

**BAHRIA UNIVERSITY ISLAMABAD CAMPUS**

**COMPUTER PROGRAMMING**

**FINAL PROJECT REPORT**

**CLASS:BS-IT (1-A)**

**DATE:6/11/2023**

SUBMITTED TO:

**NAME: SIR ABRAR AHMED**

**(LECTURER COMPUTER PROGRAMMING)**

**SUBMITTED BY:**

1. **SAMI UR REHMAN RAJA**

* **01-135231-084**

1. **KASHMALLAH SHAH**

* **01-135231-041**

**Contents**

[**APPROVAL SHEET** 2](#_Toc137396069)

[**ACKNOWLEDGEMENT** 4](#_Toc137396070)

[**ABSTRACT** 5](#_Toc137396071)

[**Background** 6](#_Toc137396072)

[**Program Output** 8](#_Toc137396073)

[1. OUTPUT SCREENS 8](#_Toc137396074)

[**2.** **METHODOLGY:** 16](#_Toc137396075)

[a. FUNCTIONS 16](#_Toc137396076)

[**LIMITATIONS AND FUTURE PLANS:** 25](#_Toc137396077)

[**CONCLUSION** 26](#_Toc137396078)

# **APPROVAL SHEET**

The following project **“Fortune Teller”** is a small program created using C++ as a part of our Project. It is a program based on astrological arrangements. It makes extensive use of user defined functions and case control structures. It is a program, rather the application of the knowledge obtained in the First Semester of **BS INFORMATION TECHNOLOGY**. We are submitting herewith a Project report written by **KASHMALLAH SHAH (01-135231-041)** and **SAMI UR REHMAN RAJA (01-135231-084)** entitled **“Fortune Teller”.** We have written and created this project as a part of our university’s curriculum using **C++** programming language in **Microsoft Visual Studio** compiler (preferred by most of the programmers) and request that it be accepted in partial fulfillment of the requirements for the first semester Computer Programming Project.

-----------------------------

(ABRAR AHMED)

(Lecturer of CP)

( Department of Computer Sciences Islamabad)

# **ACKNOWLEDGEMENT**

Title: Fortune Teller

Although, this project was an effort of two individuals but it would not have been possible without the support of elders and friends .First of all we would like to thank our teacher **Mr. Abrar Ahmed** and the entire computer department for their useful suggestion and encouragement.

We would like to thank our **Computer Programming Lecturer** for helping us with learning C++, to our computer department and the HOD sir for their encouragement.

In addition to all the help from our teacher, we received a lot of help and support from our friends. We would like to thank our friends, especially **Shams ul Islam (CR of BS-IT 1A)** and many others for assisting and helping us in our research. Without their critical analysis and timely suggestions this project would not have been a success. Their suggestions and comments have been most helpful for the development of the program and they deserve a significant part of the credit that goes to this program. We would like to thank them for sharing their ideas and knowledge without much of problem.

**For all the people who helped us a lot, thank you very much and may god bless you all.**

Sami ur Rehman Raja (01-135231-084)

Kashmallah Shah (01-135231-041)

# **ABSTRACT**

This project **“FORTUNE TELLER”** is a project designed as per the requirement for the accomplishment of the BS IT first Semester syllabus. It is a small program developed for fun and extensively to exercise what we have learnt during the semester study. This program takes the birth date of the user and gives the predictions as per the date of birth and the astrological configuration of that time. It also gives you your fortune, calculates lucky numbers for you and also finds you your love compatibility among different horoscopes. This program uses different features of C++, right from simple mathematical calculations to extensive use of modular programming and case control structures. We have developed this program using Microsoft Visual Studio compiler and hence have created the functions that are not supported by **‘code blocks’** for our own like **gotoxy() , delay()** etc. It does not use any graphics functions yet the scarcity has been tried to fulfill using **ASCII** arts at various places of the program. Although this program may seem very easy to imagine, we have done extensive homework and a very hard labor to maintain the standard of the program. Moreover the program contains another block known as **“Administrative tools”** which is the area of application of file handling tools. Here, you can access the names of the users who have used our program, search for the birthday of any user who has used our application or delete his record. Not to be forgotten, this sector of the program is password protected. In this manner we are proud to say that, ‘what we designed using file handling tools’ have successfully been able to use in our program itself. Hence, we don’t need to bother the application part of the file handling that we have learned.

