



KIET Group of Institutions, Ghaziabad

Department of Computer Applications

(An ISO – 9001: 2015 Certified & 'A' Grade accredited Institution by NAAC)

Problem Solving Using C Lab

KCA 151: Session 2020-21

Experiment – No-6

Objective: *MENU DRIVEN OF FACT,FIB,ACKERANK.*

| Scheduled Date | Compiled Date | Submission Date |
|----------------|---------------|-----------------|
| 6-JAN-2021 | 10-JAN-2021 | 11-JAN-2021 |

Program : MENU DRIVEN PROGRAM OF FACTORIAL,FIBONACCI,ACKERMAN.

```
#include<stdio.h>
int fact(int); // function created for factorial
int fibn(int); // function created for fibonacci
int ackerman(int,int); // function created for ackerman
void main()
{
    int number1,number2,choice,Continue;
    do
    {
        printf("\nEnter the values : ");
        scanf("%d",&number1);
        scanf("%d",&number2);
        printf("Enter your choice :\n1.factorial.\n2.fibonacci.\n3.ackerman.\n");
        scanf("%d",&choice);
        switch(choice)
        {
            case 1:printf("result = %d",fact(number1));break;
            case 2:printf("result = %d",fibn(number1));break;
            case 3:printf("result = %d",ackerman(number1,number2));break;
            default:printf("\nchoice is not available");
        }
        printf("\nEnter 1 to continue ");
        scanf("%d",&Continue);
    } while(Continue==1);
    getch();
}

int fact(int number1)
{
    int result=0;
    if(number1==0)
        return 1;
    else
        result = number1*fact(number1-1);
}
```



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```
    return result;
}
int fibn(int number1)
{
    int result=0;
    if(number1<=2)
        return 1;
    else
    {
        result = fibn(number1-1)+fibn(number1-2);
        return result;
    }
}
int ackerman (int number1,int number2)
{
    if(number1==0)
        return (number2+1);
    else
        if(number2==0)
            return ackerman(number1-1,1);
    else
        return ackerman(number1-1,ackerman(number1,number2-1));
}
```

OUTPUT:



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```
enter the values : 5
0
enter your choice :
1.factorial.
2.fibonacci.
3.ackerman.
1
result = 120
enter 1 to continue 1

enter the values : 5
1
enter your choice :
1.factorial.
2.fibonacci.
3.ackerman.
2
result = 5
enter 1 to continue 1

enter the values : 0
5
enter your choice :
1.factorial.
2.fibonacci.
3.ackerman.
3
result = 6
enter 1 to continue
```

ALGORITHM:

1. START.
2. CREATE FUNCTION OF FACTORIAL() , FIBONACCI() , ACKERMAN().
3. INPUT 2 VALUES FOR OPERATION.
4. GIVE OPTION MENU FOR THE OPERATION.
 1. FACT().
 2. FIBN().
 3. ACKERMAN().
5. SCAN THE VALUE TO OPT OPTION.
6. USE SWITCH TO CALL AND GET THE RESULT FROM OPTED FUNCTION.
7. USE ANOTHER VALUE TO CONTINUE THE PROGRAM.
8. CREATE FUNCTION OF FIBONACCI

```
int fact(int number1)
{
    int result=0;
    if(number1==0)
        return 1;
    else
        result = number1*fact(number1-1);
```



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```
return result;
```

```
}
```

9. CREATE FUNCTION OF FACTORIAL

```
int fibn(int number1)
```

```
{
```

```
int result=0;
```

```
if(number1<=2)
```

```
return 1;
```

```
else
```

```
{
```

```
result = fibn(number1-1)+fibn(number1-2);
```

```
return result;
```

```
}
```

```
}
```

10. CREATE FUNCTION OF ACKERMAN

```
int ackerman (int number1,int number2)
```

```
{
```

```
if(number1==0)
```

```
return (number2+1);
```

```
else
```

```
if(number2==0)
```

```
return ackerman(number1-1,1);
```

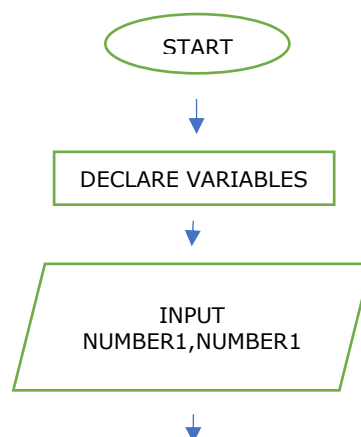
```
else
```

