

CLASS XII PROJECT
COMPUTER SCIENCE
AISSEE 2019-20

C++

HELIX
PRO

B PRITHVI RAJ

V RISHABH

N VISHAL KIRTHIC

BONAFIDE CERTIFICATE

Register No.:

Internal Assesment

*Certified to be the Bonafide Project work in.....
done by..... of Class.....Section.....
of.....
during the year 20..... to 20..... .*

*Signature of the principal
School Seal*

*Signature of Subject Teacher
Designation: PGT/TGT*

*Submitted for the Practical Examination held on.....
at.....*

Internal Examiner

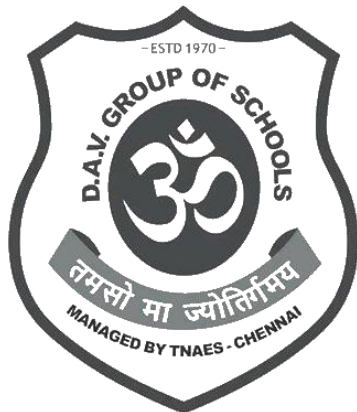
External Examiner

Chief Superintendent

DATE :

॥ ॐ ॥
INNOVATION. REINVENTED.

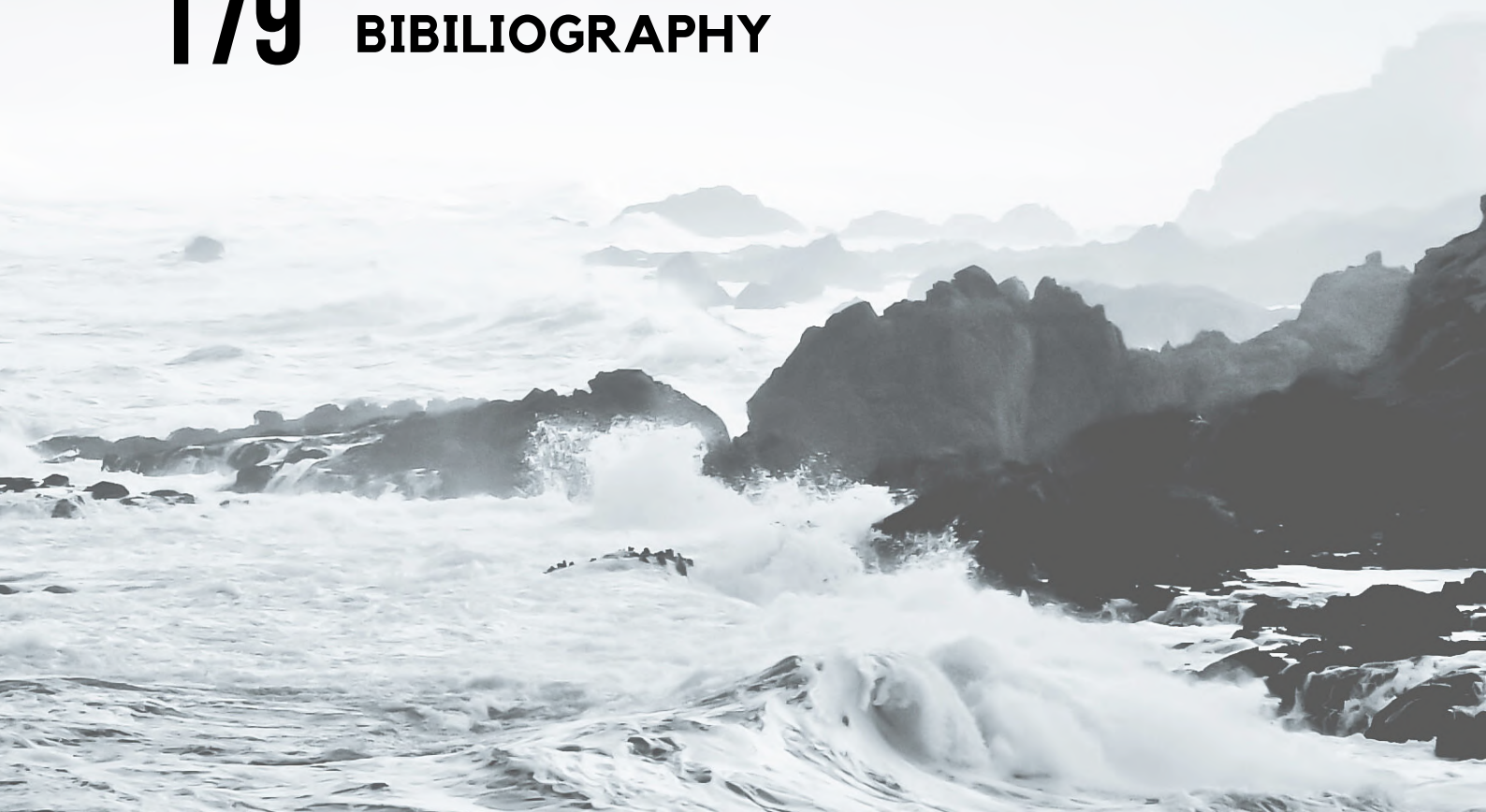
A Project BY
B PRITHVI RAJ N VISHAL KIRTHIC V RISHABH
OF CLASS 12-C



DAV Senior Secondary School
No. R-45, 100-ft. Road
Mogappair West 600050
www.davchennai.org

CONTENTS

05	PREFACE
07	ACKNOWLEDGEMENTS
09	FILES AND CONCEPTS USED
12	SYSTEM REQUIREMENTS
14	SOURCE CODE
150	OUTPUTS
179	BIBILIOGRAPHY



WHAT'S IN...

SOURCE CODE

14	PR_INTR.CPP
21	PR_MENU.CPP
26	PROJCALC.CPP
69	PROJNEWS.CPP
89	WEATHER.CPP
104	SETTINGS.CPP
113	CLASCALC.CPP
128	WE_DBSE.CPP
143	BUTTON.CPP
147	IMAGE.CPP
149	MOUSE.CPP



P R E F A C E

*" One machine can do the work of
fifty ordinary men. No machine can do
the work of one extraordinary man."*

-Elbert Hubbard

Truer Words never Spoken.

With immense dedication, hardwork and passion I present you with this Multipurpose and interactive Class 12 Computer Science project - HELIX PRO. With 2 years in hand for this project, the knowledge from my teachers and the support they had given me has made this a fascinating experience. As the great Tamil Quote says - "சிறு துளி பெரு வெள்ளம்" - Starting from Scratch on Day 1 and now presenting you with this Program is really heart-warming.

Helix Pro is a versatile program that combines Modern Application and traditional programming. It is an app for everyone in the current gen who want Speed, Entertainment and other great features. Handcrafted by 3 budding, aspiring CSC students, here is just the Sneak Peek of what we can achieve together as a team in this Modern era of Booming technology.

Sincere thanks from the bottom our heart in being a part of this wonderful journey along with us.





ACKNOWLEDGEMENTS

*"It has become appallingly
obvious that our technology
has exceeded our humanity."*

–Albert Einstein

Firstly, I wish to thank both of my team members for being a part of this amazing learning experience. I wholeheartedly thank my teacher, Mrs. Uma Arthi for the continuous support that she provided for the past two years. I would like to extend my gratitude to both my Principals, Mrs. Malliga Sridhar and Mrs. Lalitha Thiagarajan and my school for giving me this wonderful opportunity to expand my horizons and challenge myself to become better in all aspects. I also thank my Parents for their never-ending encouragement. Finally I wish to thank the Lord for making this endeavor a reality.



FILES AND CONCEPTS USED

*"The great myth of our
times is that technology
is communication."*

–Libby Larsen

WDBASE.DAT

BINARY FILE TO MANAGE WEATHER RECORDS OF WEATHER APP

MPW.TXT

**TEXT FILE TO STORE THE MASTER PASSWORD FOR CREATION OF
NEW ADMIN ACCOUNTS**

WPAPER.TXT

**TEXT FILE TO STORE THE CURRENT WALLPAPER DISPLAYED IN
LOGIN / CREATE USER PAGE**

**NORTH-PO.TXT, SOUTH-PO.TXT, WEST-PO.TXT, EAST-
PO.TXT AND INTL-PO.TXT**

**TEXT FILES TO MANAGE THE POLITICAL NEWS OF THE
RESPECTIVE PARTS OF INDIA AND INTERNATIONAL**

**NORTH-EC.TXT, SOUTH-EC.TXT, WEST-EC.TXT, EAST-
EC.TXT AND INTL-EC.TXT**

**TEXT FILES TO MANAGE THE ECONOMY AND BUSINESS NEWS OF
THE RESPECTIVE PARTS OF INDIA AND INTERNATIONAL**

**NORTH-SP.TXT, SOUTH-SP.TXT, WEST-SP.TXT, EAST-
SP.TXT AND INTL-SP.TXT**

**TEXT FILES TO MANAGE THE SPORTS NEWS OF THE RESPECTIVE
PARTS OF INDIA AND INTERNATIONAL**

CALCUSR.DAT
STORES DATA OF USERS FOR CALCULATOR APP

CURRENCY.DAT
STORES ALL THE CURRENCY DATA WHICH CAN BE ACCORDINGLY
MODIFIED BY THE ADMIN IN CALCULATOR SETTINGS

DEFCURR.DAT
STORES DEFAULT FAVOURITE CURRENCIES TO BE ASSIGNED TO
NEW USERS CREATED (ADMIN/USER)

USPA.DAT
BINARY FILE THAT MANAGES ALL THE USERS WHO HAVE CREATED
THEIR ACCOUNT IN HELIX-PRO



The Concepts Involved in this Project are:

Arrays, Structures and Classes

TEXT Files and BINARY Files

Pointers

Inheritance and Modularity

Constructors and Destructors

C++ Graphics

Functions - user Defined and Member Functions

Registry Manipulations and Unions (Mouse)

Iteration Statements

SYSTEM REQUIREMENTS



12

*"We have to stop optimizing
for programmers and start
optimizing for users."*

— Jeff Atwood

- 2 GB RAM (4 GB+ recommended) or higher
- Free Memory in the Hard Disk for Saving Binary and .CPP Files (Approx. 1 GB required + 5 GB for Application)
- DVD-ROM drive (for Saving Project in a R-W CD/DVD)
- GPU - Any vendor DirectX 9.0 class (or) better (AMD Radeon® Graphics or Nvidia Geforce® MX/GTX/RTX Series)
- Intel Core i3® or compatible, 1.6 GHz minimum (2GHz+ recommended) or Higher
- 1024x768 or higher-resolution monitor
- Mouse or other pointing device
- Microsoft® Windows 10 Pro/Home (32-bit and 64-bit)
- Microsoft Snip and Sketch Tool (in case Ctrl+Shift+PrintScr does not work in desktops)
- Turbo C++ DOS-BOX Emulator version 3.2 with graphics support (.BGI Extension supportive)


```
image/gif;base64,R0lGODlhAQABAIAAAAFVQAAACHy5gAHgAAAA=
<div class="container">
  <div class="carousel-caption">
    <h1>One more for good measure.</h1>
    <p>Cras justo odio, dapibus ac facilisis in, egestas eget quam.</p>
    <a class="btn btn-lg btn-primary" href="#" role="button">Show more</a>
  </div>
  <div class="left carousel-control" href="#myCarousel" role="button" data-slide="prev">
    <span class="glyphicon glyphicon-chevron-left" aria-hidden="true"></span>
    <span class="sr-only">Previous</span>
  </div>
  <div class="right carousel-control" href="#myCarousel" role="button" data-slide="next">
    <span class="glyphicon glyphicon-chevron-right" aria-hidden="true"></span>
    <span class="sr-only">Next</span>
  </div>
</div>
<div class="content Section">
  <div class="container">
    <div class="row">
      <div class="col-md-4"></div>
      <div class="col-md-4"><h2>FEATURED CONTENT</h2></div>
      <div class="col-md-4"></div>
    </div>
  </div>
</div>
```

OUTPUT SCREEN

Start

HelixPro™

Loading Screen

Loading, Please Wait...



Instructions

HelixPro 2.3.5 All rights reserved.
A product of AlphaHelix Technologies Pvt. Ltd.

OUTLOOK OF THE APP

HelixPro is a multipurpose, secure and intriguing app handcrafted by 3 budding CSC students, based on Modern application and traditional programming. It is an app for everyone in the from the current gen who want speed, entertainment and great features. It is also an power packed app which can serve all needs. Be it gaming, complex math calcuations, HelixPro can answer it all. The best part of this app is that you have so many services at the cost of very very less space.

DISCLAIMER

I hereby declare that any data or information I give is solely based on our sources and our knowledge. Any issues that may arise due to supposedly incorrect information provided, Helixpro is not responsible and answerable.

PRIVACY INFORMATION

HelixPro has been encrypted with 360 Security Systems. Encrypt your personal data so that it cannot get into the wrong hands. We know how important your data is, and we are fully committed in ensuring that your personal data is not misused and tampered with.

LICENSE INFORMATION


The Application is solely the the property of the creators. Replication or Redistribution of the app without prior permission would be viewed as a heinous crime and a punishable offence.