We have tried our very best to make our program as user friendly as possible. Hope, you enjoy using our program!

# **Background**

The invention of science and technology has made our world a small village. Its discovery has made our day-to-day lives easier. The places where people have to walk for days to months now can be reached within a few hours or even a few minutes due to science and technology. Yet even in the modern century and even throughout history, there has always been a topic that has been a subject of interest, **Time Travel**. What if I could go to the future? What if I could go back in time to change for a better future? What if I could predict the future? What if... Well so far time travel is just limited to science fiction movies, but there are ways to predict the future and even past. It’s called **FORTUNE TELLING**. For long our ancestors have gazed upon the stars and omens among them to predict the future and there’s no denying that in many instances they have come true. And this has always interested people though they come from different cultural backgrounds. This is what our project is based on – **Fortune Telling**.

This project IS primarily designed for a semester project for **“Computer Programming”.** This project, as its title **“FORTUNE TELLER”** suggests, is an attempt to develop software that is not only simple software but it’s an approach to create much more complicated software like these.

We will not boast that the project is complete by itself and bug-free at its present version; however, we believe it can serve as a starting point.

Our Project has tried to gather up the different parts of fortune telling. Here we, SAMI and KASHMALLAH , have used traditional methods and gathered up enough knowledge on this through extensive research. On this program, we basically ask for your date of birth and upon entering the correct date of birth, it shows prediction of the future. You’ll be able to know what your future will be like, How your health will stand out, What will happen in your relationships, What are your birthstones, Which colors are lucky for you, Lucky Numbers, etc. These predictions and calculations are based on upon the astrological configuration that occurred at the time of your birth. This is total mathematics based on astrological configuration. Astrological configuration has direct effect on our daily life that we share. We have just tried to interpret them into various future predictions in simpler way as far as possible. Our project, as discussed above, tells you about the future, your horoscope character traits, lucky numbers, even love compatibility, love status, marital status and of course fortunes.

Now let’s get to the programming part. At first it might seem like an easy project that can be manipulated with handling of few arrays, constructing few ‘read only’ databases where you’ll not be able to edit and access the main database. It is easy on the part of database but the main thing we must focus on is that there are 12 horoscopes or basically 12 types of people. Even within the same horoscope many traits defer from people to people based on few conditions. For example, two people born 22nd March and 10th April do not have same characteristics though both being Aries due to the pattern of the planetary configuration during the time of their birth. Thus, we have focused on date of birth to give our fortunes as it is not necessary for all people in Aries to have the same prediction or same future. It’s not to say they won’t have any similarities because it ranges within few people having similar planetary configurations and even fewer similarities with the whole of Aries. Therefore, we had to create different sets of databases of people of different horoscopes and also different date of birth within same horoscope. Doesn’t seem much easier now, does it?

We also have another section i.e., Lucky Number. Your lucky numbers is based on your horoscope (i.e., Date of birth). For every different date of your birth, you’ll have different sets of lucky numbers. We have 4 lucky numbers for you in a set. Each set is unique and will not match with any other entries.

We also have fortune telling. It is totally dependent on the time of your entry. We use the time that you logged on to use the program as the way for giving out fortunes. These may or may not match will your latter fortunes.

We have Love Compatibility. This calculates the compatibility between two people of the same or different horoscope. We have considered using horoscope as the determining factor rather than the date of the birth. Thus, a love compatibility result Gemini girl and Aquarius boy has same result as Gemini boy and Aquarius girl as this program is based on horoscope. Each horoscope can check its love compatibility with all 12 horoscopes and vice versa. Either way it is tedious, isn’t it?

This is what we basically have. We also have a welcome screen and then an entry part. The Entry part is for entering your date of birth. Here only correct date-month-day combinations are allowed to enter. Incorrect dates are denied access and asked to re-enter. If the re-entry again has incorrect entry the program restarts from the welcome screen. The restarts time is given 3 seconds. In case of correct entry, the user is asked to enter name and sex for registry purpose. Then the user will be taken to a new screen having 6 options as About yourself, Fortunes, Lucky Numbers, Love Compatibility, Administrator Tools and Exit option. Former four have already been discussed above. About Administrator tools are for Administrator only. It’s for editing the database and registry info. The user is asked to enter password to access the option and correct password is given entry. In case of wrong password entry till 3 successive time the program restarts after 5 seconds. Sixth option is Exit options which exits the program.

