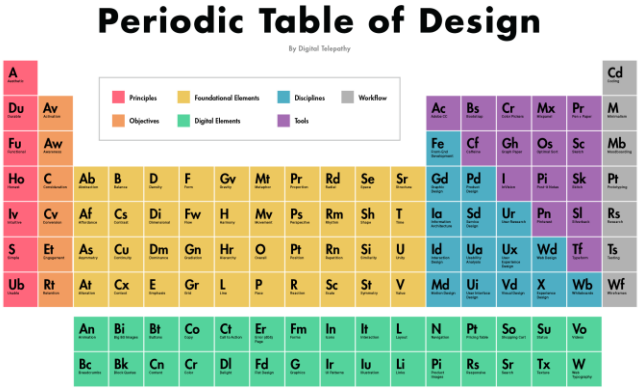
KOLHAPUR INSTITUTE OF TECHNOLOGY'S COLLEGE OF ENGINEERING (AUTONOMOUS), KOLHAPUR

A PRESENTATION REPORT

On

DIGITAL MODERN PERIODIC TABLE



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A PRESENTATION REPORT

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In partial fulfillment of the syllabus

Of

MINI PROJECT

Second Year B.Tech. (Sem-II)

Submitted to

THE FACULTY OF MINI PROJECT

DEPARTMENT COMPUTER SCIENCE AND ENGINEERING

KIT'S COLLEGE OF ENGINEERING (AUTONOMOUS)

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KOLHAPUR INSTITUTE OF TECHNOLOGY'S COLLEGE OF ENGINEERING (AUTONOMOUS), KOLHAPUR

Kolhapur Institute of Technology's

College of Engineering (Autonomous)

Gokul Shirgaon, Kolhapur

Department of Computer Science and Engineering

Faculty of Mini Project

CERTIFICATE

This is to certify that **Rishikesh Mhetre(A26), Sanghavi Dorlikar(A28), Prathamesh Chavan(A36) and Akshata Kulkarni (A37), have** satisfactorily completed the project report entitled **"DIGITAL MODERN PERIODIC TABLE"** as a part of ISE of **Mini Project (Sem-II) during the Academic Year 2020-21.**

Course Teacher **HoD, CSE**

KOLHAPUR INSTITUTE OF TECHNOLOGY'S COLLEGE OF ENGINEERING (AUTONOMOUS), KOLHAPUR

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1. Introduction

Digital Modern Periodic table is a simple project. C++ programming language is used to make this application. In this project, we can get the idea of how to create a science project related to making the periodic tables. We can search the elements both by their periodic name and their atomic number and also by its symbol. After we search the element, it will show you the results by displaying their details.

This program will help students to get the details regarding each element which are available within the periodic table. It will enable the students to get the details of each and every element by just one click. This program is easy to run and get details of each elements. Users have to just select the way they want to search for an element and then press enter to get information such as atomic number, their atomic value, their location in the periodic table, etc.

1.1 Problem Statement

Implementation of Digital Modern Periodic Table which is a simple educational console application using C++ programming Language.

1.2 Project Scope

The main purpose behind successfully making this project is to easily get the specified element and its properties in one click for the learning students. They don't need to install any application, get disturbed by the adds that enter while using that application. It has tremendous scope in today's pandemic situation where students can make use of this project and enjoy the E-Learning.

1.3 Project Overview

The following project report an be divided into four main parts that is, Introduction, Overall Descriptions, specific requirements and conclusion. In the Introduction part, we can get basic knowledge related to Digital Modern Periodic Table. In Overall description, we get information about what this particular Digital Modern periodic Table is all about and it is been implemented. One can understand requirements in specific requirements. Conclusion can give complete understanding of this project.

1.4 Definitions, Acronyms, Abbreviation

Modern Periodic Table –

The modern periodic table is used to organize all the known elements. Elements are arranged in the table by increasing atomic number. In the modern periodic table, each element is represented by its chemical symbol. Columns of the periodic table are called groups and the rows are known as period. Elements in the same group have similar properties.