Project By:

B. Prithvi Raj
V. Rishabh
N. Vishal Kirthic

PRESS ANY KEY TO CONTINUE

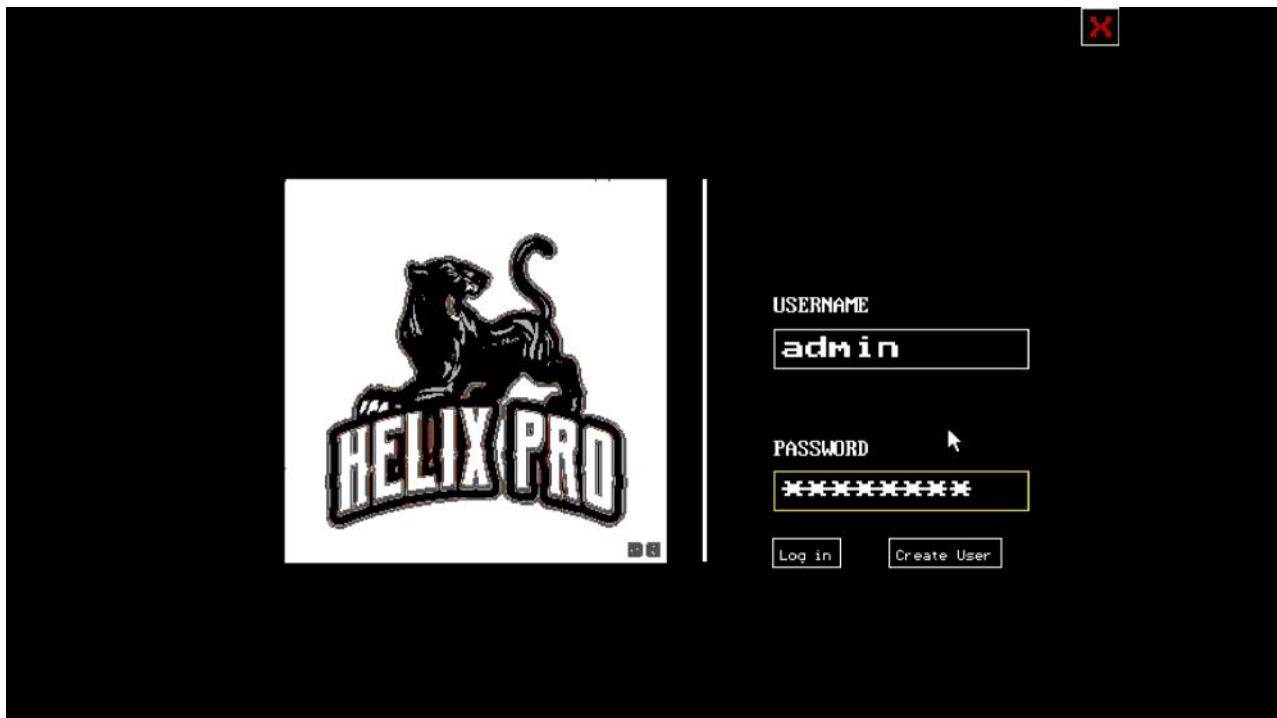
Login



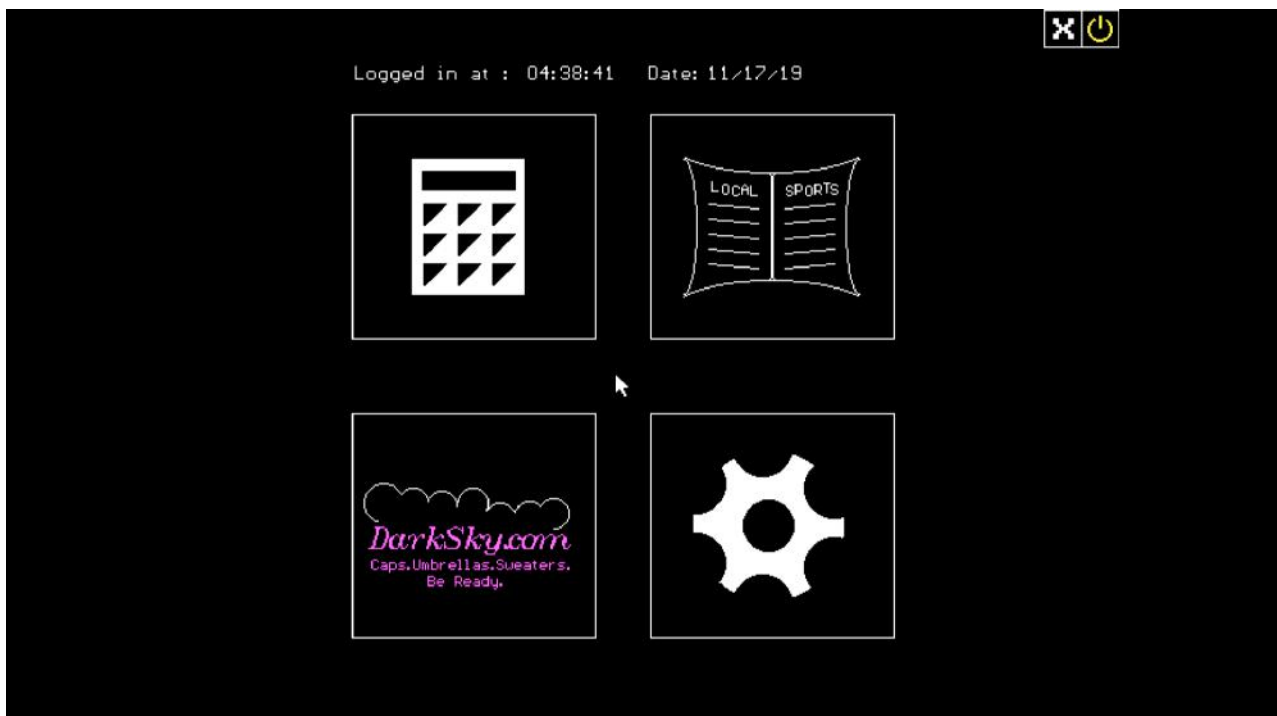
USERNAME

PASSWORD

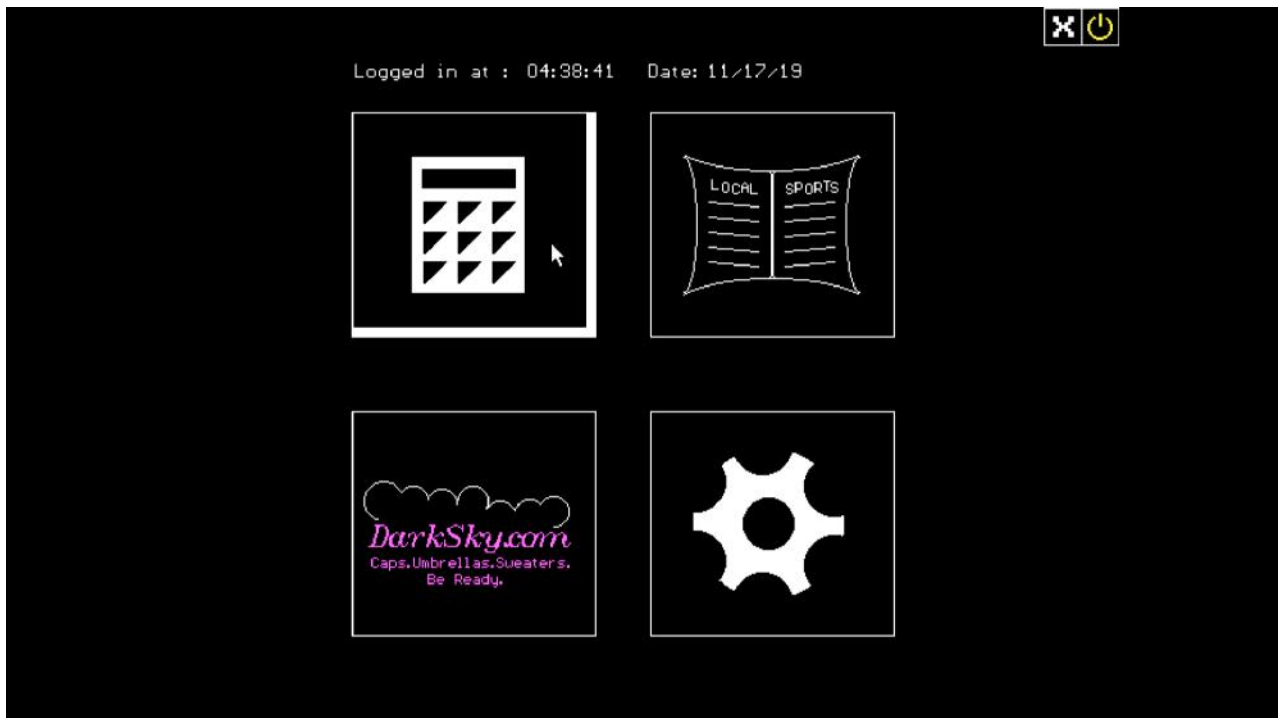
Logging in as Admin



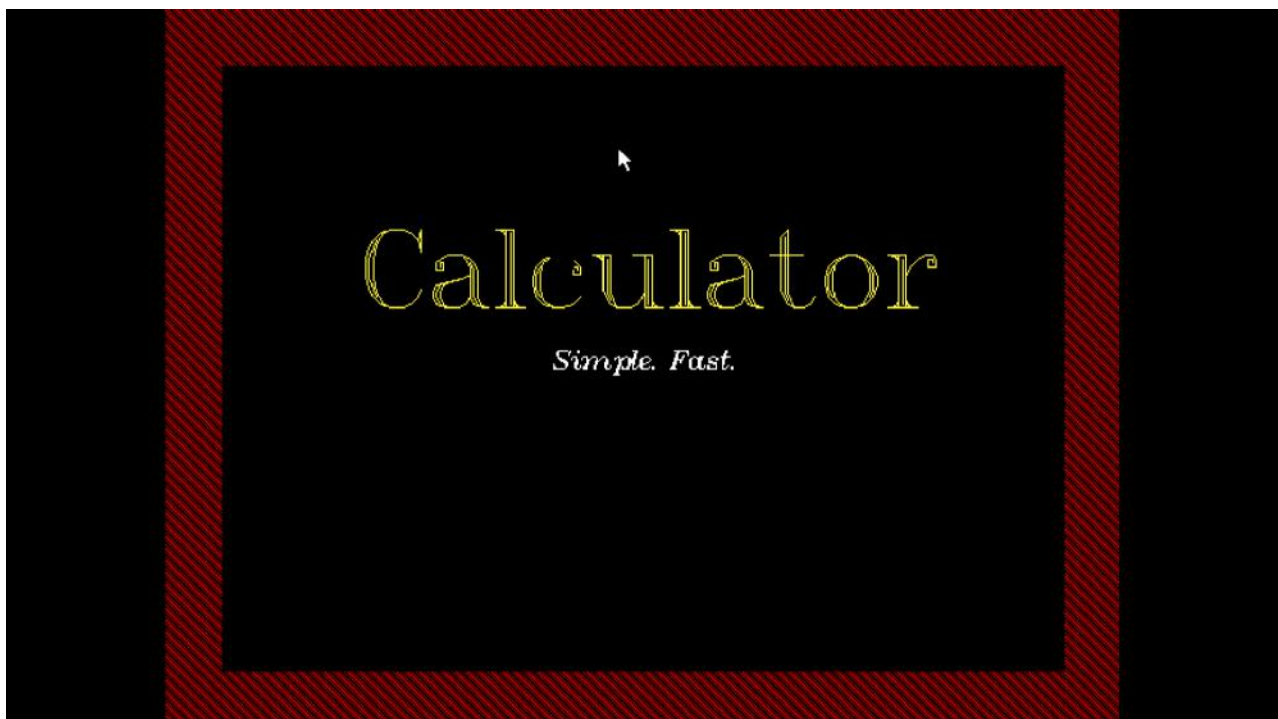
Main Menu



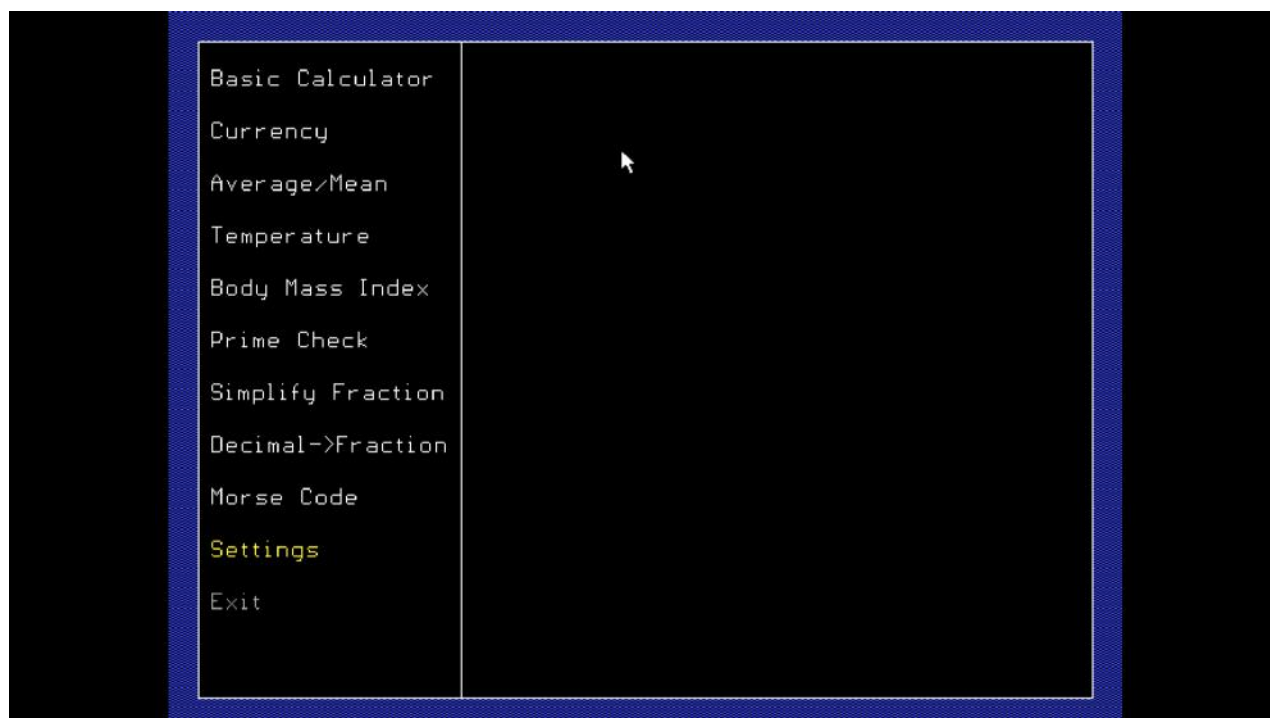
Opening CALCULATOR app



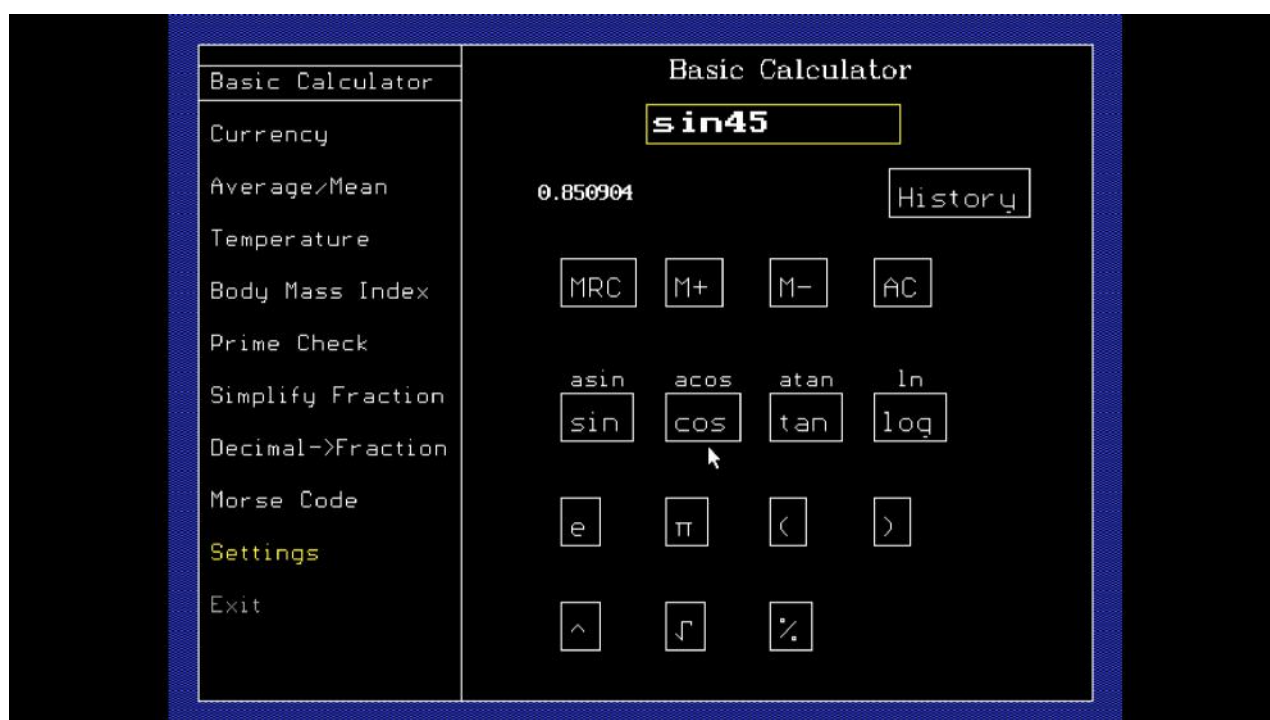
Calculator Load Screen



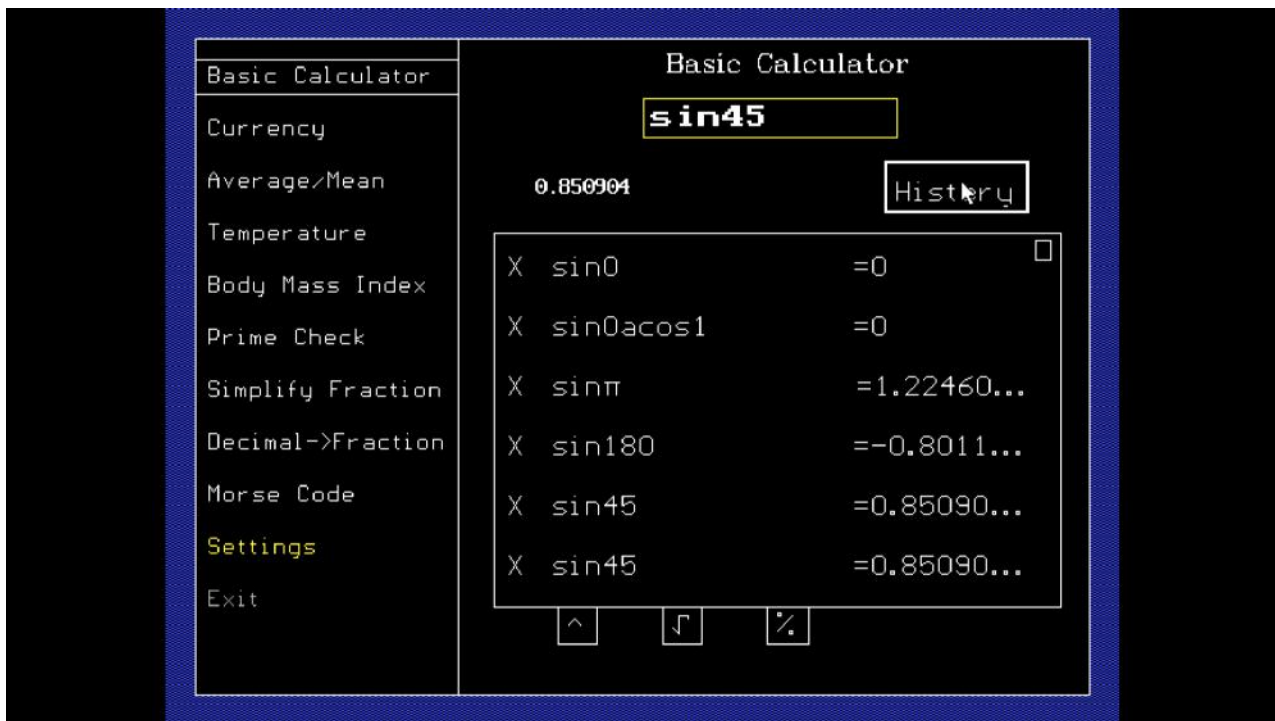
Calculator Main Menu



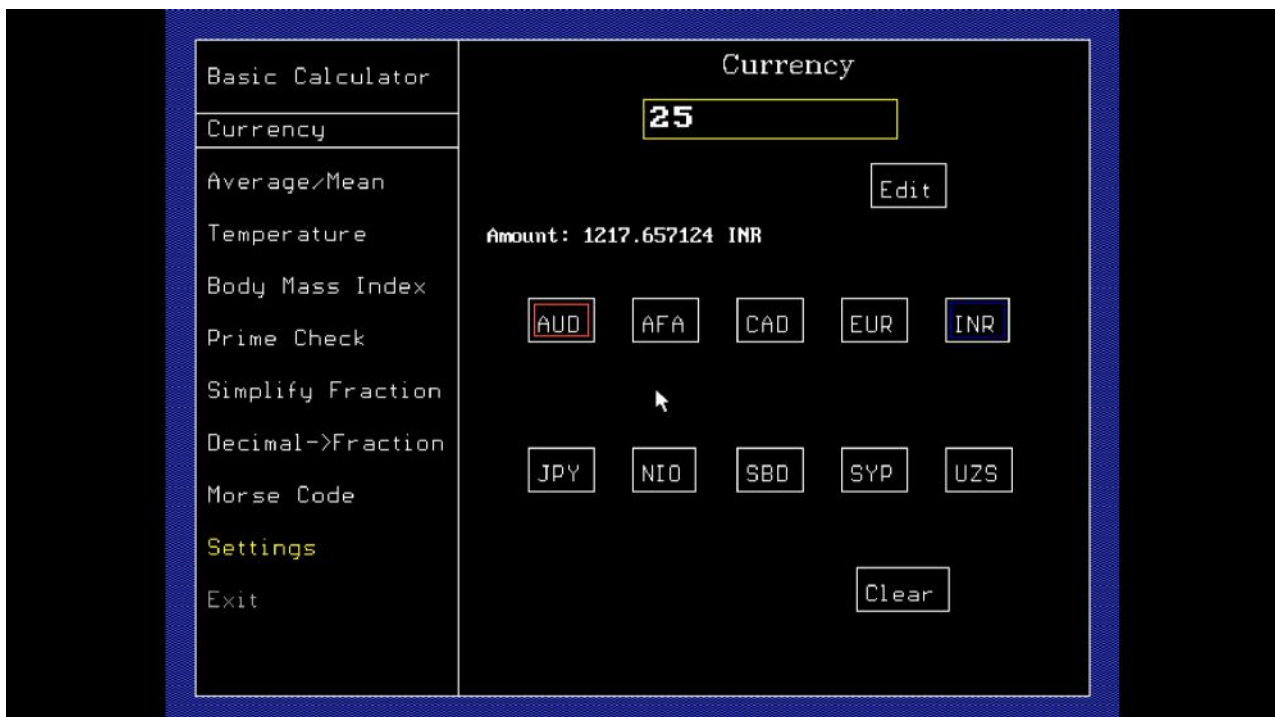
Operations on Basic Calculator



History in Basic Calculator



Currency Converter - In this Picture we had converted 25 Australian Dollars to Indian Rupee



Finding Mean of Given Numbers

Basic Calculator	Average/Mean
Currency	12;23;34;45;56
Average/Mean	
Temperature	Arithmetic Mean: 34
Body Mass Index	Geometric Mean: 29.837175
Prime Check	Harmonic Mean: 25.470864
Simplify Fraction	
Decimal->Fraction	
Morse Code	
Settings	
Exit	Clear

Temperature Converter - Converting Celsius to Fahrenheit, Kelvin and Rankine

Basic Calculator	Temperature
Currency	<input type="button" value="Celsius"/> <input type="button" value="Fahrenheit"/> <input type="button" value="Kelvin"/> <input type="button" value="Rankine"/>
Average/Mean	Enter the temperature:
Temperature	27
Body Mass Index	Celsius: 27 °C
Prime Check	Fahrenheit: 80.6 °F
Simplify Fraction	Kelvin: 300.15 K
Decimal->Fraction	Rankine: 540.27 R
Morse Code	
Settings	
Exit	Clear

Temperature Converter - Error Message as to Incorrect Temperature Values given

Basic Calculator Currency Average/Mean Temperature Body Mass Index Prime Check Simplify Fraction Decimal->Fraction Morse Code Settings Exit	Temperature			