# **Program Output**

## OUTPUT SCREENS

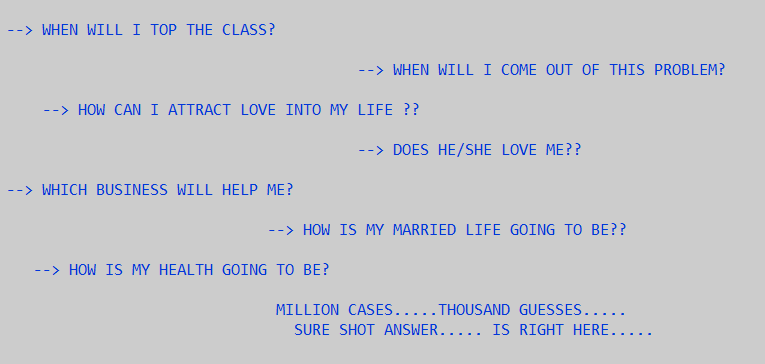
Our program starts with welcome screen. The welcome screen has been tried to make a bit humorous so as to increase the interest of the user towards the program. The welcome screen is as shown below:

A picture containing text, screenshot, font, design

Description automatically generated

A screen shot of a computer screen

Description automatically generated with low confidence



A yellow background with white text

Description automatically generated with low confidence

The page shown above asks the user to input the date of birth and the screen layout changes. The change of screen marks the limit of scope of the welcomescreen() function. The date of birth is wrongly entered, for example if the age turns out to be greater than 100, or if February happens to have 30 days or April happens to have 31 days, the program will immediately detect the error in the program and requests the user to re-enter the date correctly.

A blue screen with white text

Description automatically generated with medium confidence

If the user happens to enter wrong date again ,then the program will restart in 3 seconds. The user is notified before the process takes place.

But if the user enter the correct date then the screen changes and a new screen appears where the user is asked the his name and sex.

A screenshot of a computer

Description automatically generated with medium confidence

The program proceeds the menu bar which provides the user with various menus. The screen that appears would contain the users name, age and sex in the top right corner of the window. Similarly, ASCII art of the users horoscope would be displayed in the top left corner of the window.

The layout of the screen is shown below. The tasks of various options have already been discussed in the background of the program. The working output of various options shall proceed the main menu layout.

A screenshot of a computer

Description automatically generated with medium confidence

If the user wishes to exit then he may choose option number 6. But if the user wishes to change the date of birth, he needs to restart the program and for this he doesn’t need to terminate the execution of the program. If the user presses any other key then the program will automatically restart the program that is the welcome screen will be displayed and the re-entry may be made.

The screen below is the screen of “About Yourself” option. The predictions made by the program is absolutely based on the date of birth and no two consecutive dates of birth shall get the same prediction yet there is the possibility that two or more people of shame Zodiac sign may have some similarities in the predictions done for them by the program.

The user is asked to press a key after every prediction is made so that it is easy for the user to read his future and the display is neat. A user may get at most 5 predictions. At the end of all the predictions the program asks the user to enter any key and on making the entry the layout regains the menu bar.

A screenshot of a computer screen

Description automatically generated with low confidence

The screen shown below is the one that shows fortunes. The manipulation of the fortunes is based on the precise time of use of the software and a single may or maynot have the same fortune at two different instance of time.

After the fortune has been displayed, like earlier case the user will be asked to user to enter any key and on making the entry the layout regains the menu bar.

The next screen following is the screen the displays the lucky numbers for the user and is different for different dates of birth. The lucky numbers for a date of birth shall never change, whenever the program is executed.

A screen shot of a computer

Description automatically generated with low confidence

A picture containing screenshot, text

Description automatically generated

There are four lucky numbers and there is a gap of 1 second before the next number is printed. Like earlier , after all the numbers are printed, the user will be asked to user to enter any key and on making the entry the layout regains the menu bar.

