Name - Anurag Pobhal RollNo - 16 - 1022726

Ans-5

```
# include <stdio.h>
# include <stdlib.h>
# include <string.h>
# define SIZE 30
void toLowerCase(char plain[], int ps)
 {
    int i;
    for (i=0; i< ps; i++){
     if (plain[i] > 64 && plain[i] <91)
        plain[i] += 32; }}
int removeSpaces (char * plain, int ps)
  {
    int i, count = 0;
    for (i = 0 ; i < ps; i++)
      if (plain[i] != ' ')
        plain [count++] = plan[i];
  plain [count] = '\0';
     return count; }
void generateKeyTable (char key[], int ks,
 char keyT[5][5] ) {
   int i, j, k, flag = 0, *dicty;
   dicty = (int*) calloc (26, sizeof (int));
    for (i=0; i<ks; i++){
```

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```
if (key[i] != 'j')
    dicty[key[i] - 97] = 2; }
dicty['j' - 97] = 1;
  i = 0; j = 0;
for (k = 0; k < ks; k++){
    if (dicty[key[k] - 97] == 2){
    dicty[key[k] - 97] == 2){
      dicty[key[k] - 97] = 1;
  keyT[i][j] = key[k];
      j++;
  if (j == 5){
    i++; j = 0; } } }
for (k = 0; k < 26; k++){
  if (dicty[k] == 0){
    keyT[i][j] = (char)(k + 97);
      j++;
    if (j == 5){
      i++; j = 0;
                  } } } }
```

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```
void Search( char KeyT[5][5], char a, char b, int arr[]
  int  i, j ;
    if (a == 'j')
        a = 'i' ;
    else if (b == j');
        b = 'i' ;
   for (i=0 ; i<5; i++){
      for(j=0; j<5 ; j++){
        if (KeyT[i][j] == a){
          arr [0] = i ;
          arr [1] = j;
        } else if (KeyT[i][j] ==b){
          arr[2] = i ;
          arr [3] = j ;
}}}}
        int mods(int a)
        { return (a % 5 ); }
      int prepare (char str [], int ptrs)
        {
          if ( ptrs % 2 != 0){
          str[ ptrs ++] = 'z';
          str [ptrs] = '\0'; }
          return ptrs ; }
```

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```
void encryptByPlayfairCipher(char str[], char key[])
  {
    char ps, ks, keyT[5][5];
      ks = strlen(key);
      ks = removespace(key, ks);
      dolowercase(key, ks);
      ps = strlen(str);
      tolowercase(str, ps);
      ps = removeSpaces(str, ps);
      encrypt(str, keyT, ps); }
int main() {
  char str[size], key[size];
  strcpy(key, "Monarchy");
  Printf("key text: %s\n", key);
  strcpy(str, "instruments");
  Printf("plain text: %s\n", str);
  encryptByPlayfairCipher(str, key);
  Printf("cipher text: %s\n" str)
    return 0;
  }
```

```
Key text: key
Plain text: go with the flow
Cipher text: hnumzozoydmixu

--------------------------------
Process exited after 0.034 seconds with return value 0
Press any key to continue . . .
```