	<input type="button" value="Celsius"/>	<input type="button" value="Fahrenheit"/>	<input type="button" value="Kelvin"/>	<input type="button" value="Rankine"/>
	Enter the temperature:			
	<input type="text" value="-13"/>			
	Kelvin and Rankine temperature cannot be negative!!			
	<input type="button" value="Clear"/>			

Body Mass Index

Basic Calculator Currency Average/Mean Temperature Body Mass Index Prime Check Simplify Fraction Decimal->Fraction Morse Code Settings Exit	Body Mass Index	
	Enter your height in cm:	<input type="text" value="175"/>
	Enter your weight in kg:	<input type="text" value="65"/>
	Body Mass Index: 21.224489	
	Status: Normal	
	<input type="button" value="Clear"/>	

Prime Check

Basic Calculator	<div>Prime Check</div> <div>239</div> <div>Prime</div> <div>Clear</div>
Currency	
Average/Mean	
Temperature	
Body Mass Index	
Prime Check	
Simplify Fraction	
Decimal->Fraction	
Morse Code	
Settings	
Exit	

Simplification of Fractions

Basic Calculator	<div>Simplify Fraction</div> <div>Enter the fraction:</div> <div>1345</div> <div>235</div> <div>Simplified Fraction:</div> <div>$\frac{269}{47}$</div> <div>Clear</div>
Currency	
Average/Mean	
Temperature	
Body Mass Index	
Prime Check	
Simplify Fraction	
Decimal->Fraction	
Morse Code	
Settings	
Exit	

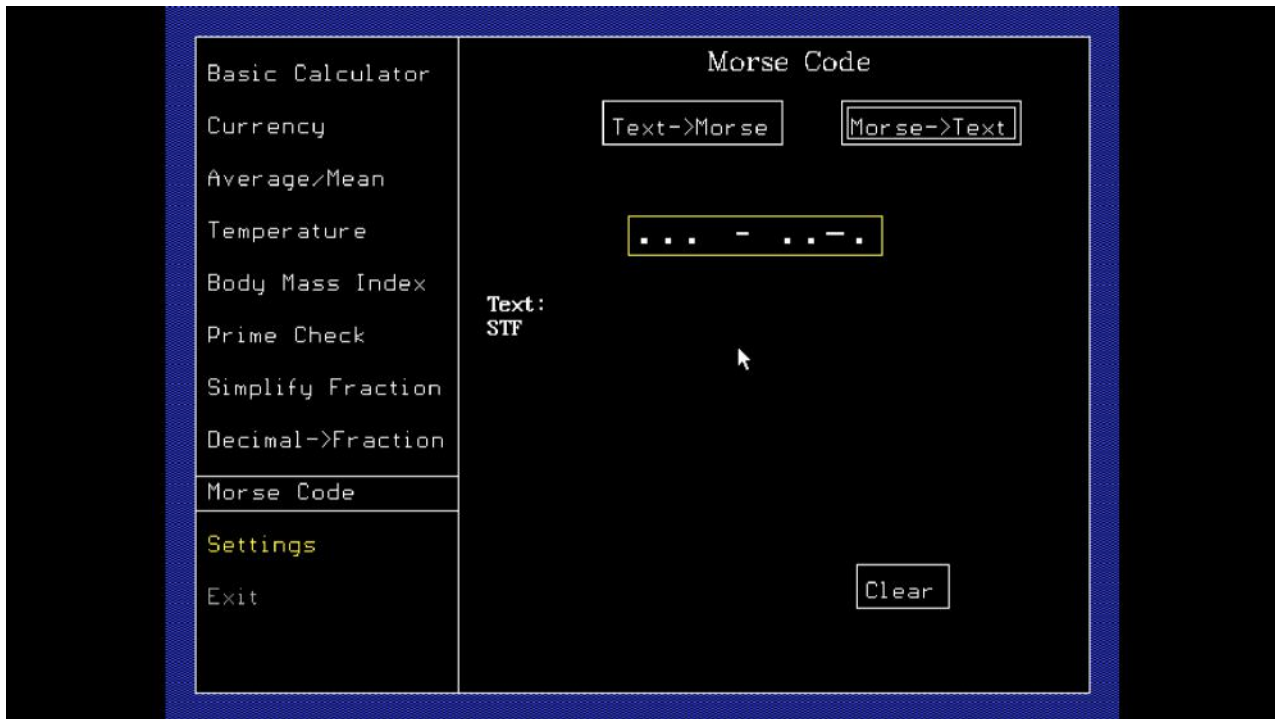
Decimal -> Fractions

Basic Calculator	Decimal->Fraction
Currency	Enter the decimal:
Average/Mean	0.7648
Temperature	Simplified Fraction:
Body Mass Index	$\frac{478}{625}$
Prime Check	
Simplify Fraction	
Decimal->Fraction	
Morse Code	
Settings	
Exit	Clear