118 Elements and Their Symbols and Atomic Numbers

Name of the Element	Symbol of the Element	Atomic Number
Hydrogen	H	1
Helium	He	2
Lithium	Li	3
Beryllium	Be	4
Boron	B	5
Carbon	C	6
Nitrogen	N	7
Oxygen	O	8

Fluorine	F	9
Neon	Ne	10
Sodium	Na	11
Magnesium	Mg	12
Aluminium	Al	13
Silicon	Si	14
Phosphorus	P	15
Sulfur	S	16
Chlorine	Cl	17
Argon	Ar	18
Potassium	K	19
Calcium	Ca	20
Scandium	Sc	21
Titanium	Ti	22
Vanadium	V	23

Chromium	Cr	24
Manganese	Mn	25
Iron	Fe	26
Cobalt	Co	27
Nickel	Ni	28
Copper	Cu	29
Zinc	Zn	30
Gallium	Ga	31
Germanium	Ge	32
Arsenic	As	33
Selenium	Se	34
Bromine	Br	35
Krypton	Kr	36
Rubidium	Rb	37
Strontium	Sr	38

Yttrium	Y	39
Zirconium	Zr	40
Niobium	Nb	41
Molybdenum	Mo	42
Technetium	Tc	43
Ruthenium	Ru	44
Rhodium	Rh	45
Palladium	Pd	46
Silver	Ag	47
Cadmium	Cd	48
Indium	In	49
Tin	Sn	50
Antimony	Sb	51
Tellurium	Te	52
Iodine	I	53

Xenon	Xe	54
Cesium	Cs	55
Barium	Ba	56
Lanthanum	La	57
Cerium	Ce	58
Praseodymium	Pr	59
Neodymium	Nd	60
Promethium	Pm	61
Samarium	Sm	62
Europium	Eu	63
Gadolinium	Gd	64
Terbium	Tb	65
Dysprosium	Dy	66
Holmium	Ho	67
Erbium	Er	68

Thulium	Tm	69
Ytterbium	Yb	70
Lutetium	Lu	71
Hafnium	Hf	72
Tantalum	Ta	73
Tungsten	W	74
Rhenium	Re	75
Osmium	Os	76
Iridium	Ir	77
Platinum	Pt	78
Gold	Au	79
Mercury	Hg	80
Thallium	Tl	81
Lead	Pb	82
Bismuth	Bi	83

Polonium	Po	84
Astatine	At	85
Radon	Rn	86
Francium	Fr	87
Radium	Ra	88
Actinium	Ac	89
Thorium	Th	90
Protactinium	Pa	91
Uranium	U	92
Neptunium	Np	93
Plutonium	Pu	94
Americium	Am	95
Curium	Cm	96
Berkelium	Bk	97
Californium	Cf	98

Einsteinium	Es	99
Fermium	Fm	100
Mendelevium	Md	101
Nobelium	No	102
Lawrencium	Lr	103
Rutherfordium	Rf	104
Dubnium	Db	105
Seaborgium	Sg	106
Bohrium	Bh	107
Hassium	Hs	108
Meitnerium	Mt	109
Darmstadtium	Ds	110
Roentgenium	Rg	111
Copernicium	Cn	112
Nihonium	Nh	113

Flerovium	Fl	114
Moscovium	Mc	115
Livermorium	Lv	116
Tennessine	Ts	117
Oganesson	Og	118

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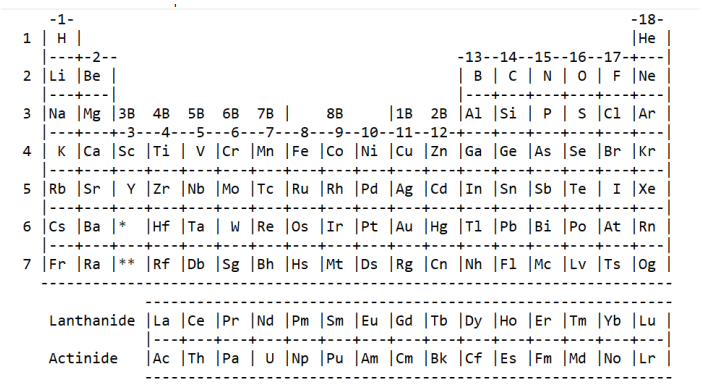
2. Overall Description

2.1 Product Overview

Project is developed by using basic concepts of C++ programming. We provide the main menu options in the project from which you can select any. This program will help students to get the details regarding each element which are available within the periodic table. It will enable the students to get the details of each element by just one click. This program is easy to run and get details of each elements. Users have to just select the way they want to search for an element and then press enter to get information such as atomic number, their atomic value, their location in the periodic table, etc.