The screen for the “Love Compatibility” options further opens to a menu containing 12 Horoscopes. Its layout is as shown below. It gives 12 options, each containing the name of a horoscope and asks for the choice with the user. The result will be displayed according to the choice made by the user. The two layouts are given in the next page.

A screen shot of a black screen

Description automatically generated with low confidence

A screenshot of a computer

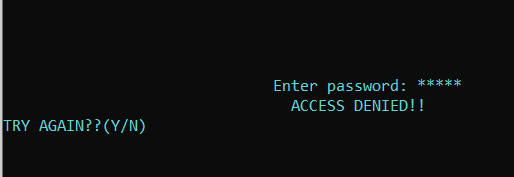
Description automatically generated with medium confidence

At the completion of the display, as usual the user will be asked to user to enter any key and on making the entry the layout regains the menu bar.

The next option is called ‘Administrator tools’. It provides the user to administer the entire program and this portion of the program contains some of the file handling exercises. First the program asks for the password with the user. The layout of the password screen is a simple screen with the statement of to ask the password at the centre of the screen. If correctly entered a new screen opens but if wrongly entered the program shall provide at maximum of 3 chances and upon all three wrong password entries, the program shall restart again.

A picture containing screenshot, darkness, black

Description automatically generated



The new screen to which the program opens to when the password is correctly entered contains four options. The different options provide the user with different functions. This part of the program is basically the one that collects statistics. The top right corner of the new window provides the administrator with the number of users that have used our program. The layout of the screen is shown below:

A screenshot of a computer program

Description automatically generated with low confidence

The first option of the program enables the administrator to view the name of all those people who used our program and various information about them. Once the administrator is availed with the of births he may easily access the future, lucky numbers and love compatibilities of any user who has used our program previously.

After all the records have been displayed, the program returns to the administrator options again.

The second option helps the administrator to check if any particular user has used the program so that he can gather personal information about the user like date of birth, age etc.

The third option provides the administrator with the option to delete the record.

The fourth option allows the administrator back to the previous menu.

Last but not the least in the the last 6 Exit option the program is terminated with showing the names of the developers of the program. As given below:

A picture containing text, screenshot, font

Description automatically generated

## **METHODOLGY:**

### FUNCTIONS

As previously mentioned, our program makes and extensive use of user defined functions and case control structures. In fact they form the backbone of the program. Yes there are many functions but many are similar, for example there are 12 functions to print the ASCII representation of the 12 Horoscopes which are similar and hence can be discussed under same algorithm. We have thus tried to define such similar functions through a single algorithm and the similar functions are named below the respective algorithm. We will try to discuss all possible functions so that our logic is easily and effectively conveyed.

#### USER DEFINED FUNCTIONS

These are the user defined functions required throughout the program like functions to locate cursor in the screen, functions to draw ASCII representations, functions to display different menus, functions to check passwords etc. The list of functions is as follows:

void gotoxy(int,int); void welcomescreen();

int password(); void cusp(int);

void delay(int); int main();

void fortunes(); void asciiaries();

void asciitaurus(); void asciigemini();

void asciicancer(); void asciileo();

void asciivirgo(); void asciilibra();

void asciiscorpio(); void asciisaggitarius();

void asciicapricorn(); void asciiaquarius();

void asciipisces(); void compat(int);

void details(char \*,char,int); int zodmenu();

int lovemenu(); void admintools();

**The type of argument that the functions above take is given in the brackets.**

#### CONT…

They are in fact the names for twelve Horoscopes. Since they are 12 similar functions forming a block entirely different from the main block of the program, we thought it would be better to collect all these similar functions so that we won’t be bothered to include each of them into the main function.

The list of the functions defined this program is as below:

void aries(int,int,char \*,char); void taurus(int,int,char \*,char);

void gemini(int,int,char \*,char); void cancer(int,int,char \*,char);

void leo(int,int,char \*,char); void virgo(int,int,char \*,char);

void libra(int,int,char \*,char); void scorpio(int,int,char \*,char);

void saggitarius(int,int,char \*,char); void capricorn(int,int,char \*,char);

void aquarius(int,int,char \*,char); void pisces(int,int,char \*,char);

Most of the functions defined are of the ‘void’ type. They have been declared so realizing the fact that a function can return only one value at time and since it is the operation that we need in the program here, we didn’t really bother managing the returned value of these functions. Only for some special conditions, where returning the value by the function turned to be as important as its operation, we have defined few ‘int’ type of functions.