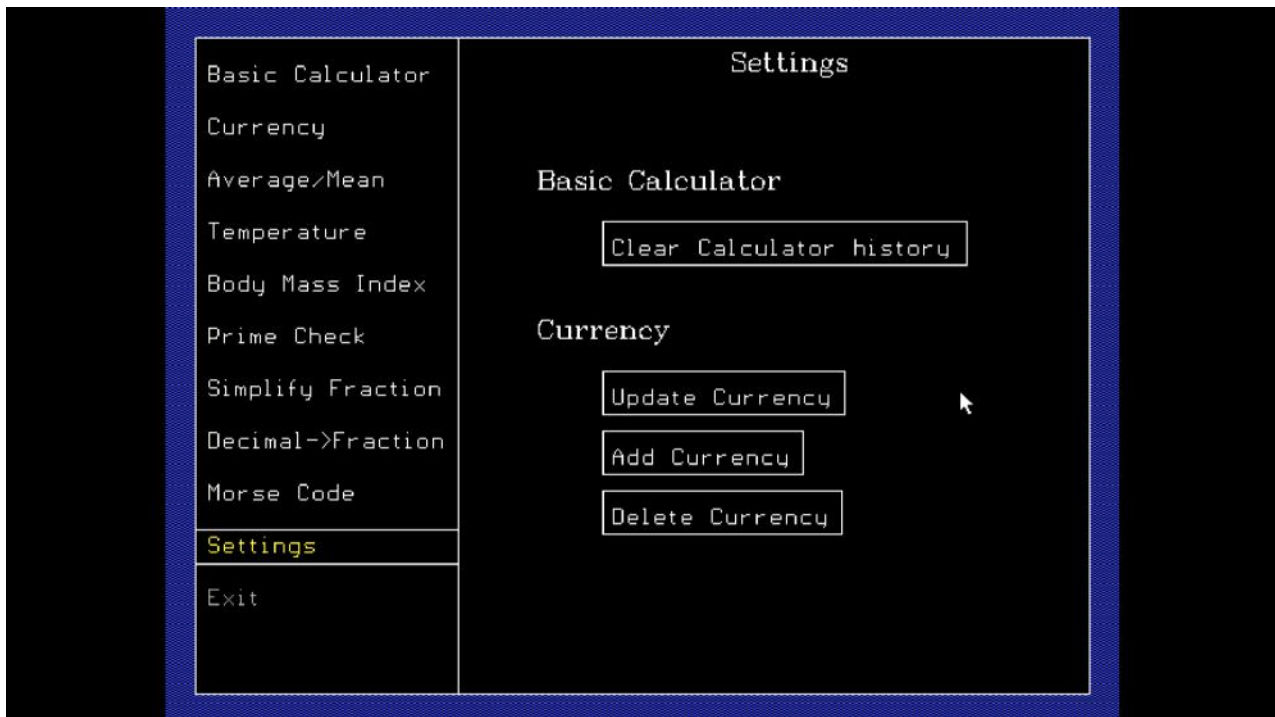
Morse Code: Text -> Morse

Basic Calculator	Morse Code
Currency	Text->Morse
Average/Mean	Morse->Text
Temperature	Helix Pro
Body Mass Index	Morse:
Prime Check /
Simplify Fraction	
Decimal->Fraction	
Morse Code	
Settings	
Exit	Play Sound
	Clear

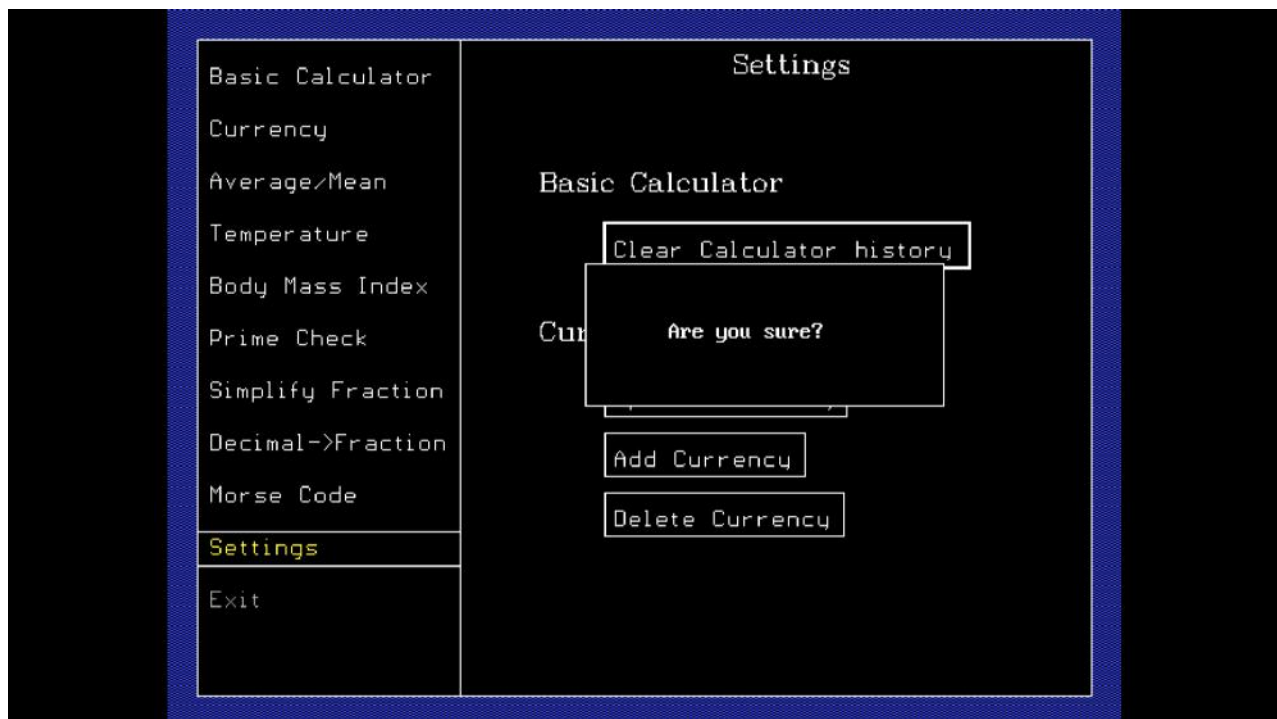
Morse Code: Morse -> Text



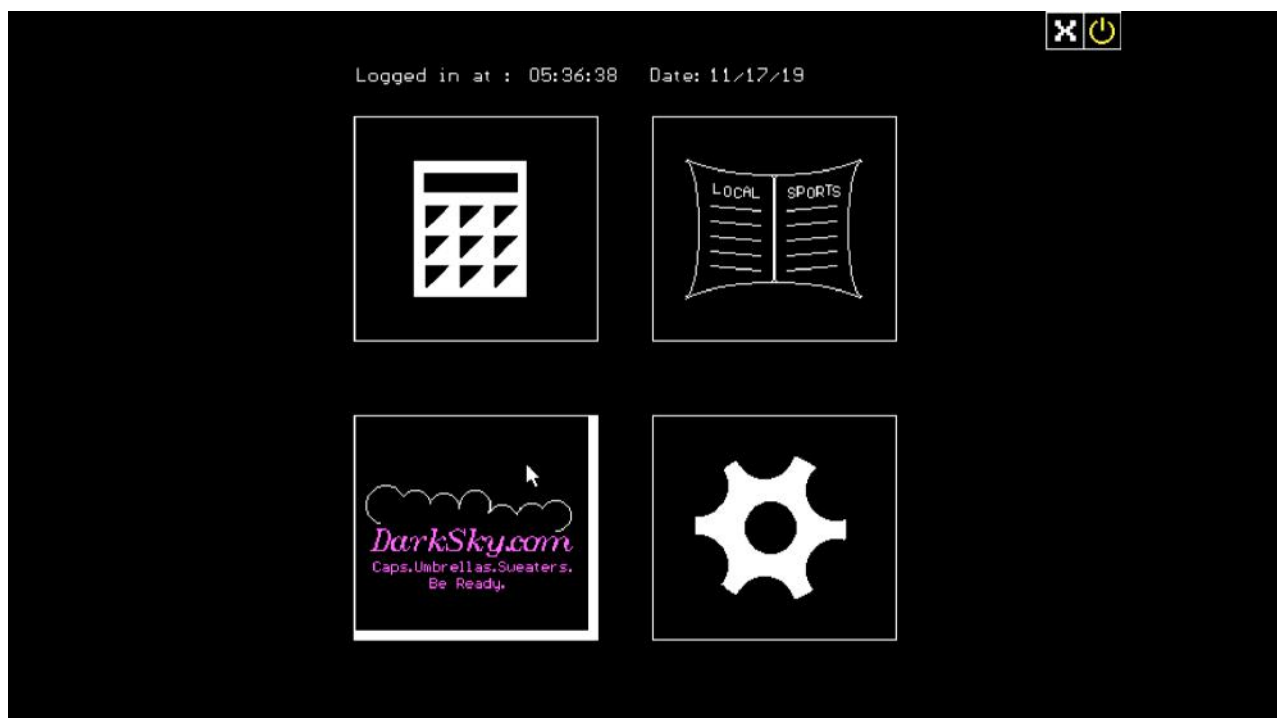
Calculator Settings: Currency Settings can be accessed only by an Admin Account



Clear History Settings in Calculator



Closing Calculator and opening WEATHER app



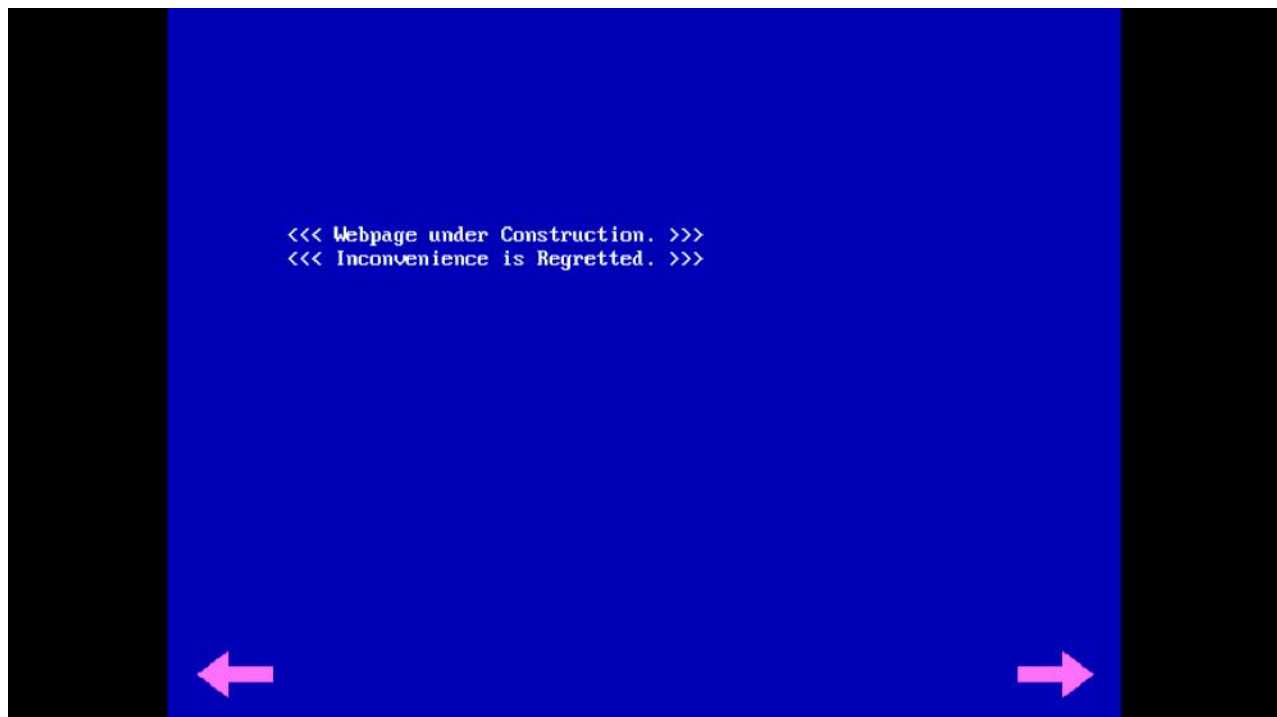
Weather Loading Screen



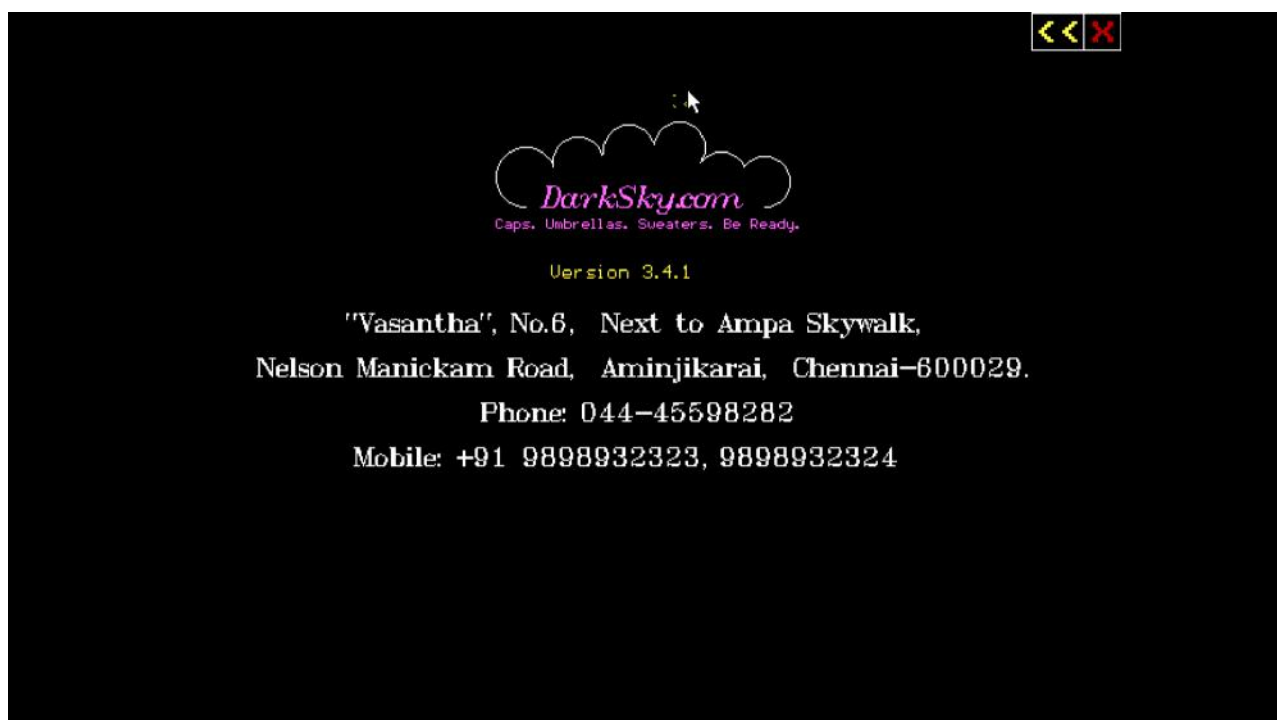
Weather Main Page for Viewing Weather or Enter into Admin Mode (Can be accessed only by Admin)



