CCP Project

UNIVERSITY ADMISSION ELIGIBILITY CALCULATOR

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Project Report: University Admission Eligibility Calculator

Abstract

This report outlines the development of a University Admission Eligibility Calculator designed to automate the evaluation of a student's eligibility for admission to various top engineering and technology universities in Karachi, Pakistan. The system uses a combination of SSC, HSC, and Aptitude Test scores to assess eligibility. This project simplifies the admission process, ensuring consistency, fairness, and transparency. The system can be easily customized to accommodate the eligibility criteria of different universities.

1. Introduction

The University Admission Eligibility Calculator is developed to address the complex process of determining a student’s eligibility for university admissions. By automating the evaluation process, the system eliminates human error and speeds up the decision-making process. The primary goal of this project is to create a console-based application that will assist students in evaluating their eligibility for admission into various universities based on their academic scores.

2. Technical Terms and Concepts

• SSC (Secondary School Certificate): The secondary school academic qualification in Pakistan.
• HSC (Higher Secondary Certificate): The higher secondary school academic qualification in Pakistan.

• Aptitude Test: A standardized test used by universities to assess a student's skills and knowledge.
• Eligibility Criteria: The specific requirements (e.g., minimum score thresholds) for admission into a university.
• Weighted Average: A calculation that assigns different weights to the different components (SSC, HSC, Aptitude Test) based on the importance assigned to each in the eligibility evaluation.

3. System Design and Implementation

3.1 Dataset

• Input Data: The system collects SSC, HSC, and Aptitude Test scores from the user.
• Output Data: Eligibility results for each university.

3.2 Model Architecture

• Data Collection and Evaluation Logic:
  - Input: SSC, HSC, Aptitude Test scores.
  - Processing: Weighted average calculation based on university-specific eligibility formulas.
  - Output: A list of universities where the student qualifies for admission.