Once the program has been run, it will display the Home screen displaying welcome and the people behind this project.



2.2 Product Functionality

Implementation Description –

- **Header files –**

#include<iostream> #include<stdio.h>

#include<conio.h> #include<windows.h>

#include<string.h> #include<process.h>

- **Inbuilt Functions –**

1. goto() – this function helps us to directly go to any function we used in the program.
2. strcmpi() – this function is used to compare the two strings in the program.
3. strcpy() – this function is used to copy the one string as it is to another string.
4. clrscr() – this function is used to clear the screen and make the output window ready for the further execution.
5. getch() – this function is used to get the characters.
6. gets() – this function is used to get the string.
7. Main() – this function is used to access the main part of the program.

2.3 Design and Implementation Constraints

In actual case, the program looks very easy to run but for developer it is quite a lengthy code.

3. Specific Requirements

3.1 User Interfaces

The user should have a C++ compiler to run the code in any operating system (Linux is most preferable) and a bit knowledge about elements of periodic table as a prerequisite.

3.2 Hardware Interfaces

The user should have PC or a laptop where he/she can run the program using compiler.

3.3 Software Interfaces

Any C++ compiler is applicable for this project.

4. Other Non-functional Requirements

4.1 Safety and Security Requirements

There is no harm in using this project. But if in worst case any issue arises while compiling the program resulting in hanging of the device (PC, laptop, etc.) then for security purpose any antivirus software should be preinstalled in the device.