Error Msg. if Weather Record does not Exist



Contact Us Page



Administrator Mode: Main Menu



1. Add Details for Cities
2. Delete details for Cities
3. Modify details for Cities
4. View City Weather Details
5. Sign out from Admin mode

Appending a Weather Record into the Database

```
Day Temperature:      2  2  2  2  2  2  2
Night Temperature:    2  2  2  2  2  2  2
Day Precipitation Rate: 2  2  2  2  2  2  2
Night Precipitation Rate: 2  2  2  2  2  2  2
Day Humidity:          2  2  2  2  2  2  2
Night Humidity:        2  2  2  2  2  2  2
UV Index:              2  2  2  2  2  2  2
Day Windspeed:         2  2  2  2  2  2  2
Night Windspeed:       2  2  2  2  2  2  2
Thunderstorm Chance:   2  2  2  2  2  2  2
Snowfall Rate:         2  2  2  2  2  2  2
Icefall Rate:          2  2  2  2  2  2  2

Enter Sunrise Time:
2      2      2      2      2      2      2
Enter Sunset Time:
2      2      2      2      2      2      2
Enter Moonrise Time:
2      2      2      2      2      2      2
Enter Moonset Time:
2      2      2      2      2      2      2

Press any key
to Review...      LONDON
```

Confirmation Message to Admin when Weather Records from Database are Deleted

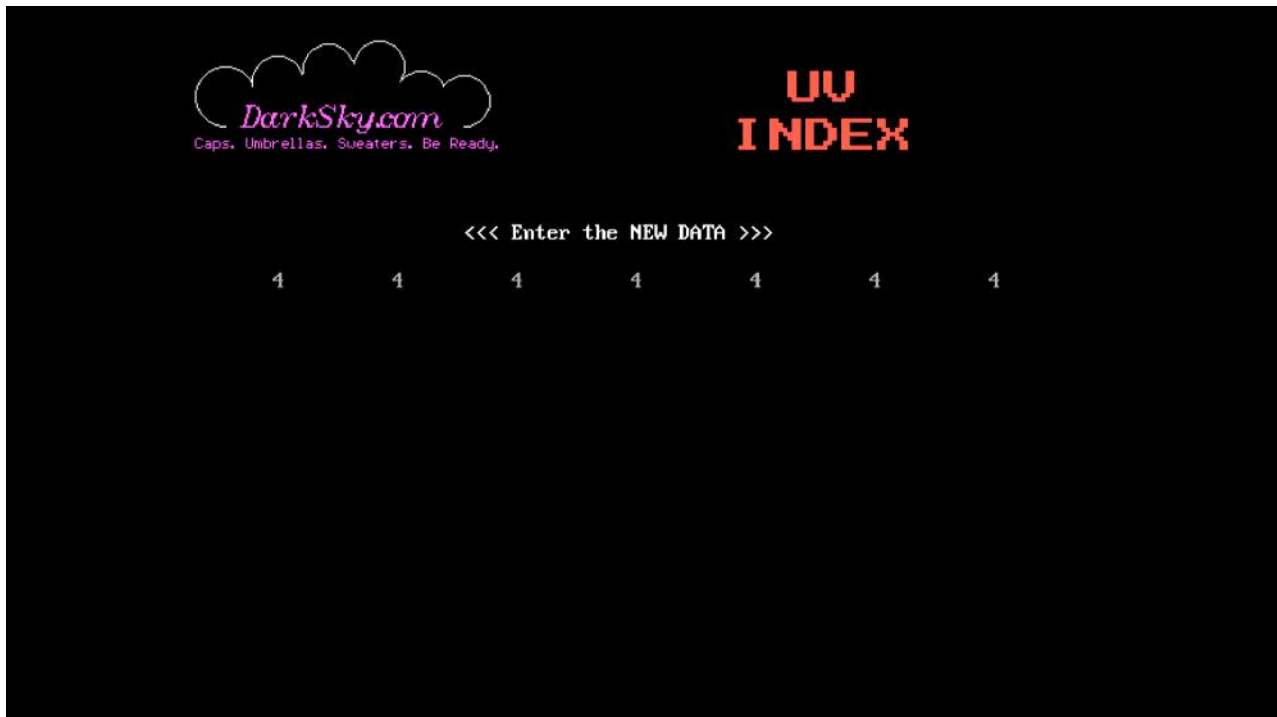
<<< RECORD DELETED >>>

Choosing a particular Parameter to be Modified in Modify Data Option for Weather Records

Day Temperature	Ice Formation
Night Tempearture	Sunrise Time
Day Precipitation Rate	Sunset Time
Night Precipitation Rate	Moonrise Time
Day Humidity	Moonset Time
Night Humidity	
UV Index	
Day Wind Speed	
Night Wind Speed	
Thunderstorm Chance	
Snow Precipitation	

CHOOSE
A
PARAMETER

Modifying UV Index Parameter for the City Chosen



Modified New Record that is Written in Database



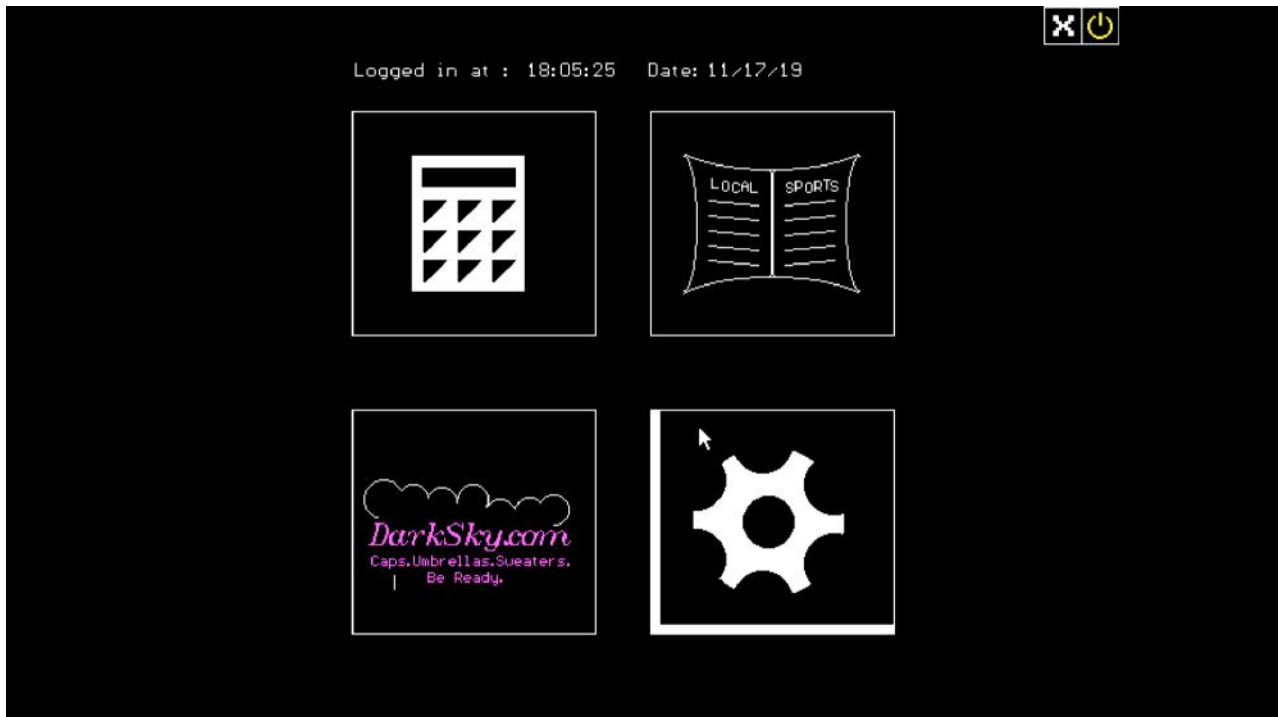
Error Msg. in case Admin tries to Write a Weather Record that is Already Present in Database



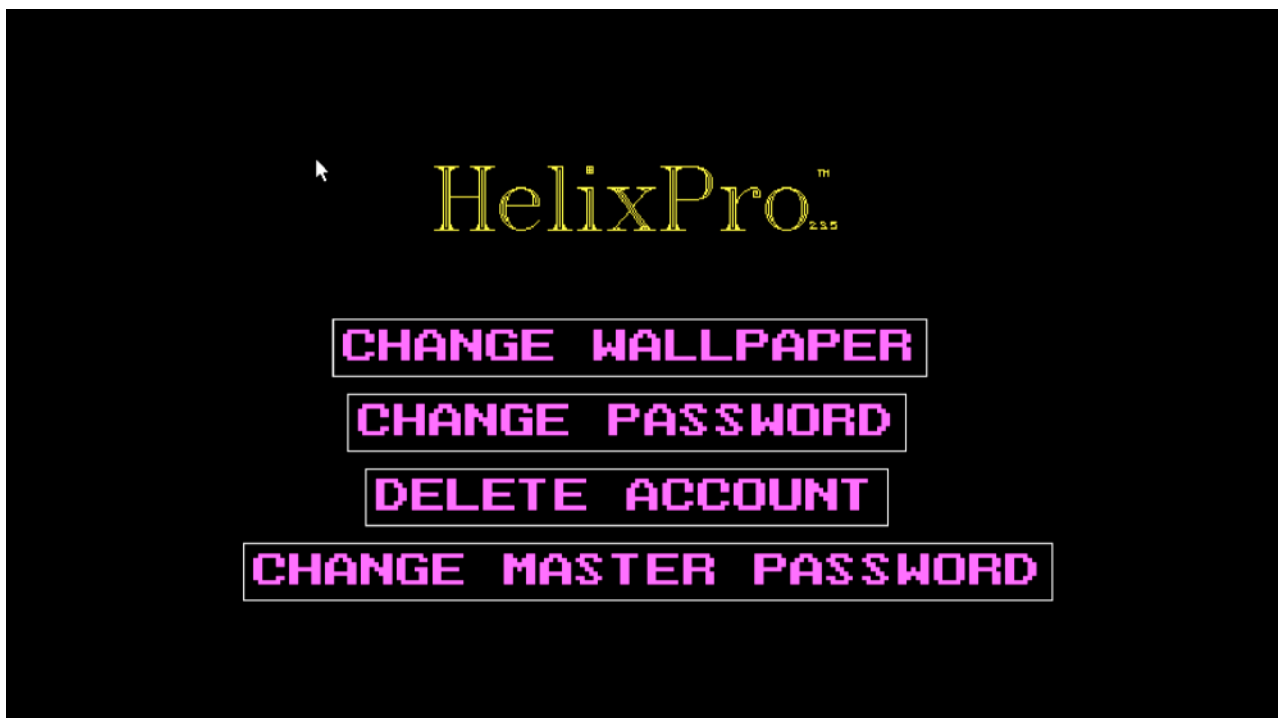
The Actual Displaying of Weather Details if Weather Record is found; In both User and Admin Mode



