

FAIZAN CHOUDHARY

20BCS021

PROGRAMMING LAB

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**CODE:** (code pasted in this format for readability)

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

char string[100]; //temp string
// char *s=(char *)malloc(100*sizeof(char));
char s[100];      //main string input
char b[100];      //secondary input

int strlen (char *s)
{
    int count=0;
    for (int i=0; s[i]!='\0'; i++)
        count++;
    return count;
}

char * strrev (char *s)
{
    int k=strlen(s);
    for (int i=0; s[i]!='\0'; i++)
        string[i]=s[k-1-i];
    return string;
}

char * strcpy (char *s,char *b)
{
    // int k = strlen (b);
    // char *s=(char *)realloc(s, (k+1) * sizeof(char));
    char *temp=s;
    while (*b!='\0')
    {
        *s=*b;
        s++;
        b++;
    }
    *s='\0';
    return temp;
}

void strcmp (char *a, char *b)
```

```

{
    while (*a)
    {
        if (*a!=*b)
        {
            printf("\nThe two strings are not equal!\n");
            return;
        }
        a++;
        b++;
    }
    printf("\nThe two strings are equal!\n");
}

char *strcat (char *a, char *b)
{
    int k=strlen(a);
    int l=strlen(b);
    for (int i=0; i<k; i++)
        string[i]=a[i];
    for (int i=0; i<l; i++)
        string[k+i]=b[i];
    string[strlen(string)]='\0';
    return string;
}

void palindrome (char *s)
{
    int len=strlen(s), j, flag=1;
    for (int i=0; i<len-1, j<len/2; i++, j--)
    {
        if (s[i]!=s[j])
        {
            flag=0;
            break;
        }
    }
    if (!flag)
        printf("\nThe given string is not a palindrome.\n");
    else
        printf("\nThe given string is a palindrome.\n");
}

int substr(char *a, char *b)
{
    int k=strlen(a);    //substring
    int l=strlen(b);    //main string
    for (int i=0; i<=(l-k); i++)    //to traverse in larger string upto the length of
smaller string
    {
        int j;
        for (j=0; j<k; j++)
            if (b[i+j] != a[j])
                break;
    }
}

```

```

        if (j==k)
            return i;
    }
    return -1;
}

int main()
{
    int ch;
    printf("\nFAIZAN CHOUDHARY\n20BCS021\n\n");
    A:
    printf("Enter the main string: ");
    scanf("%[^\n]", &s);
    while (1)
    {
        B:
        printf("\n\nMENU\n1. strlen\n2. strrev\n3. strcpy\n4. strcmp\n5. strcat\n6. Check
for palindrome.\n7. Search for substring.\n8. Enter new main string.\n9. Exit.\n");
        scanf("%d",&ch);
        switch(ch)
        {
            case 1: printf("\nLength of the string is: %d\n", strlen(s));
                    break;
            case 2: printf("\nString after reversing: %s\n", strrev(s));
                    break;
            case 3: printf("\nEnter the string to be copied: ");
                    getchar();
                    scanf("%[^\n]", &b);
                    printf("\nMain String: %s\nSecondary String: %s", s,b);
                    printf("\nAfter Copying, Main String: %s\n",strcpy(s,b));
                    break;
            case 4: printf("\nEnter the second string to be compared: ");
                    getchar();
                    scanf("%[^\n]", &b);
                    strcmp(s,b);
                    break;
            case 5: printf("\nEnter the second string to be concatenated: ");
                    getchar();
                    scanf("%[^\n]", &b);
                    printf("\nMain String: %s\nSecondary String: %s", s,b);
                    printf("\nAfter concatenation: %s",strcat(s,b));
                    break;
            case 6: palindrome(s);
                    break;
            case 7: printf("\nEnter the substring to be checked for: ");
                    getchar();
                    scanf("%[^\n]", &b);
                    printf("\nMain String: %s\nSubstring: %s", s,b);
                    int c=substr(b,s);
                    if (c==-1)
                        printf("\nSubstring is not present!\n");
                    else
                        printf("\nSubstring is present at position: %d\n", c);
                    break;

```

```

        case 8: goto A;
        case 9: exit(0);
        default: printf("\nWrong choice! Enter again...\n");
                 goto B;

    }
}
return 0;
}

```

## OUTPUT:

```

FAIZAN CHOUDHARY
20BCS021

```

```

Enter the main string: Faizan

```

```

MENU

```

1. strlen
  2. strrev
  3. strcpy
  4. strcmp
  5. strcat
  6. Check for palindrome.
  7. Search for substring.
  8. Enter new main string.
  9. Exit.
- 1

```

Length of the string is: 6

```

```

MENU

```

1. strlen
  2. strrev
  3. strcpy
  4. strcmp
  5. strcat
  6. Check for palindrome.
  7. Search for substring.
  8. Enter new main string.
  9. Exit.
- 2

```

String after reversing: naziaF

```

MENU

1. strlen
  2. strrev
  3. strcpy
  4. strcmp
  5. strcat
  6. Check for palindrome.
  7. Search for substring.
  8. Enter new main string.
  9. Exit.
- 3

Enter the string to be copied: Jamia Millia Islamia

Main String: Faizan

Secondary String: Jamia Millia Islamia

After Copying, Main String: Jamia Millia Islamia

MENU

1. strlen
  2. strrev
  3. strcpy
  4. strcmp
  5. strcat
  6. Check for palindrome.
  7. Search for substring.
  8. Enter new main string.
  9. Exit.
- 4

Enter the second string to be compared: Jamia Millia Islamia

The two strings are equal!

MENU

1. strlen
  2. strrev
  3. strcpy
  4. strcmp
  5. strcat
  6. Check for palindrome.
  7. Search for substring.
  8. Enter new main string.
  9. Exit.
- 5

Enter the second string to be concatenated: , New Delhi

Main String: Jamia Millia Islamia

Secondary String: , New Delhi

After concatenation: Jamia Millia Islamia, New Delhi

MENU

1. strlen
  2. strrev
  3. strcpy
  4. strcmp
  5. strcat
  6. Check for palindrome.
  7. Search for substring.
  8. Enter new main string.
  9. Exit.
- 3

Enter the string to be copied: racecar

Main String: Jamia Millia Islamia

Secondary String: racecar

After Copying, Main String: racecar

MENU

1. strlen
  2. strrev
  3. strcpy
  4. strcmp
  5. strcat
  6. Check for palindrome.
  7. Search for substring.
  8. Enter new main string.
  9. Exit.
- 6

The given string is a palindrome.

MENU

1. strlen
  2. strrev
  3. strcpy
  4. strcmp
  5. strcat
  6. Check for palindrome.
  7. Search for substring.
  8. Enter new main string.
  9. Exit.
- 7

Enter the substring to be checked for: car

Main String: racecar

Substring: car

Substring is present at position: 4

MENU

1. strlen
  2. strrev
  3. strcpy
  4. strcmp
  5. strcat
  6. Check for palindrome.
  7. Search for substring.
  8. Enter new main string.
  9. Exit.
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