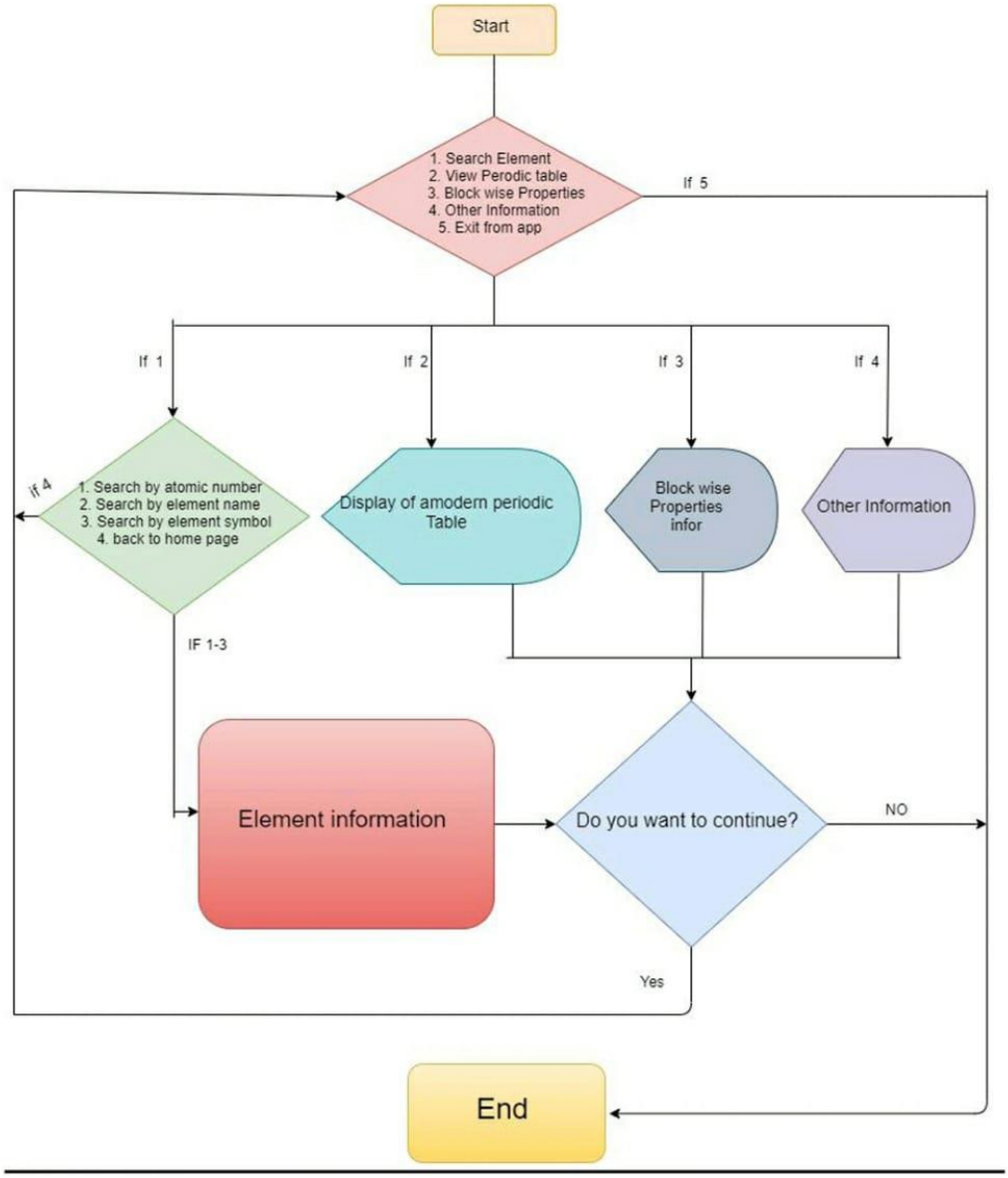
4.2 Maintainability

The Digital Modern Periodic Table have been developed in C++. It is an object-oriented programming language and easy to maintain.

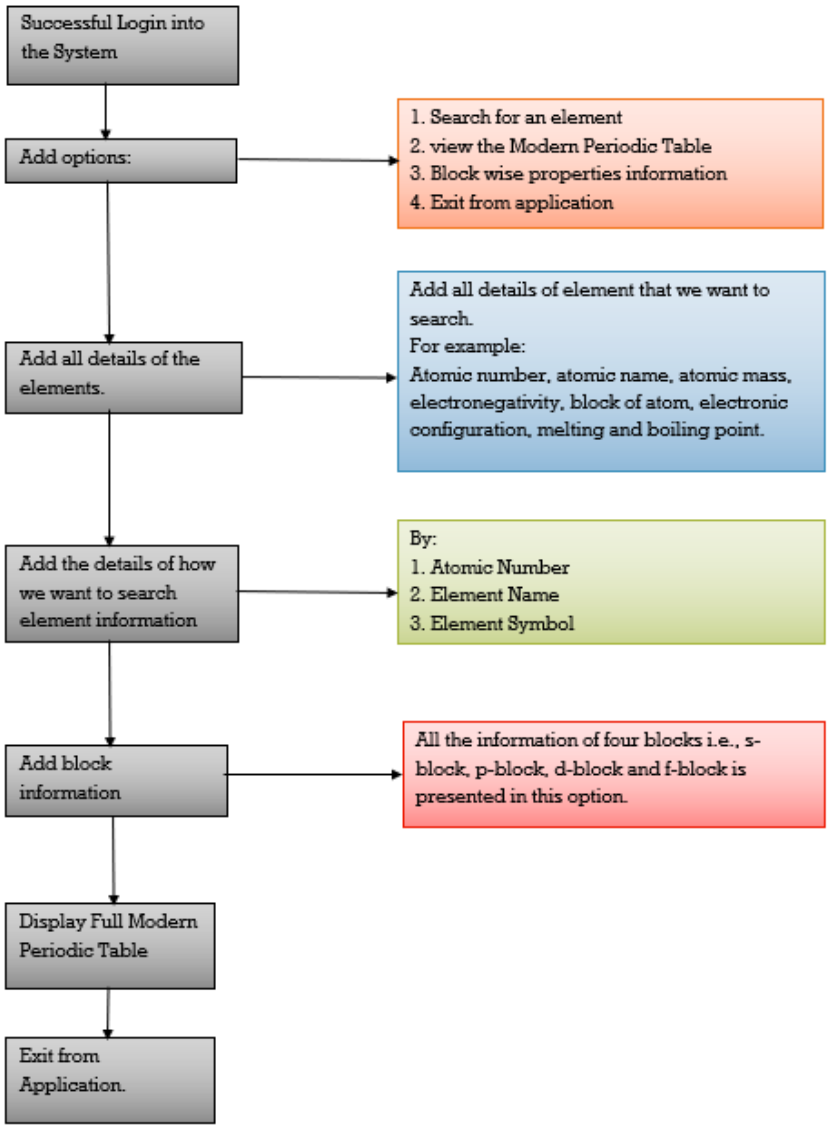
4.3 Portability

The Digital Modern Periodic Table runs in any OS environment that has a g++ compiler installed in it.