Closing Weather app and Opening Settings App



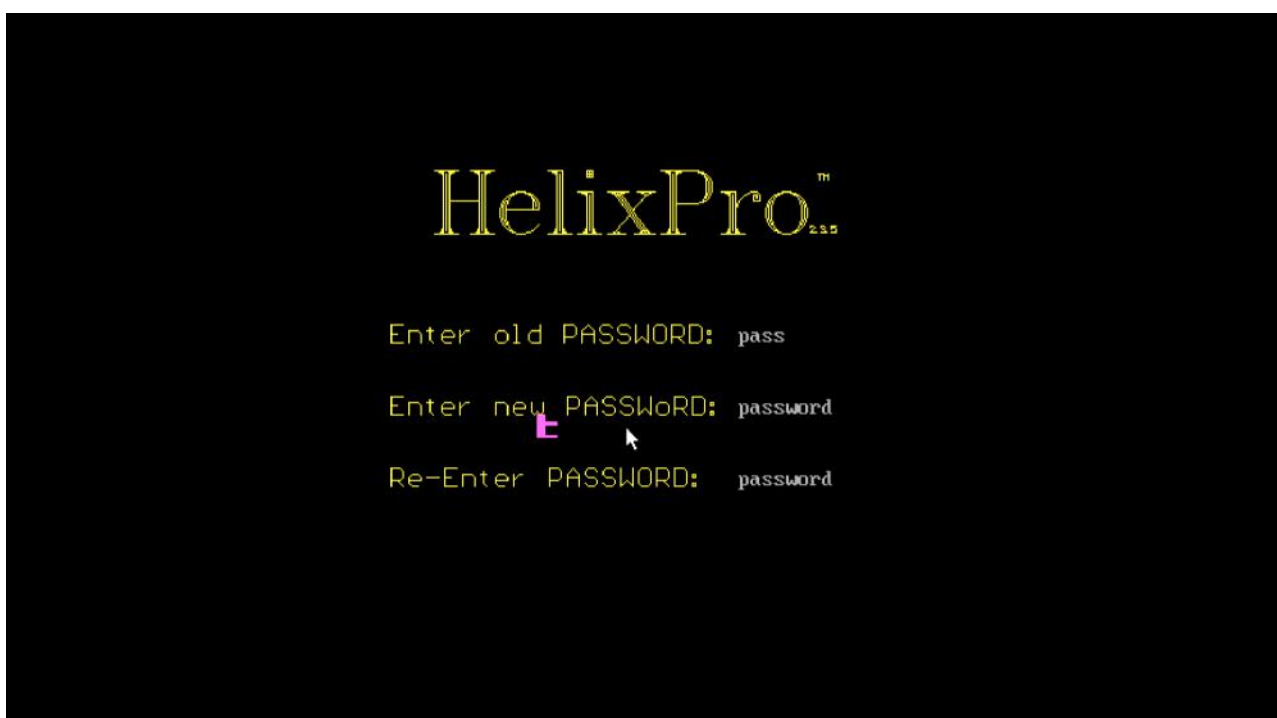
Settings Drop Menu



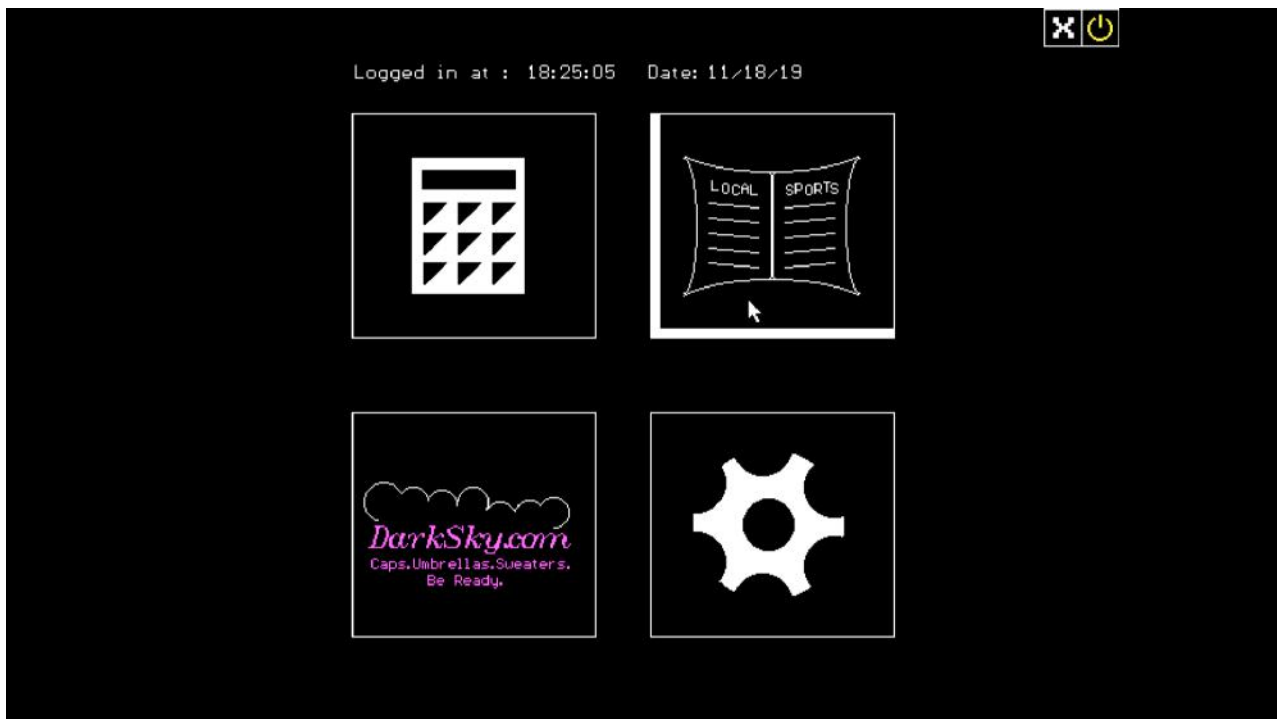
Setting New Wallpaper to the Login Page



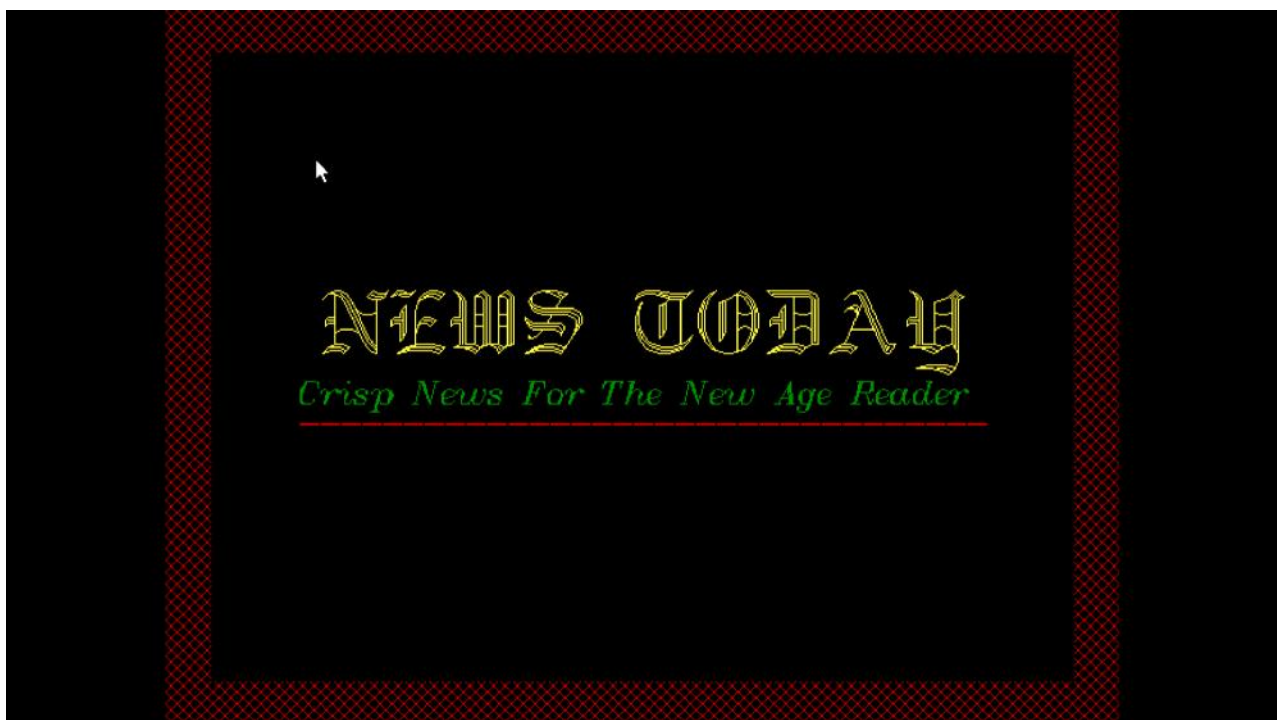
Setting New Password to current User



Closing Settings App and opening NEWS App



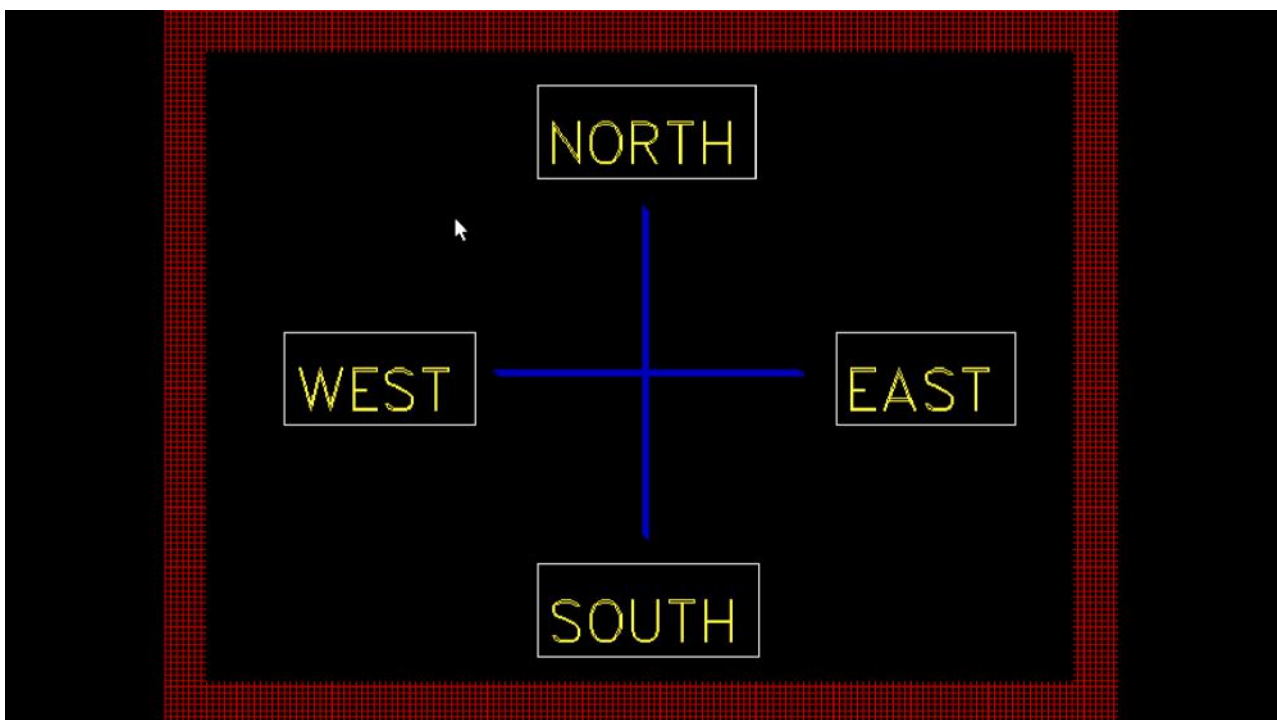
Opening Screen of News App



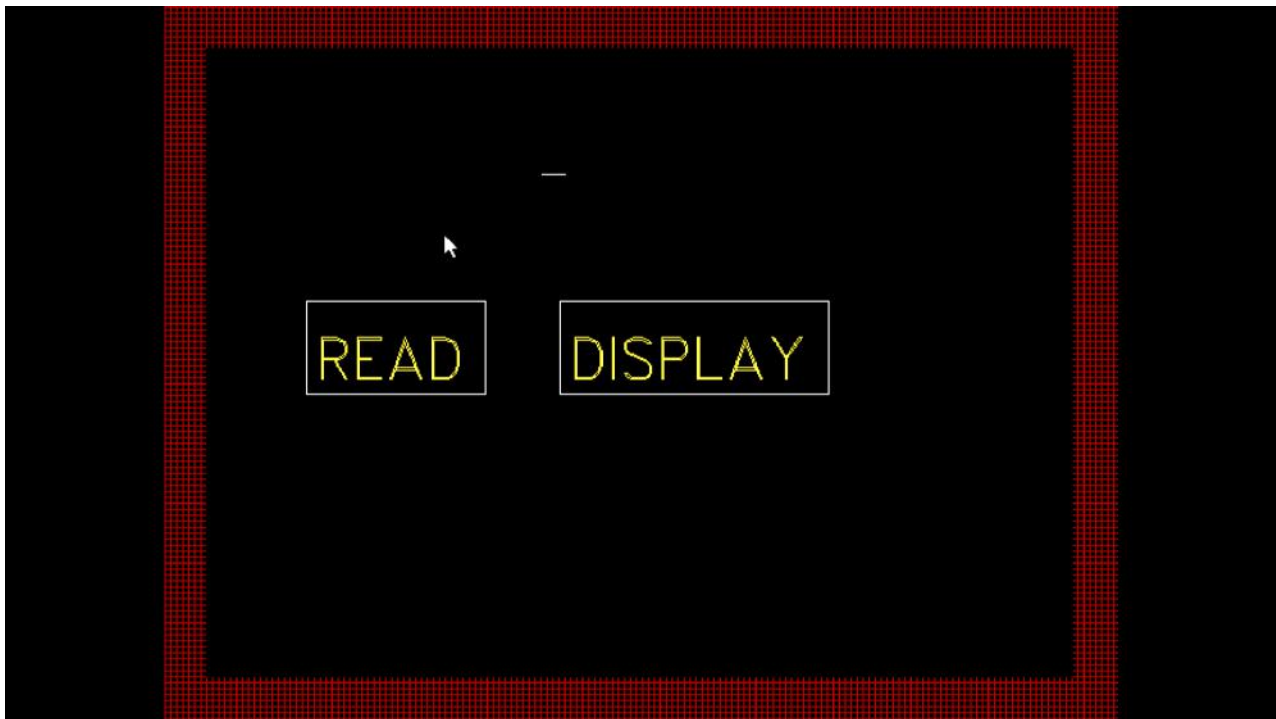
To view Either India or International News