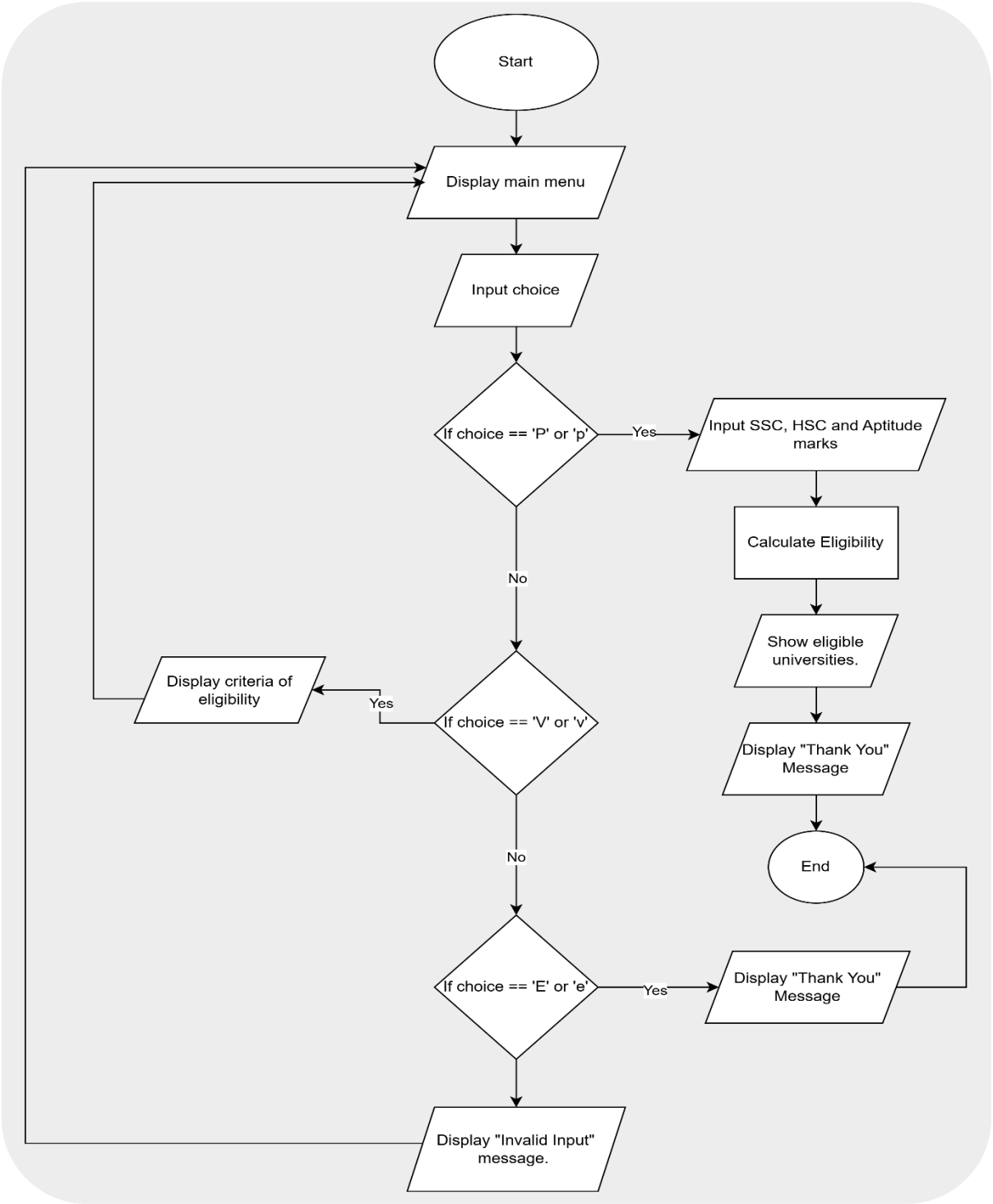
3.3 Training and Compilation

While there is no machine learning model in the current version of the program, future improvements could include the development of an AI model to predict eligibility based on additional factors, such as extracurricular activities, personal statements, etc.

3.4 Modular Functions

• Input Collection: Accepts and validates SSC, HSC, and Aptitude Test scores.
• Eligibility Calculation: Evaluates eligibility using weighted formulas for each university.
• Eligibility Display: Outputs the list of universities the student is eligible for.

4 .Architecture Of Project :



