

Task 3: Programming Problems by implementing necessary control statements.

a) Raj and Raju are thick friends. They decide to play a game. Raju is an excellent guy with good communication skills. Raj decided to test his friend Raju with few tough tasks. Raj will utter some sentence told by his friend. The task is replace all the words that has been uttered by Raj in the sentence with a special character?

Aim: To solve programming problems by implementing necessary control statements algorithm:

Step 1: Start

Step 2: Take integer variable x .

Step 3: Divide the variable x with $(x-1 \text{ to } 2)$

Step 4: Print result.

Program

```
#include <stdio.h>
```

```
#include <string.h>
```

```
int main() {
```

```
char
```

Output:
 enter a sentence: vellore university is in chennai
 enter a character to replace x: u
 modified sentence: vellore #niversity is in chennai.

This program illustrates how to replace a character in a string. It prompts the user to enter a sentence and a character. The character 'x' is used as a placeholder for the character to be replaced. The program then replaces all occurrences of 'x' with the entered character and displays the modified sentence.

To solve programming problems of manipulating strings, the following algorithm is used:
 1. Read the string.
 2. Read the character to be replaced.
 3. Replace all occurrences of 'x' with the character.

Program

#include <stdio.h>
 #include <string.h>
 int main()

return 0


```

Sentence[100];
char replace_char;
printf("Enter a sentence:");
fgets(Sentence, 100, stdin);
printf("Enter a character to replace:");
scanf("%c", &replace_char);
for (int i=0; i<strlen(Sentence); i++) {
    if (Sentence[i] == replace_char)
    {
        Sentence[i] = '#';
    }
}
printf("Modified Sentence: %s", Sentence);
return 0;
}

```

- 6) write a program that generates a random number and asks the user to guess what the number is. If the user's guess is higher than the random number, If the user's guess is lower than the random number, The program should use a loop that repeats until the user correctly guesses?

Algorithm:

1. Generate a random number between a specified range.
2. Ask the user to enter a guess for the random number.
3. Check if the guess is equal to the random number. If it is, exit the loop and print a message.
4. If the guess is higher than the random number, print a message saying "Too high, try again".
5. If the guess is lower than the random number, print a message saying "Too low, try again".
6. Repeat steps 3-5 until the user correctly guesses the number.
7. End the program.

Program

```
#include <stdio.h>
#include <stdlib.h>
#include <time.h>
int main()
{
    srand(time(0));
    int random Number = rand() % 100 + 1;
```


Output:

Guess the number between 1 and 100: 80 Too low, try again

Guess the number between 1 and 100: 90 Too high, try again

Guess the number between 1 and 100: 81 Too low, try again

Guess the number between 1 and 100: 82 Too low, try again

Guess the number between 1 and 100: 83

Congratulations! You guessed the number 83.

The guess is lower than the random number, hence
a message saying "Too low, try again".
Repeat steps 3-5 until the user correctly
guesses the number.

Algorithm

1. Generate a random number

2. Ask the user to guess the number

3. Compare the user's guess with the random number

4. If the guess is correct, display a message

5. If the guess is incorrect, provide feedback

6. Repeat steps 2-5 until the user guesses the number correctly

```

int guess;
do {
    printf("Guess the number between 1 and 100:");
    scanf("%d", &guess);
    if (guess > random number) {
        printf("Too high, try again.\n");
    }
    else if (guess < random Number) {
        printf("Too low, try again.\n");
    }
} while (guess != random Number);
printf("Congratulations! You guessed the number %d.\n",
random Number); return 0;
}

```

Result:- Thus, the program is written and executed successfully.

VPL TECH - CSE	
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PERFORMANCE (5)	8
RESULT AND ANALYSIS (2)	7
VIVA VOCE (3)	7
RECORD (4)	
TOTAL (15)	14
SIGN WITH DATE	