#### gotoxy(int,int):

This is a user defined function to set the cursor in definite coordinate in the screen. The algorithm for the function is given below:

1.Start

2.Recieve the value of formal arguments x,y.

3.Set a global variable coord={0,0}

4. Set the value of coord={x,y}

5.Reset the cursor in the coord={x,y} in the screen

6. End

#### welcomescreen():

This function uses simple looping statements with the aid of the gotoxy() function to plot a boundary and display ASCII art in the screen. The algorithm is shown below:

1: Start

2: Set two integers i, j so that gotoxy(i ,j) gives a location within the screen

3: Using loops, draw “\*” in the top row, bottom row, leftmost column and rightmost

column.

4: Set the cursor location and print the ASCII art

5: Clear screen and write few statements on the screen.

6:End.

#### password():

This is an ‘int’ type of function which returns 1 value if the password matches. The function is already supplied with the password, in the form of array, as the correct password and the function checks if the entered string matches the correct password.

* **THE PASSWORD IS “fortune”.**

The algorithm is given below:

1: Start

2: Set an array of characters to take password

3: Take the string using \_getch() function to print “\*” on the screen for each

Character of the string.

4: Check if the input string matches with the predefined array of character?

Yes: return 1 and end

No: Ask for retry for n=1

Yes: Is n>3

Yes: Display a message and restart the program

No: Goto step 3.

No: Return to the calling function.

5:End.

#### cusp(int x):

This is a ‘void’ type function that takes an argument. This function contains two dimensional array of characters which is accessed using pointers. Had the array been tried to access using arrays, the execution of the program would have been slower. The algorithm of the function is given below:

1: Start

2: Declare a 2-D array of characters using a pointer variable say \*a[i].

3: Receive the value of formal argument I.

4: Access the array a[i] and display it on the screen.

5: End.

#### delay(int):

This void function also takes argument. This function uses a nested looping technique to elapse a certain duration of time. It has been **‘experimentally’** found that looping for about 105500000 times without including any operation in the loop body elapses one second. This loop is nested inside the loop formed by using the value of the formal argument. The algorithm of the function is given below:

1: Start

2: Receive the value of formal argument x

3: Set the value of integer variable n=1

4: increase n by 1, n++

5: Is n>x?

Yes: End

No: Set a=1

Increase a by 1, a++

Is a>105500000?

Yes: Goto step 4

No: a++

#### fortunes():

This is another void type of function which generates random number and finds its remainder when divided by 100 and sets its value to a definite variable x. Then the function accesses the data stored in the \*(fort+x)location and displays it to the VDU.

#### asciiaries():

The algorithm for the functions like asciiaries()is given below:

1: Start

2: Goto the certain coordinates of the screen

3: Print the different symbols

4: End

The following 11 functions will have the same algorithm and the working principle:

void asciitaurus(); void asciigemini();

void asciicancer(); void asciileo();

void asciivirgo(); void asciilibra();

void asciiscorpio(); void asciisaggitarius();

void asciicapricorn(); void asciiaquarius();

void asciipisces();

#### compat(int a):

This function takes the argument that is of integer type and is named a. This argument is used by the program to access the elements of the array called **love.** The algorithm of the function is given below:

1: Start

2: Receive the value of a.

3: Retrieve the ath element of the array using pointer .

4: end

#### details(char \*,char, int ):

This function takes three arguments. The first one is the pointer to the array of characters, the second is a simple character and the third is the integer. The work performed by this function is to print these details to the VDU of the computer using gotoxy() function.

#### int zodmenu();

This is a int type of function and hence returns a integer value to the calling function. This function simply prints the menu bar for the different zodiac signs in the screen using gotoxy() function. Another function that performs the same task is **int lovemenu().**

#### admintools():

This is an avid type of function which contains the complete set of codes for the administrator mode of the program. It contains four parts managed by the case control structure. The algorithm for the function is as below:

1: Start

2: display the menu and ask for the choice.

3: store the choice in a.

4: is ‘a’ equal to 1?