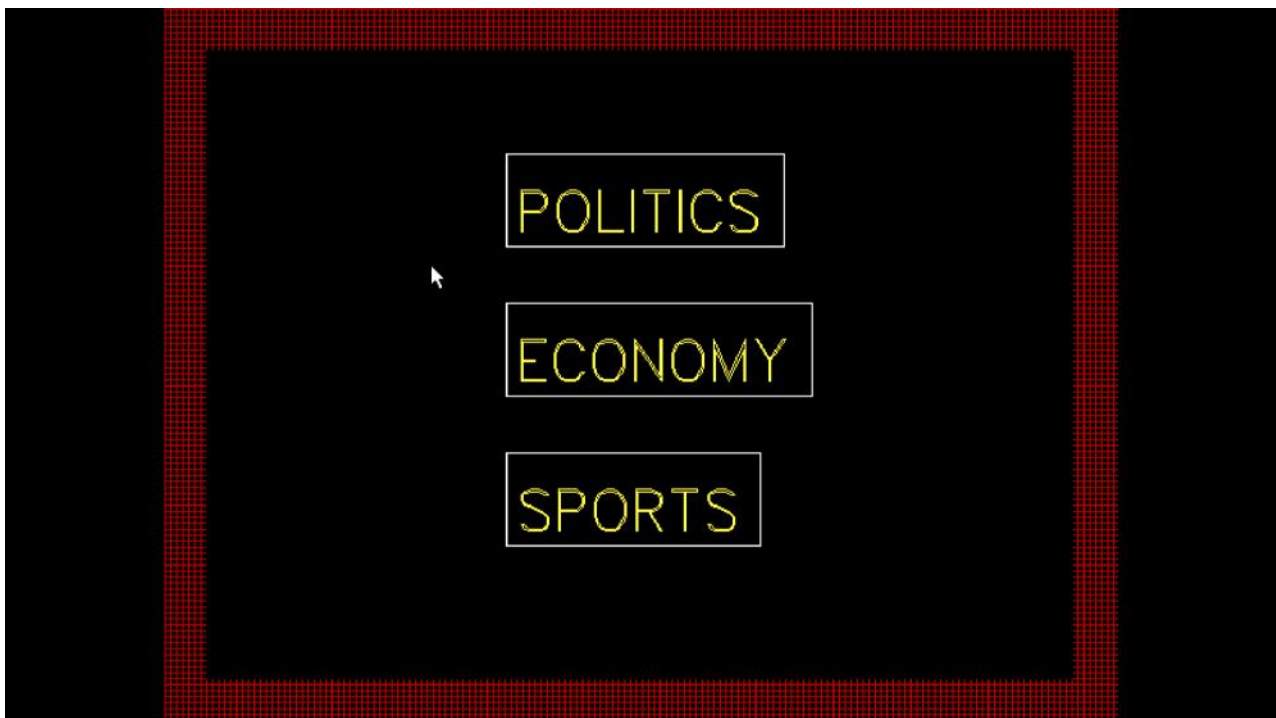
News from all parts of India



Reading or Displaying News from North India (Only Admins can Modify News using Read Option)



Political, Economy or Sports news can be viewed separately for each News Segment



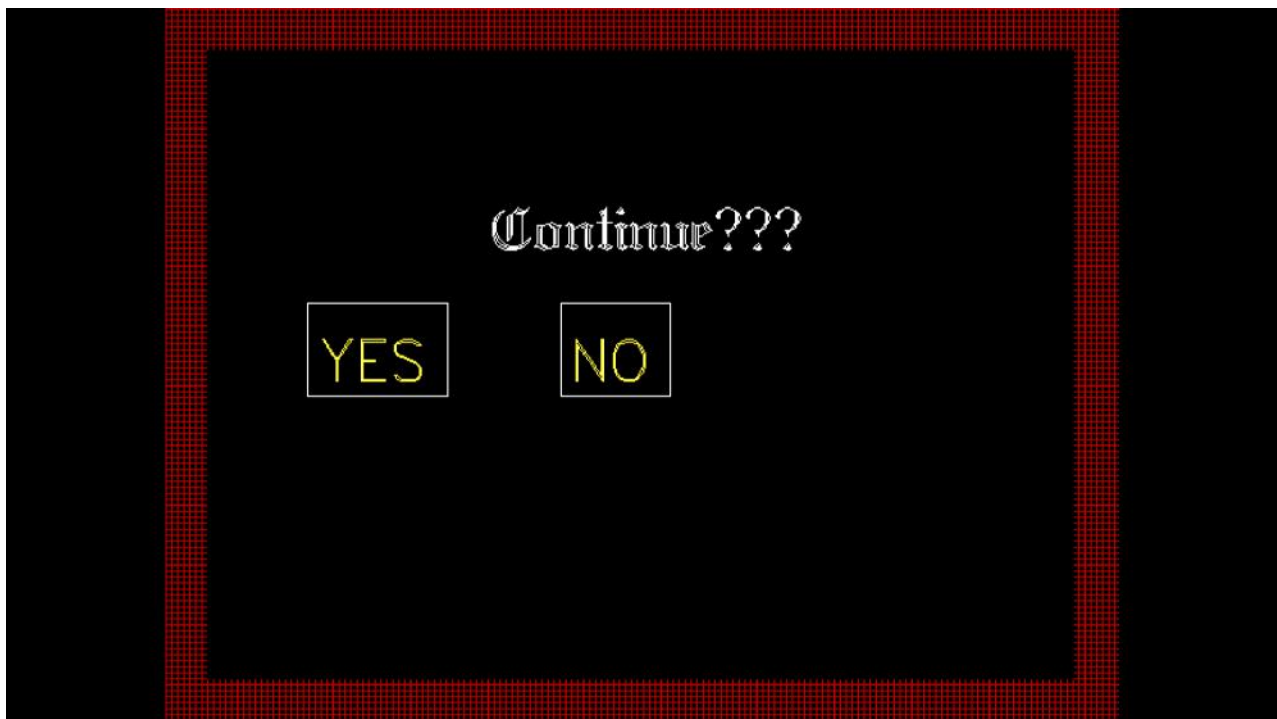
Displaying North India Political News



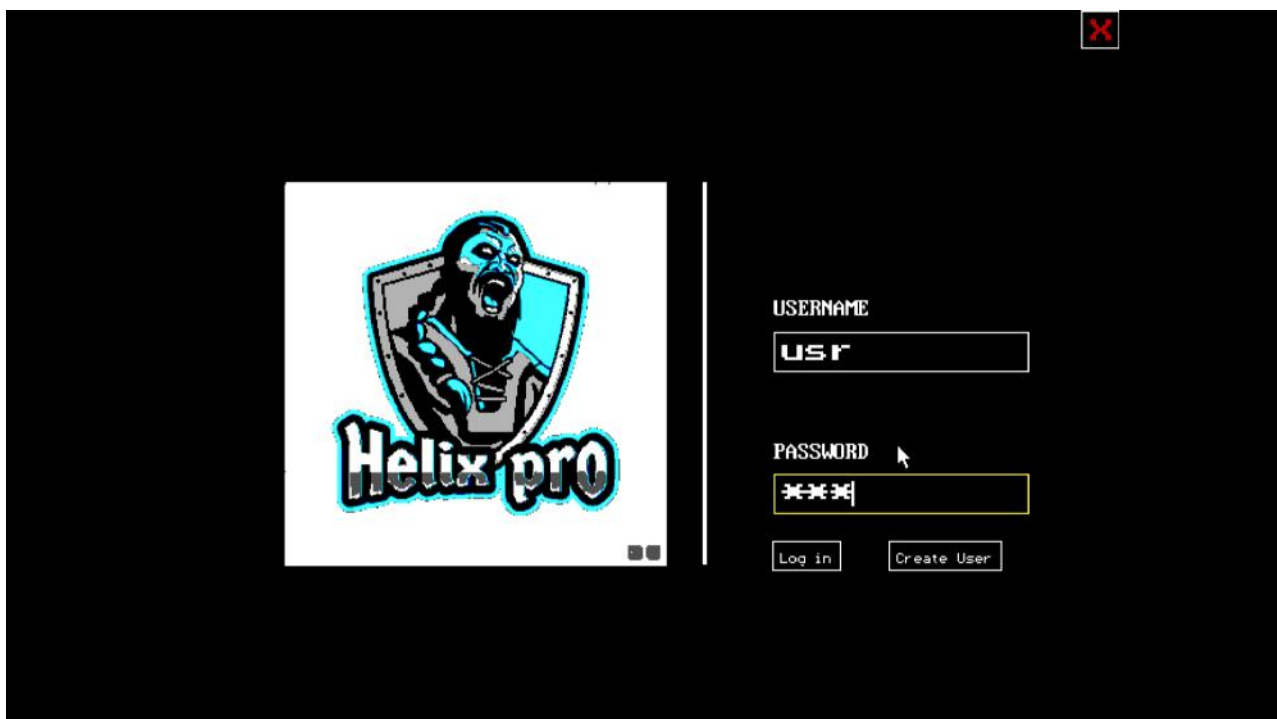
Reading International Sports News



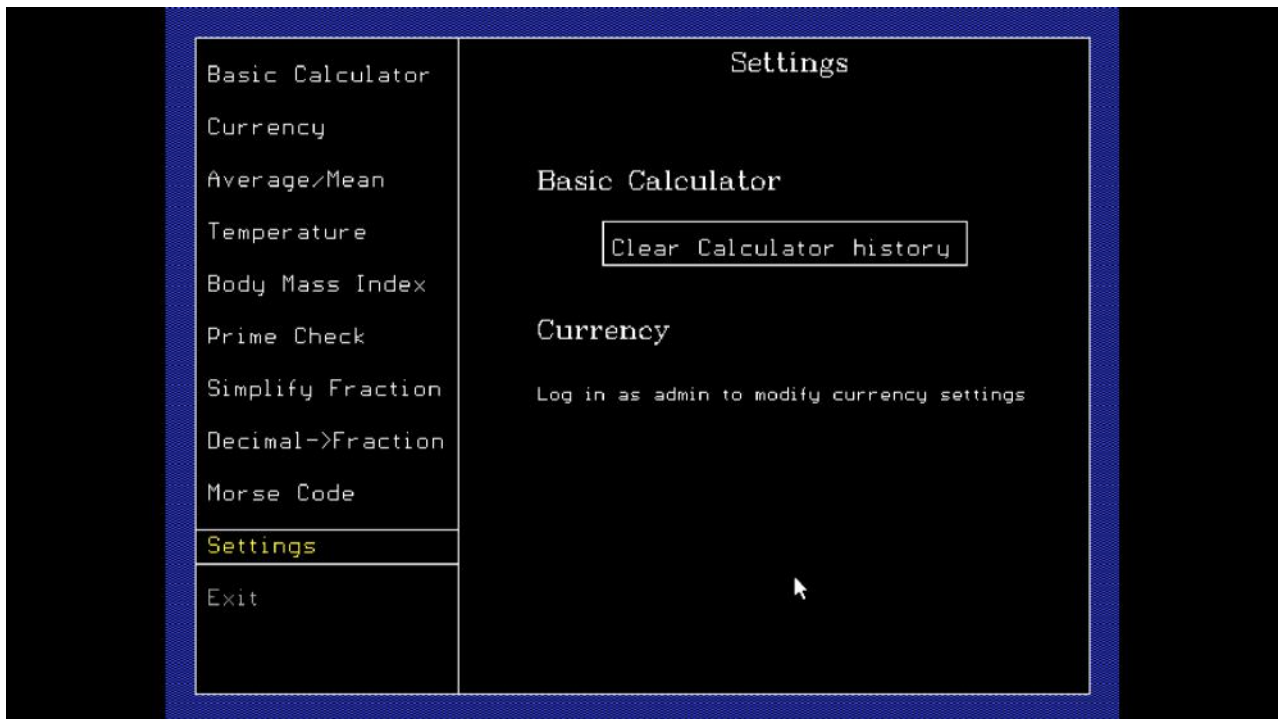
For more News, Articles and Entertainment



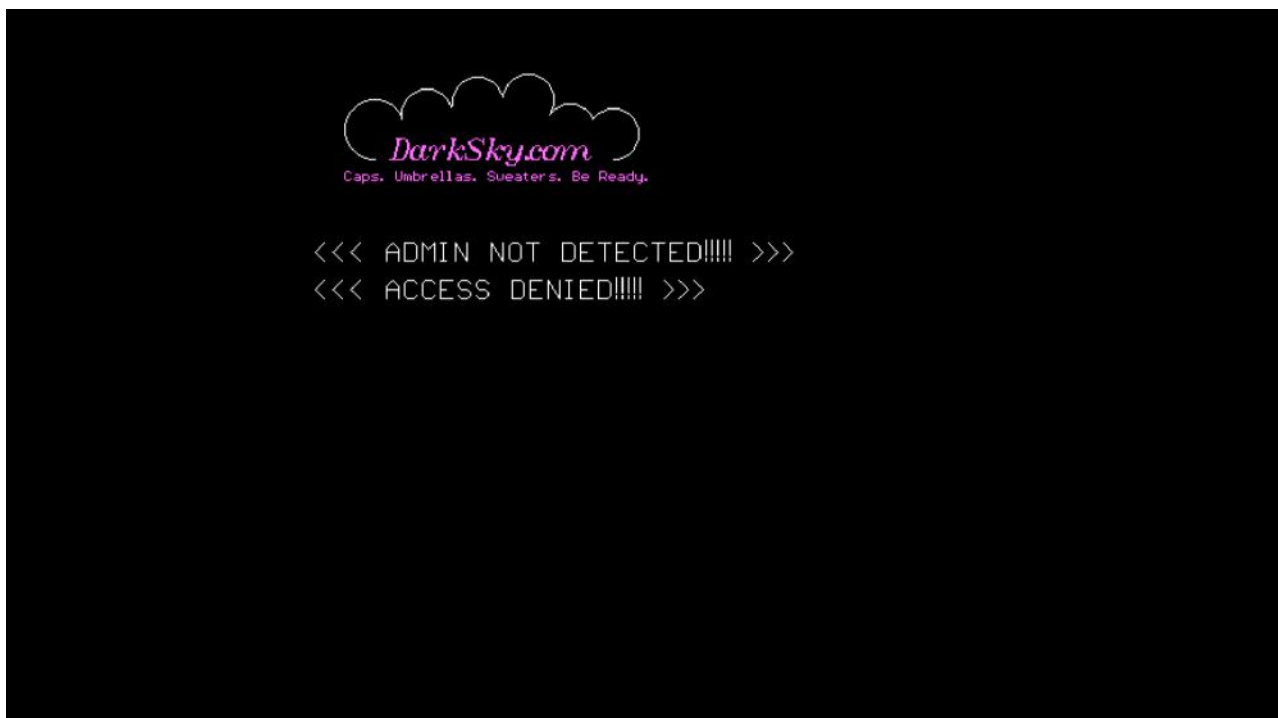
Logging off as Admin and Logging in as User



