



LAB 7

Subject: programming fundamental

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Q1:

```
//Q1
#include <stdio.h>

int main()
{
    int number, palindromeNumber = 0;
    printf("Please Enter the Number: ");
    scanf("%d",&number);
    int tempNum = number;
    while (number != 0)
    {
        int remainder = number % 10;
        palindromeNumber = palindromeNumber * 10 + remainder;
        number /= 10;
    }
    if (tempNum == palindromeNumber)
        printf("%d is the Palindrome Number", tempNum);
    else
        printf("%d is Not Palindrome Number", tempNum);
}
```

Q2:

```
#include <stdio.h>

int main()
{
    int row;
    printf("Please Enter the Number of Row to Print: ");
    scanf("%d",&row);
    int midSpace = row/2 + 1;
    printf("%d\n",midSpace);
    for(int i=1; i<= row; i++)
    {
        for (int j=1; j<=row; j++ )
        {
            if(j == midSpace || j==row - midSpace + 1)
                printf("*");
            else
                printf(" ");
        }
        if(i<=row/2)
            midSpace--;
        else
            midSpace++;
        printf("\n");
    }
}
```

Q3 :

```
#include <stdio.h>

int main()
{
    int row;
    printf("Please Enter the Number of Row to Print: ");
    scanf("%d",&row);
    for(int i=1; i<=row; i++)
    {
        for(int j=1; j<=row; j++)
        {
            if(i==j || i+j == row+1)
                printf("*");
            else
                printf(" ");
        }
        printf("\n");
    }
}
```

Q4:

```
#include <stdio.h>
//Q4
int main()
{
    int row;
    printf("Please Enter the Number of Row to Print: ");
    scanf("%d",&row);
    for(int i=1; i<=row; i++)
    {
        for(int j=1; j<=row; j++)
        {
            if(i%2==0 && j%2==0)
                printf("0");
            else
                printf("*");
        }
        printf("\n");
    }
}
```

Q5:

```
#include <stdio.h>

int main()
{
    int row;
    printf("Please Enter the Number of Row to Print: ");
    scanf("%d",&row);
    for(int i=1; i<=row; i++)
    {
        for(int j=1; j<=row - i; j++)
        {
            printf(" ");
        }
        for(int j=1; j<=i; j++)
        {
            printf("%c",(char)(j+64));
        }
        for(int j=i-1; j>=1; j--)
        {
            printf("%c",(char)(j+64));
        }
        printf("\n");
    }
}
```

Q6:

```
#include <stdio.h>

int main()
{
    int number;
    printf("Please Enter the Number: ");
    scanf("%d",&number);
    int count = 0;
    int tempNum = number;
    for(int digit=0; digit<=9; digit++)
    {
        while (number != 0)
        {
            int rem = number % 10;
            if(digit==rem)
                count++;
            number /= 10;
        }
    }
}
```

```

    }
    if(count != 0)
        printf("%d = %d times.\n",digit,count);
    number = tempNum;
    count = 0;
}
}

```

Q7:

```

#include <stdio.h>

int main()
{
    int row;
    printf("Please Enter the row numbers: ");
    scanf("%d",&row);
    for(int i=1; i<=row; i++)
    {
        int toPrint = i;
        for(int j=1; j<=4; j++)
        {
            printf("%d ", toPrint);
            toPrint *= 10;
        }
        printf("\n");
    }
}

```

Q8:

```

#include <stdio.h>
#include <conio.h>

int main()
{
    int number, result = 0, first = 1;
    char sign = 1, ch = 1;
    while(ch != '=' && ch != '\r')
    {
        ch = getch();
        if(ch >= '0' && ch <= '9')
        {
            number = ch - '0';

```

```

    }
    else if(first == 1)
    {
        sign = ch;
        result = number;
        number = 0;
        first = 0;
    }
    else
    {
        if(sign == '+')
        {
            result += number;
            number = 0;
            sign = ch;
        }
        else if(sign == '-')
        {
            result -= number;
            number = 0;
            sign = ch;
        }
        else if(sign == '*')
        {
            result *= number;
            number = 0;
            sign = ch;
        }
        else if(sign == '/')
        {
            result /= number;
            number = 0;
            sign = ch;
        }
    }
}
printf(" %d",result);
}

```

Q9:

```

#include <stdio.h>
int factorial(int n)
{
    int fact = 1;
    for(int i=1; i<=n; i++)
    {

```

```

        fact *= i;
    }
    return fact;
}
int main()
{
    int row;
    printf("Please Enter the row numbers: ");
    scanf("%d",&row);
    for(int i=0; i<=row; i++)
    {
        for(int j=0; j<=row-i; j++)
            printf(" ");
        for(int j=0; j<=i; j++)
            printf("%d ", factorial(i)/(factorial(j)*factorial(i-j)));

        printf("\n");
    }
}

```

Q10:

```

#include <stdio.h>

int main()
{
    int row;
    printf("Please Enter the row numbers: ");
    scanf("%d",&row);
    char ch = 'A';
    for(int i=row; i>=1; i--)
    {
        for(int j=1; j<=i; j++)
            printf("%c ",ch++);
        for(int j=1; j<=2*(row-i); j++)
            printf(" ");
        for(int j=1; j<=i; j++)
            printf("%c ",--ch);
        ch = 'A';
        printf("\n");
    }
}

```