5. Code :

```
#include<stdio.h>
#include<stdlib.h>
#include<windows.h>
void star(int s)
{
   for(int i=0;i<=s;i++)
   {
      printf("*");
   }
}
void gotoxy(short int x, short int y)
{
   COORD arrow={x,y};
   SetConsoleCursorPosition(GetStdHandle(STD_OUTPUT_HANDLE),arrow);
}

int main ()
{
   char choice;
   float ssc, hsc;
   float apt[10];
   int count=0;
```

```
    const char *uni[10]={"NED University of Engineering & Technologyy", "FAST-NUCES",
"Dawood University of Engineering & Technology", "Sir Syed University of Engineering &
Technology (SSUET)", "Indus University", "PAF-KIET (Karachi Institute of Economics &
Technology)", "Bahria University", "Hamdard University Faculty of Engineering Sciences &
Technology (HIET)", "Iqra University", "Institute of Business Administration (CS, Data Science
& tech programs)"};


   while(1)
   {
      Sleep(700);
      fflush(stdout);
      printf("\n\t");
      star(120);
      printf("\n\n");
      gotoxy(50,2); printf("| THE ULTIMATE ELIGIBILITY CALCULATOR |");
      printf("\n\t");
      star(120);


      Sleep(300);
      fflush(stdout);
      printf("\n\n");
      gotoxy(60,7); printf("WELCOME USER!");
      printf("\n");
      gotoxy(59,8); printf("_______________");
      Sleep(300);
      fflush(stdout);
      printf("\n\n\n\n");
```

```
gotoxy(3,12); printf("THIS IS A PROGRAM THAT WILL TELL YOU WHETHER YOU ARE ELIGIBLE FOR ANY OF THE TOP TEN ENGINEERING AND TECH UNIVERSITIES IN KARACHI.");

gotoxy(3,14); star(128);


Sleep(300);

fflush(stdout);

printf("\n\n");

gotoxy(45,18); printf("PRESS 'P' OR 'p' TO PROCEED WITH THE PROGRAM.\n\n");

Sleep(300);

fflush(stdout);

gotoxy(68,20); printf("OR");

Sleep(300);

fflush(stdout);

printf("\n\n");

gotoxy(35,22); printf("PRESS 'V' OR 'v' TO VIEW ELIGIBILITY CRITERIA FOR EACH UNIVERSITY. ");

gotoxy(68,24); printf("OR");

Sleep(300);

fflush(stdout);

printf("\n\n");

gotoxy(50,26); printf("PRESS 'E' OR 'e' TO EXIT THE PROGRAM. ");

scanf("%c",&choice);


if(choice=='P' || choice=='p')

{

   Sleep(500);
```

```
fflush(stdout);
system("cls");
printf("\n\t");
star(120);
Sleep(500);
fflush(stdout);
gotoxy(55,2); printf("PROVIDE THE FOLLOWING DATA");
printf("\n\t");
star(120);
Sleep(500);
fflush(stdout);
printf("\n\n");
Sleep(500);
fflush(stdout);
gotoxy(50,10); printf("Enter your SSC/Matriculation score: ");
scanf("%f",&ssc);
Sleep(500);
fflush(stdout);
printf("\n");
gotoxy(50,15); printf("Enter your HSC/Intermediate score: ");
scanf("%f",&hsc);
Sleep(500);
fflush(stdout);
system("cls");
printf("\n\t");
star(120);
```

```
        gotoxy(10,2); printf("SSC: %.2f",ssc);

        gotoxy(117,2); printf("HSC: %.2f\n",hsc);

        printf("\t");

        star(120);

        printf("\n\n");

        gotoxy(40,4); printf("ENTER YOUR APTITUDE TEST MARKS FOR THE
FOLLOWING UNIVERSITIES:");

        printf("\n\n");

        gotoxy(35,6); printf("(If you haven't taken the test for any of the university below, type
0)\n");

        printf("\n\n");

        for(int i=0; i<10; i++)

        {

           printf("%d. %s: ",i+1,uni[i]);

           scanf("%f",&apt[i]);

           printf("\n\n");

        }

        system("cls");

        printf("\n\n");

        gotoxy(45,2); printf("YOU ARE ELIGIBLE FOR THE FOLLOWING
UNIVERSITIES:");

        printf("\n\t\t\t\t\t    ");

        star(50);

        printf("\n\n\n");

        for(int k=0; k<10; k++)

        {

           switch(k)
```

```
{
case 0:
   if(hsc!=0 && apt[k]!=0 && (hsc*0.4+apt[k]*0.6)>=50)
   {
      Sleep(500);
      printf(". %s",uni[k]);
      count++;
      break;
   }
case 1:
   if(hsc!=0 && apt[k]!=0 && (hsc*0.5+apt[k]*0.5)>=60)
   {
      Sleep(500);
      printf("\n\n. %s",uni[k]);
      count++;
      break;
   }
case 2:
   if(ssc!=0 && hsc!=0 && apt[k]!=0 && (ssc*0.1+hsc*0.3+apt[k]*0.6)>=50)
   {
      Sleep(500);
      printf("\n\n. %s",uni[k]);
      count++;
      break;
   }
case 3:
```

```
    if(hsc>=60 && apt[k]>=50)
    {
        Sleep(500);
        printf("\n\n. %s",uni[k]);
        count++;