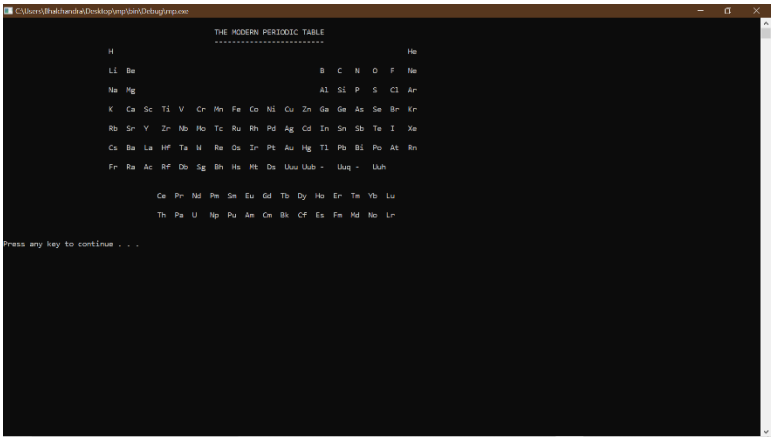
5. Design


Start
1. Search Element
2. View Perodic table
3. Block wise Properties
4. Other Information
5. Exit from app
If 5
If 1
If 2
If 3
If 4
If 4
1. Search by atomic number
2. Search by element name
3. Search by element symbol
4. back to home page
Display of amodern periodic Table
Block wise Properties infor
Other Information
IF 1-3
Element information
Do you want to continue?
NO
Yes
End