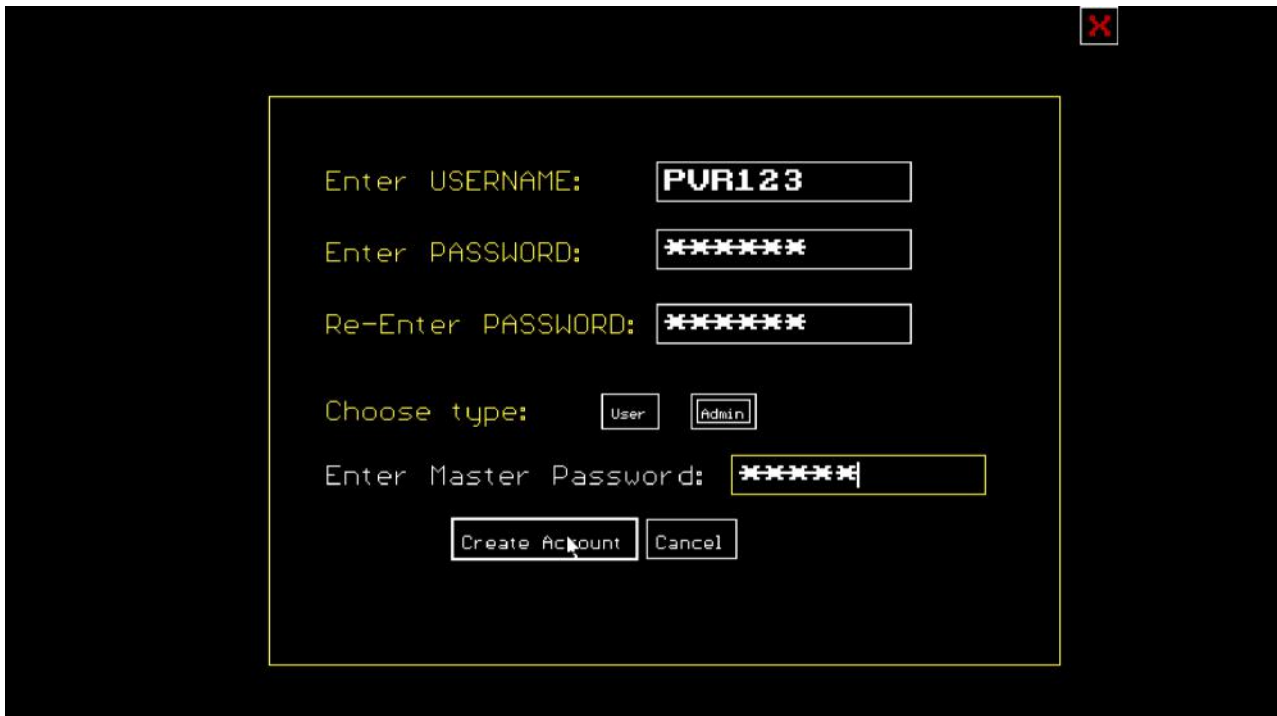
Currency Settings being Disabled in Calculator



Admin Settings being Disabled in Weather



Creating a New Admin in the Create User Page



Enter USERNAME:

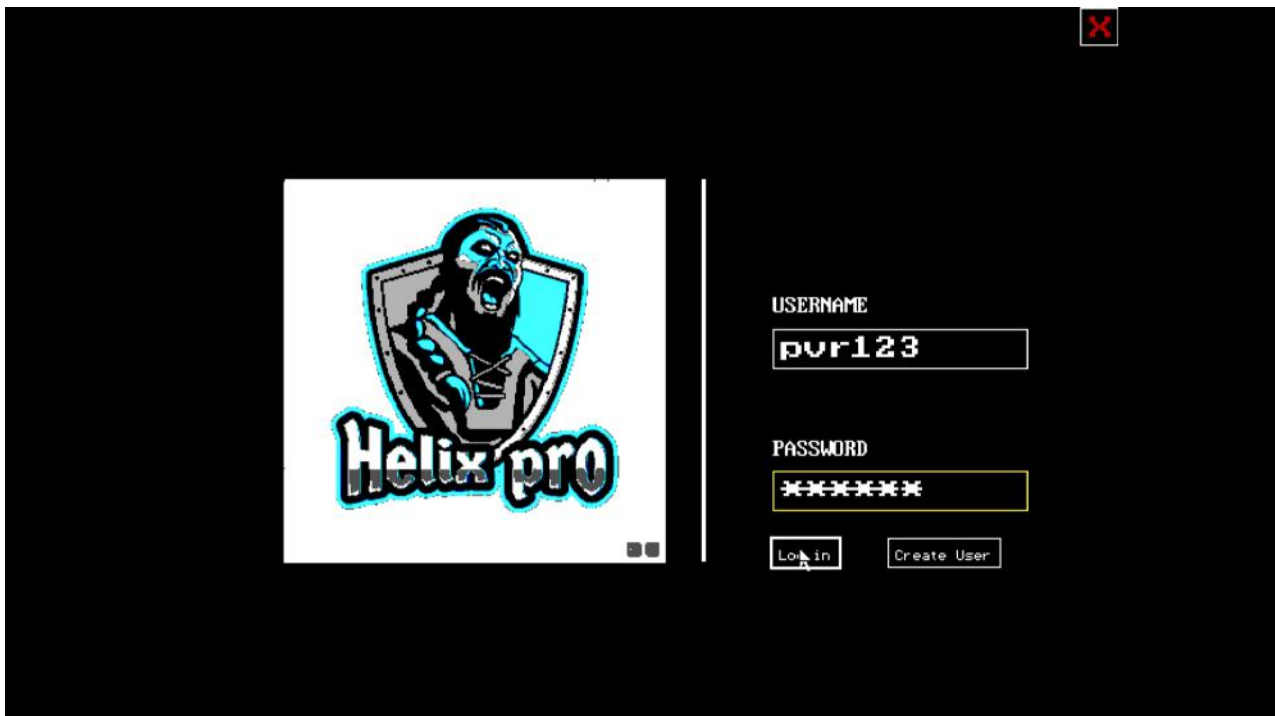
Enter PASSWORD:

Re-Enter PASSWORD:

Choose type: ☐ User ☒ Admin

Enter Master Password:

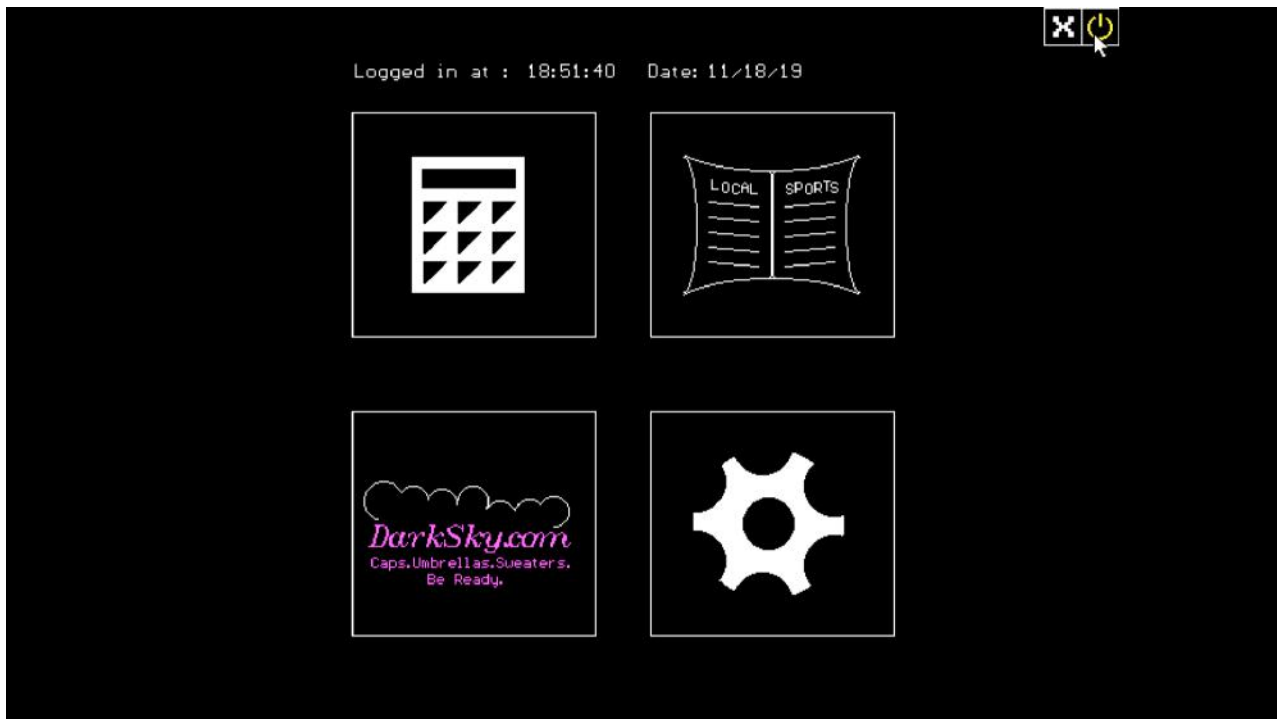
Logging in Using the Newly created Admin (Notice the Wallpaper change done in Settings)



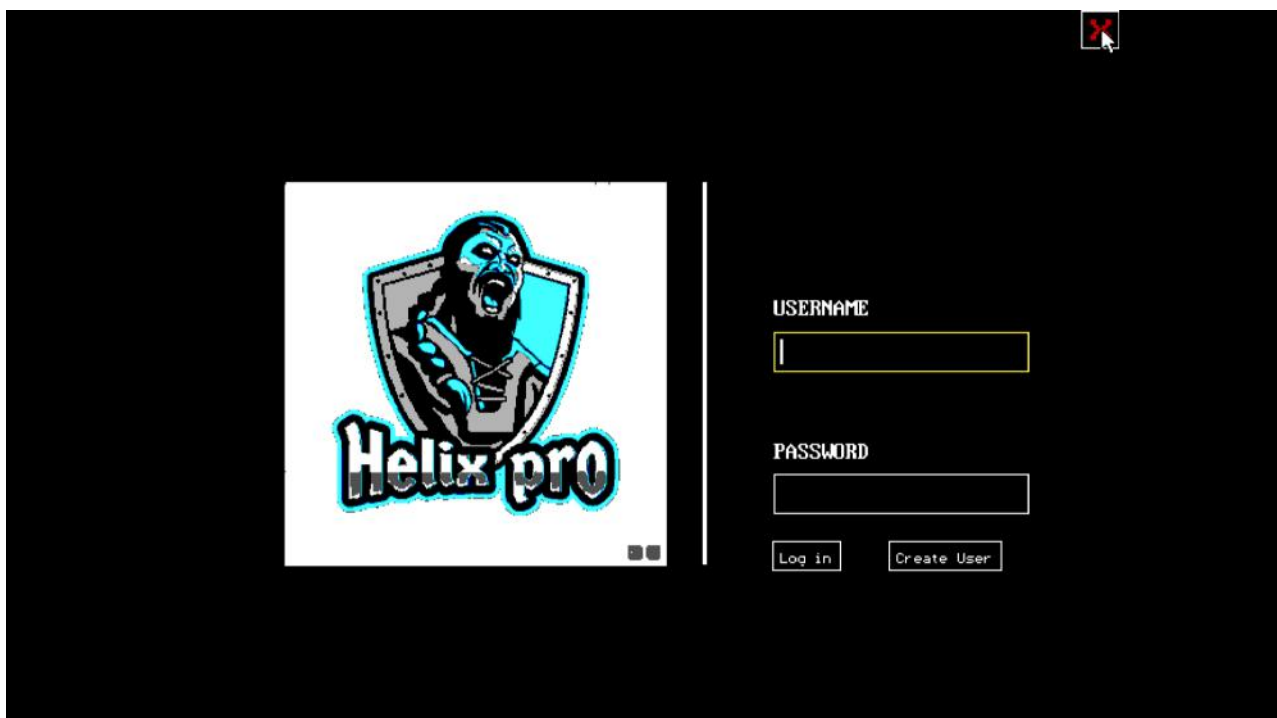
USERNAME

PASSWORD

*Logging off from an User/Admin
(Shutdown can also be done using the 'X' Button)*



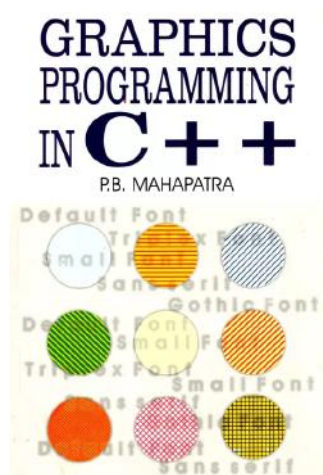
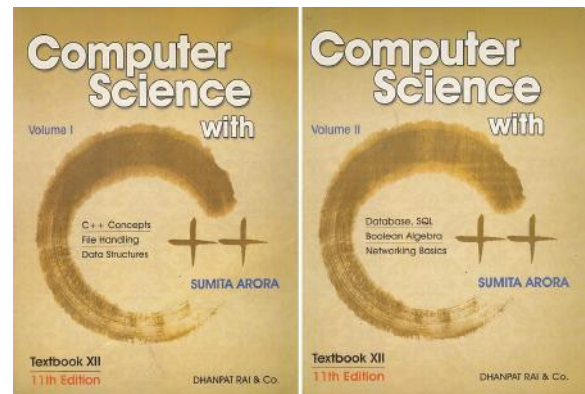
Shutting Down from Helix-Pro after Logging off



BIBLIOGRAPHY

*The most technologically
efficient machine that man
has ever invented is the book.*
-Northrop Frye

**COMPUTER
SCIENCE WITH C++
(Class XI and XII)
- Sumitha Arora**



**GRAPHICS
PROGRAMMING
IN C++
- P B Mahapatra**

WITH REFERENCES FROM
www.stackoverflow.com www.geeksforgeeks.com
www.youtube.com (Channels for Graphics Tutorials)

Brought to you by
PVR PUBLICATIONS PVT. LTD.
MOGAPPAIR WEST, CHENNAI 37.