        break;
    }
case 4:
    if(hsc>=50 && apt[k]>=60)
    {
        Sleep(500);
        printf("\n\n. %s",uni[k]);
        count++;
        break;
    }
case 5:
    if(hsc>=60 && apt[k]>=40)
    {
        Sleep(500);
        printf("\n\n. %s",uni[k]);
        count++;
        break;
    }
case 6:
    if(hsc!=0 && apt[k]!=0 && (hsc*0.5+apt[k]*0.5)>=50)
    {
```

```
        Sleep(500);
        printf("\n\n. %s",uni[k]);
        count++;
        break;
    }
case 7:
    if(hsc>=60 && apt[k]>=50)
    {
        Sleep(500);
        printf("\n\n. %s",uni[k]);
        count++;
        break;
    }
case 8:
    if(hsc!=0 && apt[k]!=0 && (hsc*0.67+apt[k]*0.33)>=60)
    {
        Sleep(500);
        printf("\n\n. %s",uni[k]);
        count++;
        break;
    }
case 9:
    if(hsc>=60 && apt[k]>=60)
    {
        Sleep(500);
        printf("\n\n. %s",uni[k]);
```

```
            count++;
            break;
          }
        }
    }
    if(count==0)
    {
       Sleep(500);
       printf("\n\n. Sorry! You Are Not Eligible For Any University In This List.");
    }
    getchar(); getchar();
    system("cls");
    printf("\n\n");
    gotoxy(53,15); printf("THANK YOU FOR USING THIS PROGRAM.");
    Sleep(700);
    break;
}
else if(choice=='V' || choice=='v')
{
    system("cls");
    Sleep(700);
    fflush(stdout);
    printf("\n\t");
    star(120);
    printf("\n");
    gotoxy(40,2); printf("ELIGIBILITY CRITERIA FOR EACH UNIVERSITY");
```

```
printf("\n\t");
star(120);
printf("\n\n");

Sleep(300);
fflush(stdout);
printf("1. NED University of Engineering & Technology\n\n");
printf("   - 40%% HSC + 60%% Entry Test Aggregate\n");
printf("   - Minimum overall 50%% required\n\n");

Sleep(300);
fflush(stdout);
printf("2. FAST-NUCES\n\n");
printf("   - 50%% HSC + 50%% Entry Test\n");
printf("   - Minimum overall 60%% required\n\n");

Sleep(300);
fflush(stdout);
printf("3. Dawood University of Engineering & Technology\n\n");
printf("   - 10%% SSC + 30%% HSC + 60%% Entry Test\n");
printf("   - Minimum 50%% aggregate required\n\n");

Sleep(300);
fflush(stdout);
printf("4. Sir Syed University of Engineering & Technology (SSUET)\n\n");
printf("   - Minimum 60%% in HSC\n");
```

```
printf("   - Minimum 50%% in Entry Test\n\n");

Sleep(300);
fflush(stdout);
printf("5. Indus University\n\n");
printf("   - Minimum 50%% in HSC\n");
printf("   - Minimum 60%% in Entry Test\n\n");

Sleep(300);
fflush(stdout);
printf("6. PAF-KIET (Karachi Institute of Economics & Technology)\n\n");
printf("   - Minimum 60%% in HSC\n");
printf("   - Minimum 40%% in Entry Test\n\n");

Sleep(300);
fflush(stdout);
printf("7. Bahria University\n\n");
printf("   - 50%% HSC + 50%% Entry Test\n");
printf("   - Minimum overall 50%% required\n\n");

Sleep(300);
fflush(stdout);
printf("8. Hamdard University (HIET)\n\n");
printf("   - Minimum 60%% in HSC\n");
printf("   - Minimum 50%% in Entry Test\n\n");
```

```
    Sleep(300);
    fflush(stdout);
    printf("9. Iqra University\n\n");
    printf("   - 67%% HSC + 33%% Entry Test\n");
    printf("   - Minimum 60%% aggregate required\n\n");

    Sleep(300);
    fflush(stdout);
    printf("10. Institute of Business Administration (IBA)\n\n");
    printf("    - Minimum 60%% in HSC\n");
    printf("    - Minimum 60%% in Entry Test\n\n");

    Sleep(700);
    fflush(stdout);
    printf("\n\n");
    gotoxy(50,30); printf("Press Enter key to return to main menu...");
    getchar(); getchar();
    system("cls");
}
else if(choice=='E' || choice=='e')
{
    Sleep(700);
    fflush(stdout);
    system("cls");
    printf("\n\n");
    gotoxy(53,15); printf("THANK YOU FOR USING THIS PROGRAM.");
```

```
            break;
        }
        else
        {
            Sleep(700);
            fflush(stdout);
            system("cls");
            gotoxy(55,15); printf("ERROR! INVALID INPUT GIVEN.");
            Sleep(900);
            gotoxy(60,17); printf("PLEASE, TRY AGAIN.");
            getchar(); getchar();
            system ("cls");
        }
    }
    return 0;
}
```

