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PROJECT OF DATA STRUCTURE USING C

PROJECT TITLE - STONE PAPER SCISSOR

FOR THE

BACHELOUR'S DEGREE IN COMPUTER APPLICATIONS

OF CHANDIGARH UNIVERSITY, GHARAUN, MOHALI

SUBMITTED TO INTERNAL GUIDE

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Semester: 2nd semester **Date of Performance: 20-04-2025**
Subject Name: Data structure using c **Subject Code:24CAP-152**
Submitted To – Ms- Monika Choudhary

1. **Aim/Overview of the practical: Make a game (stone paper scissor) in data structure using c language. In which a player who chooses rock will win over another player who selects scissors but lose to the player who selects paper; a player who selects paper will lose to the player who selects scissors but wins over rock.**

2. **Objective: Rock is represented by a closed fist. Paper is represented by an open hand. Scissors is represented by the index and middle fingers extended. The objective is to select a gesture which defeats that of the opponent.**

3. **Code for experiment/practical:**

```
#include <math.h>

#include <stdio.h>

#include <stdlib.h>

#include <time.h>

int game(char you, char computer)
{
   if (you == computer)
      return -1;

   if (you == 's' && computer == 'p')
      return 0;


      else if (you == 'p' && computer == 'x')
      return 1;

   if (you == 's' && computer == 'x')
      return 1;

   else if (you == 'x' && computer == 's')
      return 0;

   if (you == 'p' && computer == 'x')
      return 0;

   else if (you == 'x' && computer == 'p')
      return 1;
}

int main()
```

```
{
   int n;

   char you, computer, result;
   srand(time(NULL));

   n = rand() % 100;

   if (n < 33)
      computer = 's';

   else if (n > 33 && n < 66)
      computer = 'p';
   else
      computer = 'x';

   printf("\n\n\n\n\t\t\t\tEnter s for STONE, p for PAPER and x for SCISSOR\n\t\t\t\t\t\t\t");

   scanf("%c", &you);

   result = game(you, computer);

   if (result == -1) {
      printf("\n\n\t\t\tGame Draw!\n");
   }
   else if (result == 1) {
      printf("\n\n\t\t\tWow! You have won the game!\n");
   }
   else {
      printf("\n\n\t\t\tOho! You have lost the game!\n");
   }
      printf("\t\t\tYou choose : %c and Computer choose : %c\n",you, computer);

   return 0;
}
```

4. Result/Output/Writing Summary:

```
                Enter s for STONE, p for PAPER and x for SCISSOR
                            s


                Wow! You have won the game!
                You choose : s and Computer choose : x


=== Code Execution Successful ===
```

```
                Enter s for STONE, p for PAPER and x for SCISSOR
                            x


                Oho! You have lost the game!
                You choose : x and Computer choose : s


=== Code Execution Successful ===
```

```
                Enter s for STONE, p for PAPER and x for SCISSOR
                            s


                Game Draw!
                You choose : s and Computer choose : s


== Code Execution Successful ===
```

5.Learning outcomes (What I have learnt):

1. Probability: Understanding the probability of winning a game.

2.Problem-solving: Planning a strategy to solve problems.

3.Following rules: Understanding the game algorithm and following rules.

4.Personal biases: Realizing that each outcome is not equally likely because players bring their own biases to the game.

5. Understanding the logic of gameplay: Learning how to work out the logic of the game.

Evaluation Grid:

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.	Demonstration and Performance (Pre Lab Quiz)		5
2.	Worksheet		10
3.	Post Lab Quiz		5