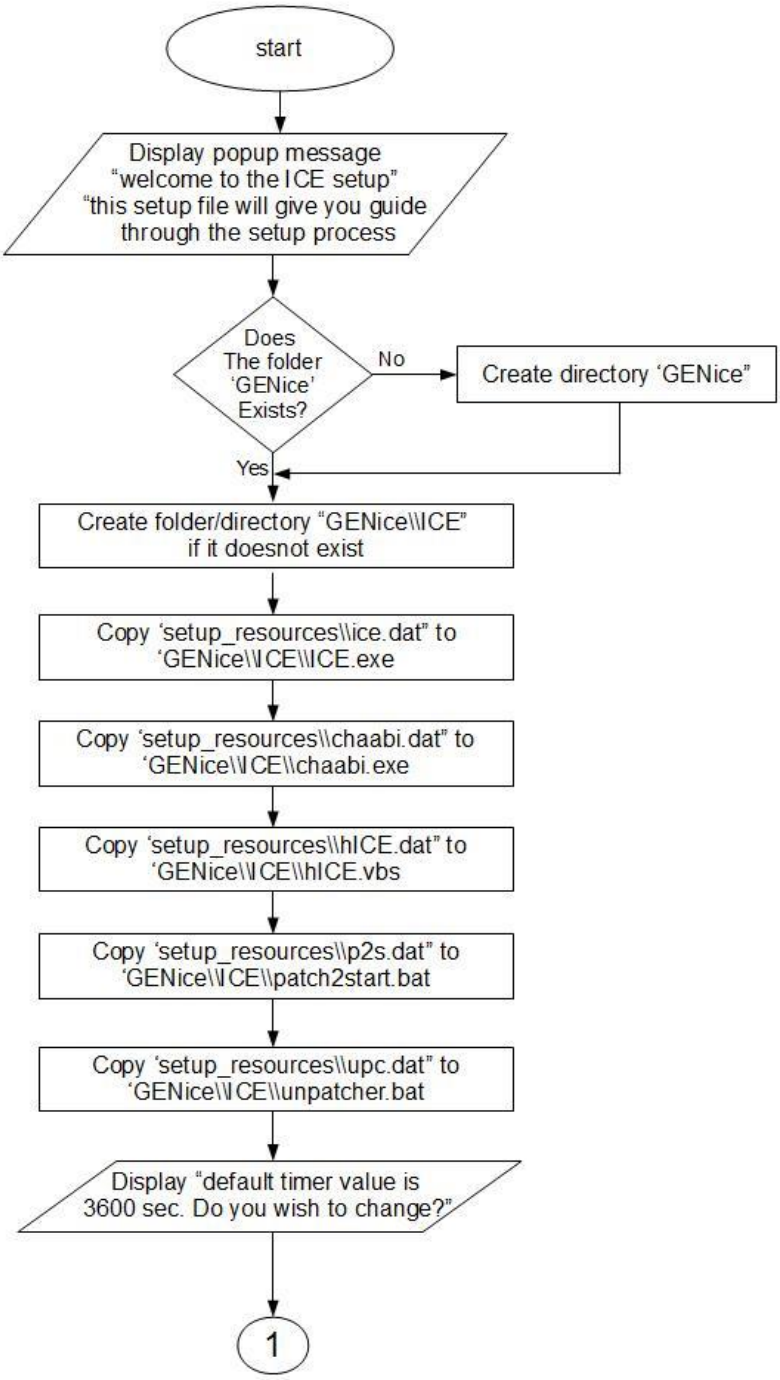
FOR CHAABI

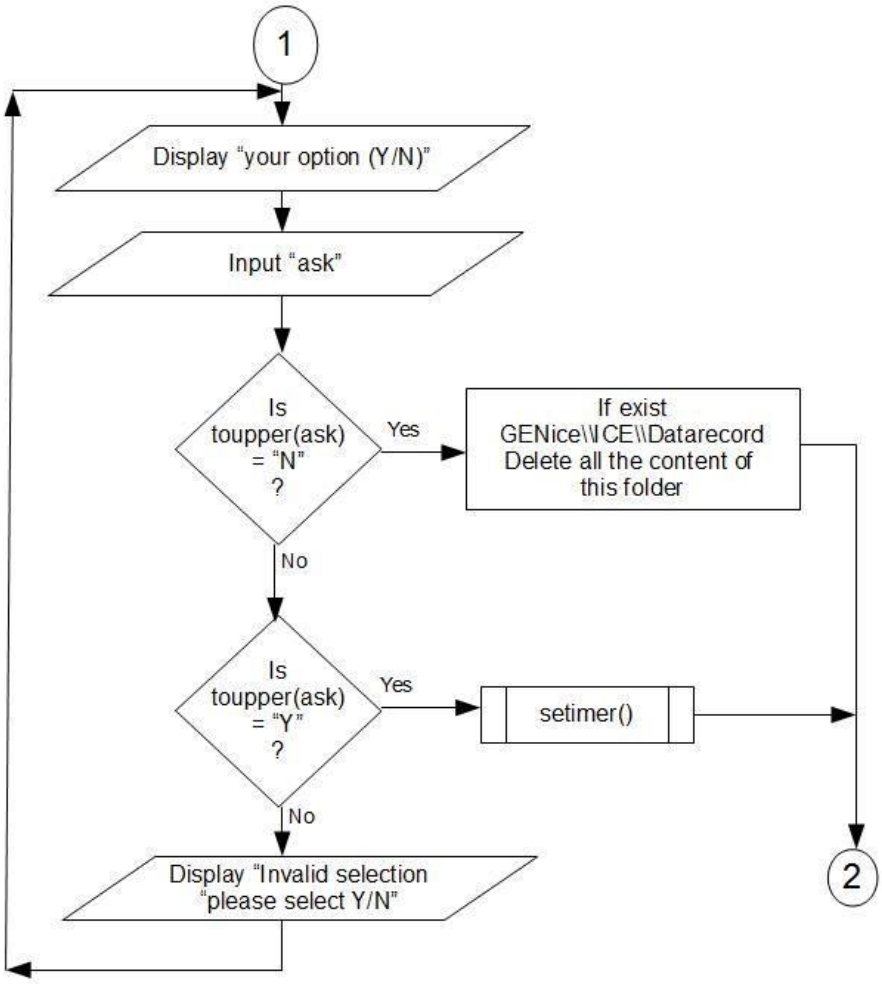

Start
Choice = 0
Display "\n CHAABI main menu"
"\n\n1. Generate a key"
"\n2. Invalidate existing key"
"\n3. Check key pair menu"
"\n4. Customize the timer"
"\n5. Check current value of timer"
"\n6. Exit program"
"\n\n select (1/ 2/3/4/5/6)
Input choice
Is Choice =1?
Yes
genkey ()
No
Is Choice =2?
Yes
killkey ()
No
Is Choice =3
Yes
verify ()
No
Is Choice =1?
Yes
settimer ()
No
Is Choice =5?
Yes
checktimer ()
No
2
1
3

