C PROGRAMMING COURSE PROJECT

A GUESSING GAME WITH FREQUENCY OF ELECTROMAGNETIC RADIATION

PROJECT SUBMISSION DETAILS :-

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Course Name:C Programming
Course Code:EST 102

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TABLE OF CONTENTS

INTRODUCTION

C is a procedural programming language It was initially developed by Dennis Ritchie in the year 1972. It was mainly developed as a system programming language to write an operating system. The main features of C language include low-level access to memory, a simple set of keywords, and clean style, these features make C language suitable for system programmings like an operating system or compiler development. Creating a game is an extremely fun and exciting activity that can be done using any programming language .Here our group is building a simple project in C language utilising some it's main features.

OBJECTIVE

This project is oriented to those who want to advance structured and procedural programming understating and to improve C programming skills. The major objective is to receive a basic understanding of code organization and functional hierarchical decomposition with using simple data types.Through this project we are able explore different dimensions in programming and also create a competitive mind in users.The project also create a basic
understanding of different functions in C,its uses,logics of
using apt functions for beginners in Cprogramming.

HEADER FILES

A header file is a file with extension .h which contains C function declarations and macro definitions to be shared [01 between several source files. There are two types of header files: the files that the programme writes and the files that comes with our compiler. We request to use a header file in our program by including it with the C preprocessing directive #include, like we have seen inclusion of stdio.h header file, which comes along with our compiler. Including a header file is equal to copying the content of
the header file but we do not do it because it will be error-prone and it is not a good idea to copy the content of a header file in the source files, especially if we have multiple source files in a program. A simple

practice in C programs is that we keep all the constants, macros, system wide global variables, and function prototypes in the header files and
inc
Example:-
stdio.h
String.h
conio.h

FUNCTIONS USED IN THIS PROJECT:-

main () function :-

It is the entry point of any C program. It is the point at which execution of program is started. When a C program is executed, the execution control goes directly to the main() function. Every C program have a main() function .
[02]

Syntax of Main Function in C:

```
void main()
{
.....
.....
}
```

In above syntax

Void:-

*It is a keyword in C language, void means nothing,

whenever we use void as a function return type then that function nothing return. Here main() function no return any value.
*In place of void we can also use int return type of main() function, at that time main() return integer type value.

Main:-
It is a name of function which is predefined function in C library.
printf(),scanf()
These are pre-defined functions in header file

METHODS &USES

Methods used in this project and their uses:-

1) switch statement
A switch statement allows a variable to be tested for equality against a list of values. Each value is called a case, and the variable being switched on is checked for each [03]
switch case.multiple cases. Once the case match is found, a
block of statements associated with that particular case is
executed. Each case in a block of a switch has a different
name/number which is referred to as an identifier.

SYNTAX FOR SWITCH STATEMENT :

```
switch(expression) {

case constant-expression :
statement(s);
break;                          /* optional */
case constant-expression :
statement(s);
break;                          /* optional */
/* you can have any number of case statements */
default :                       /* Optional */
statement(s);
}
```

USES:-

It is a type of selection control mechanism used to allow the value of a variable or expression to change the control flow of program execution via search and map.

2) WHILE LOOP STATEMENT:-

It allows to repeatedly run the same block of code until a condition is met. while loop is a most basic loop in C programming. while loop has one control condition, and executes as long the condition is true.

[04]

SYNTAX OF WHILE LOOP STATEMENT

```
while (testExpression)
{
// statements inside the body of the loop
}
```

USES:-
It is mostly used in the case where the number of iterations is not known in advance.

3) IF /ELSE STATEMENT:-
These type of statements executes a block of code if a specified condition is true. If the condition is false, another block of code can be executed.

SYNTAX
```
if (test expression)
{
// statements to be executed if the test expression is true
}else{
//statements to be executed if the test expression is false
}
```

USES:-
It used to control the program flow based on some condition.

PROJECT SOURCE CODE

```
include <stdio.h>
#include <string.h>              /*Header files*/
#include <conio.h>
#include <stdlib.h>
void main ()
{
int f,n;.
float secretnumber;              /*Variable deceleration*/
float guess;
int guesscount=0;
int guesslimit=5;
int outofguesses=0;
printf("enter an integer number between 1 and 7\n");.
scanf("%d",&n);

/*commands to print respective electromagnetic radiation
Corresponding to inputted integer*/

switch( n){
case 1:.
printf("Guess the frequency of radiowave\n");.
```

```
break;
case 2:
printf("Guess the frequency of microwave\n");
break;
case 3:
printf("Guess the frequency of Infrared wave\n");
break;
[06]
case 4:
printf("Guess the frequency of visible rays\n");
break;
case 5:
printf("Guess the frequency of uv rays \n");
break;
case 6:
printf("Guess the frequency of x rays \n");
break;
case 7:
printf("Guess the frequency of gamma rays\n");
break; }

/*commands to store frequency of respective electromagnetic
radiation
in THz range Corresponding to inputted integer*/

switch( n){
case 1:
secretnumber=0.000001;
break;
case 2:
secretnumber=0.0006;
```

```
break;
case 3:
secretnumber = 1;
break;
case 4:
secretnumber = 380;
break;
[18]case 5:
secretnumber =750;
break;                                                    [07]
case 6:
secretnumber = 30000;
break;
case 7:
secretnumber = 30000000;
break;
}

/*enter the loop if and only if guessed frequency not equal to correct frequency and
user is not in out of of guesses.Otherwise print respective results*/
while(guess !=secretnumber && outofguesses ==0)
{

   if(guesscount<guesslimit)  /*input a number if guessing count less than
guessing limit*/
    printf("enter a frequency to guess in THz range\n");
    scanf("%d",&guess);

/*display corresponding statement if guessed  frequency greater than correct frequency*/
    if (secretnumber<guess)
    printf("Oops! your guess is greaterthan correct
value\n");
```

```
    /*display corresponding statement if guessed frequency less than correct frequency*/
    else if(secretnumber>guess)
     printf("Oops! your guess is lessthan correct
value\n");

    guesscount++;     /* incrementing guess count*/
}

else{

        outofguesses =1; /*process showing chance of guess isover*/
      }
 }                                                          [08]

if (outofguesses ==1){

/*displaying corresponding statement since chance to guess is over*/

printf("You are out of guesses.Better luck next
time\n");
 }
else{
/*displaying user wins the game*/

printf("you win, congratulations\n");
 }

getch();

}
```

CONCLUSION

In conclusion ,we are familiarised with different properties and syntax of C programming .For completing the project we had referred lots of c programming text books and online web pages.As a result we are able to bring
out a good out put in this project. Last but not the least we sincerely expressing our gratitude to our instructor and friends who supported us.