Yes: goto entry viewing section of the code

No: return to the calling function.

Is ‘a’ equal to 2?

Yes: goto entry searching section of the code

No: return to the calling function.

Is ‘a’ equal ‘ to 3?

Yes: goto entry deleting section of the code

No: return to the calling function.

Is ‘a’ equal to 4?

Yes: return to the calling function

No: return to the calling function.

##### Algorithm for viewint he entries:

1: Start

2: open “records.txt” file in ‘read binary’ mode

3: ‘fread’ the data in the file accordin to the size of the defined structure.

4: display the data.

5: is EOF reached?

Yes: end the program,

No: goto step 3.

##### Algorithm for searching entry:

1:start

2: read the name to be searched and store it in an array of characters

3: open the file”records.txt” in ‘read binary’ mode.

4: check for the matching case.

5: display the result if positive

6; end the program if negative

##### Algorithm for deleting data:

1:start

2: read the name to be searched and store it in an array of characters

3: open the file “records.txt” in ‘read binary’ mode

4:open a temporary file”temp.txt” in ‘write binary’ mode

5:read the data from “records.txt”

6:is any matching results found?

Yes: skip the current process and goto the next one

No: write the data to “temp.txt”

7:is EOF reached?

Yes:goto step 8

No: got step 5

8: remove original file”records.txt”

9: rename “temp.txt” as “records.txt”.

10: end the program.

#### main():

It is the main function of the program. As the program is run, it starts executing from main function. This function appears to be small as at the time of need of any sort of operation, it calls to other functions. The first function it calls would be welcomescreen().This is just for the decoration ad fun part. Then the function takes the date of birth as input and checks of the different horoscopes. On getting the suitable match it calls the relevant function and all the rest of the work is performed through this function. The algorithm is given below:

1:start

2:call the function welcomescreen()

3: take the input date of birth

4: check for the errors

5; is the input error free?

Yes: goto step 6

No: goto step 3

6: check for the condition of horoscopes

7: call the matching horoscope

8: end

#### void aries(int,int,char \*,char);

This is a void type of function and it is the mainframe which governs the entire program. The main menu has been designed as per the formality only, once the program advances to this section of the program, the main function remains passive. It contains several options. It takes 4 arguments, the first two are integers, the third is the pointer to the array of characters, the fourth is the character. This entire block of the program is governed by case control structure. The user is displayed the menu bar and is asked to input a choice and the program control marches to different block of the coding according to the input choice. The algorithm for this function is given below:

1:start

2:display the menu bar and ask for a choice

3:store the choice in ‘a’

4:is a=1?

Yes: display the data stored in the array about the user.

No: is a=2?

Yes: display fortunes

No: is a=3?

Yes: display lucky numbers.

No: Is a=4?

Yes: call the function lovematch()

No: return to the calling function.

The function with similar working structure are as follows:

void taurus(int,int,char \*,char);

void gemini(int,int,char \*,char); void cancer(int,int,char \*,char);

void leo(int,int,char \*,char); void virgo(int,int,char \*,char);

void libra(int,int,char \*,char); void scorpio(int,int,char \*,char);

void saggitarius(int,int,char \*,char); void capricorn(int,int,char \*,char);

void aquarius(int,int,char \*,char); void pisces(int,int,char \*,char);

# **LIMITATIONS AND FUTURE PLANS:**

1. More interactive Introducing Menu and welcome screen with sound effects and graphics

2. More information about the user’s future

3. A new block in the program that can show the astrological configuration itself. Since it is pure mathematics, it might not be too difficult. But you need a extensive study.

4. Colors effects

5. Calculation of love compatibility in percentage

6. Sound Effects

7. Background music and much more....

“Choosing the right precision for a problem where the choice matters requires significant understanding of floating-point computation. If you don't have that understanding, get advice, take the time to learn, or use double and hope for the best.”  
― **Bjarne Stroustrup,**[**The C++ Programming Language**](https://www.goodreads.com/work/quotes/108084)

# **CONCLUSION**

In conclusion, we want to emphasize that the program is not complete by itself. There is still a lot of room for improvement. Graphics may be added to program to make it more attractive as well as interactive. The administrator control can be made stronger in the program. There are many features that can be added in the program to make the users get maximum benefit.

THE END