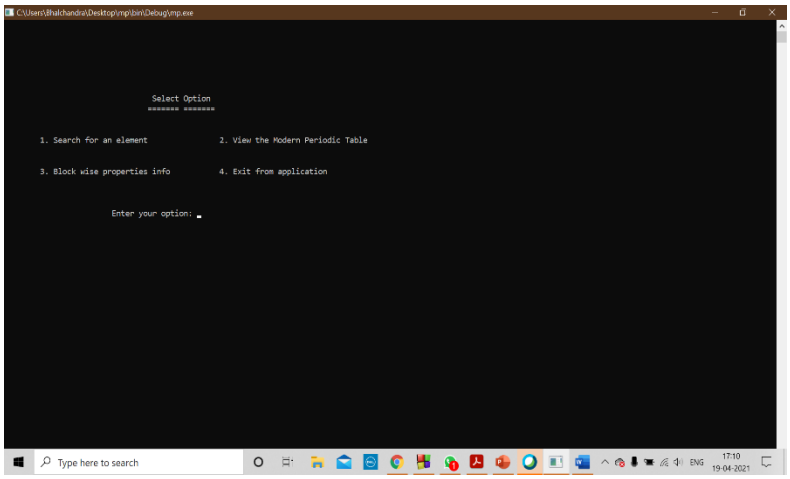
6. Activity Diagram



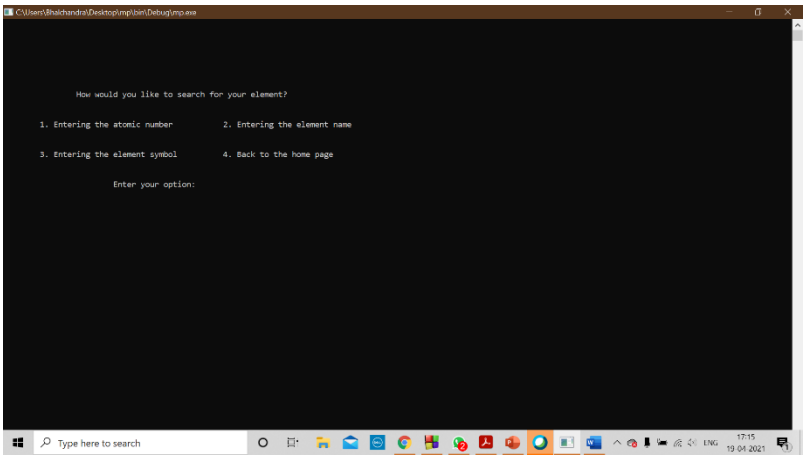
7. Results



Modern Periodic Table display window

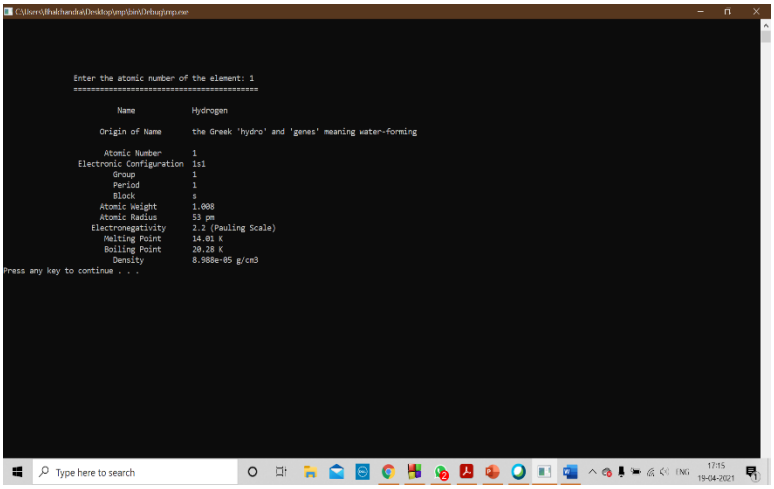


Option Window



Option 1 Window

Element information window



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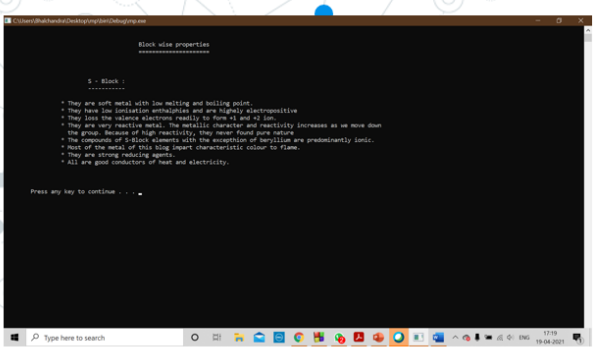
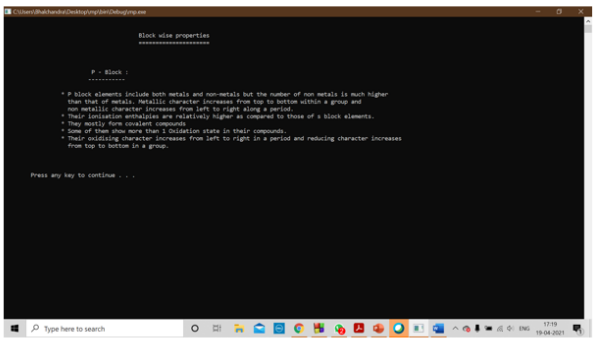
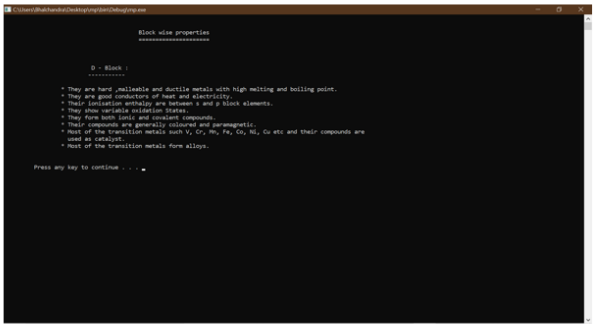
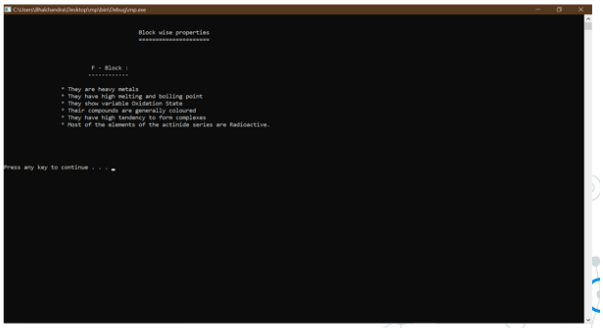
Block information windows









Advantages

- It is an error free developed software.
- It has very simple access to the user.
- Education based software.
- It is also free of cost.

Disadvantages

- Implementation of this software is bit complicated and lengthy.
- A good PC/smart phone and a compiler is must to run this software.

Conclusion

The main objective of the project was to develop an algorithm that will be used to access all the available information of each and every element in Modern Periodic Table that the user wants. It is a very useful application.

References

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