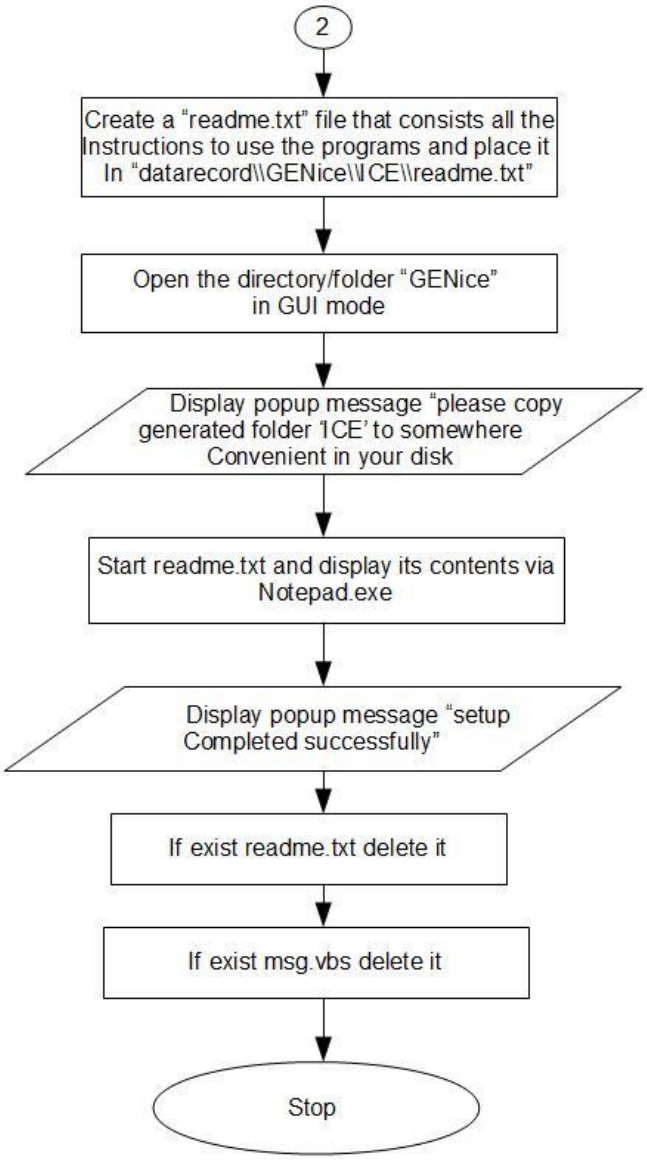

2
1
3
Is
Choice
=6
?
Yes
Display "press any key
To terminate
No
stop
Display "sorry your entry
Cannot be accepted!
Please input again (1/ 2/3/4/5/6)
Sleep (2)


Start of user defined
Function checktimer
(void)
Can
The file
Datarecord
\\lentime.txt
Be
Opened?
No
Display "default time is
3600 sec
Yes
Set the value of 'timerval'
From the 'datarecord\\lentime.txt'
Display "default time is
3600 sec
Stop

FOR SETUP


start
Display popup message
"welcome to the ICE setup"
"this setup file will give you guide
through the setup process
Does
The folder
'GENice'
Exists?
No
Create directory 'GENice"
Yes
Create folder/directory "GENice\\ICE"
if it doesnot exist
Copy 'setup_resources\\ice.dat" to
'GENice\\ICE\\ICE.exe
Copy 'setup_resources\\chaabi.dat" to
'GENice\\ICE\\chaabi.exe
Copy 'setup_resources\\hICE.dat" to
'GENice\\ICE\\hICE.vbs
Copy 'setup_resources\\p2s.dat" to
'GENice\\ICE\\patch2start.bat
Copy 'setup_resources\\upc.dat" to
'GENice\\ICE\\unpatcher.bat
Display "default timer value is
3600 sec. Do you wish to change?"
1


1
Display "your option (Y/N)"
Input "ask"
Is toupper(ask) = "N" ?
Yes
If exist GENice\\ICE\\Datarecord Delete all the content of this folder
No
Is toupper(ask) = "Y" ?
Yes
setimer()
No
Display "Invalid selection "please select Y/N"
2


2
Create a "readme.txt" file that consists all the Instructions to use the programs and place it In "datarecord\\GENice\\ICE\\readme.txt"
Open the directory/folder "GENice" in GUI mode
Display popup message "please copy generated folder 'ICE' to somewhere Convenient in your disk
Start readme.txt and display its contents via Notepad.exe
Display popup message "setup Completed successfully"
If exist readme.txt delete it
If exist msg.vbs delete it
Stop

LIMITATIONS

Since, it is the very first attempt to perform a task as this; it surely does have a few limitations as enlisted below:

- ✓ It doesn't have GUI (Graphical User Interface).
- ✓ It lacks proper user interface.
- ✓ It is not fully versatile to work in any situation.
- ✓ It supports only limited versions among Windows OS (i.e. Win7 and Win 8.1 only and probably Win XP also, which is not tested yet. Besides it won't work in Win8).
- ✓ The setup requires manual copying of files and folders, which deems it not fully automatic.
- ✓ It works only in the type of architecture that it is compiled under i.e. as we made it in a 32-bit system, so it will now work in32-bit computers only. If it were to be compiled in a 64-bit system, it would work for 64-bits only.