5.1 Sample Code Run:

5.1.1 Criteria and Output screen:

```
      ********************************************************************************************************************************
                                        ELIGIBILITY CRITERIA FOR EACH UNIVERSITY
      ********************************************************************************************************************************

. NED University of Engineering & Technology

  - 40% HSC + 60% Entry Test Aggregate
  - Minimum overall 50% required

. FAST-NUCES

  - 50% HSC + 50% Entry Test
  - Minimum overall 60% required

. Dawood University of Engineering & Technology

  - 10% SSC + 30% HSC + 60% Entry Test
  - Minimum 50% aggregate required

. Sir Syed University of Engineering & Technology (SSUET)

  - Minimum 60% in HSC
  - Minimum 50% in Entry Test

. Indus University

  - Minimum 50% in HSC
  - Minimum 60% in Entry Test

. PAF-KIET (Karachi Institute of Economics & Technology)

  - Minimum 60% in HSC
  - Minimum 40% in Entry Test

. Bahria University

  - 50% HSC + 50% Entry Test
  - Minimum overall 50% required

. Hamdard University (HIET)

  - Minimum 60% in HSC
  - Minimum 50% in Entry Test

. Iqra University

  - 67% HSC + 33% Entry Test                    Press Enter key to return to main menu...
  - Minimum 60% aggregate required

0. Institute of Business Administration (IBA)

   - Minimum 60% in HSC
   - Minimum 60% in Entry Test
```

```
                                          YOU ARE ELIGIBLE FOR THE FOLLOWING UNIVERSITIES:
                                         ************************************************


. NED University of Engineering & Technologyy

. FAST-NUCES

. Indus University

. PAF-KIET (Karachi Institute of Economics & Technology)

. Bahria University

. Hamdard University Faculty of Engineering Sciences & Technology (HIET)

. Iqra University

. Institute of Business Administration (CS, Data Science & tech programs)
```

6. Code Explanation

• `star()` Function: Used for formatting purposes to create visual breaks for formatting in the console.
• `gotoxy()` Function: Helps set the cursor position on the console for organized and structured display of text.
• Eligibility Calculation Logic: Implemented using if-else conditions, applying different weighted criteria for each university.
• Error Handling: If the user provides invalid input, the program catches the error and prompts the user to re-enter the correct data.

7. Results

The program performs eligibility checks based on predefined criteria for each university. Sample outputs:
• NED University of Engineering & Technology: Eligible (based on 40% HSC and 60% Aptitude Test).
• FAST-NUCES: Not eligible (failed to meet the 60% required aggregate).
The program returns instant feedback for the user, informing them of their eligibility status.

8. Assumptions

• The SSC, HSC, and Aptitude Test scores provided are valid and accurate.
• The program uses predefined criteria for the top 10 universities, which can be updated as needed.
• The program assumes the user inputs data correctly, and no additional information (like extracurricular activities) is considered for eligibility at this stage.

9. Future Work

1. AI Integration: Future versions could involve integrating Machine Learning or Artificial Intelligence for smarter eligibility prediction based on various student data points beyond test scores, such as extracurricular activities, personal essays, etc.

2. GUI Version: Moving from a command-line interface to a Graphical User Interface (GUI) would improve accessibility and user-friendliness.
3. Web-Based Version: Developing a web-based version would make the system more accessible to a larger audience.
4. Mobile Application: A mobile app could provide students with a tool to check eligibility on the go.

10. Conclusion

The University Admission Eligibility Calculator is a useful tool that helps students determine their eligibility for top universities in Karachi by evaluating their academic scores. By automating the process, it provides quick, accurate, and transparent results, improving the overall efficiency of the university admission process. Future improvements can include integrating AI models and expanding the system to include more variables for eligibility assessment.