```
return ackerman(number1-1,ackerman(number1,number2-1));
```

```
}
```

11. END.

FLOWCHART:





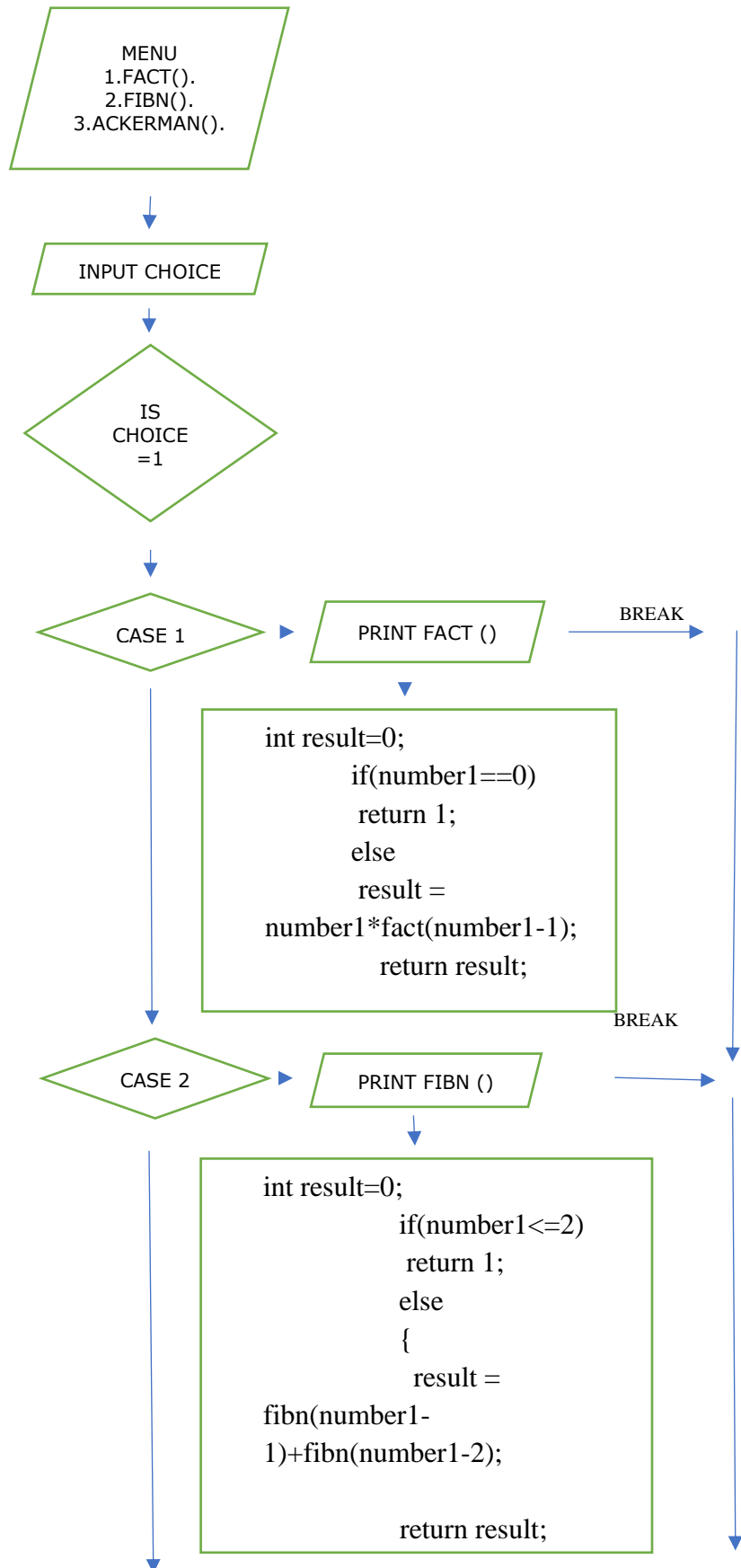
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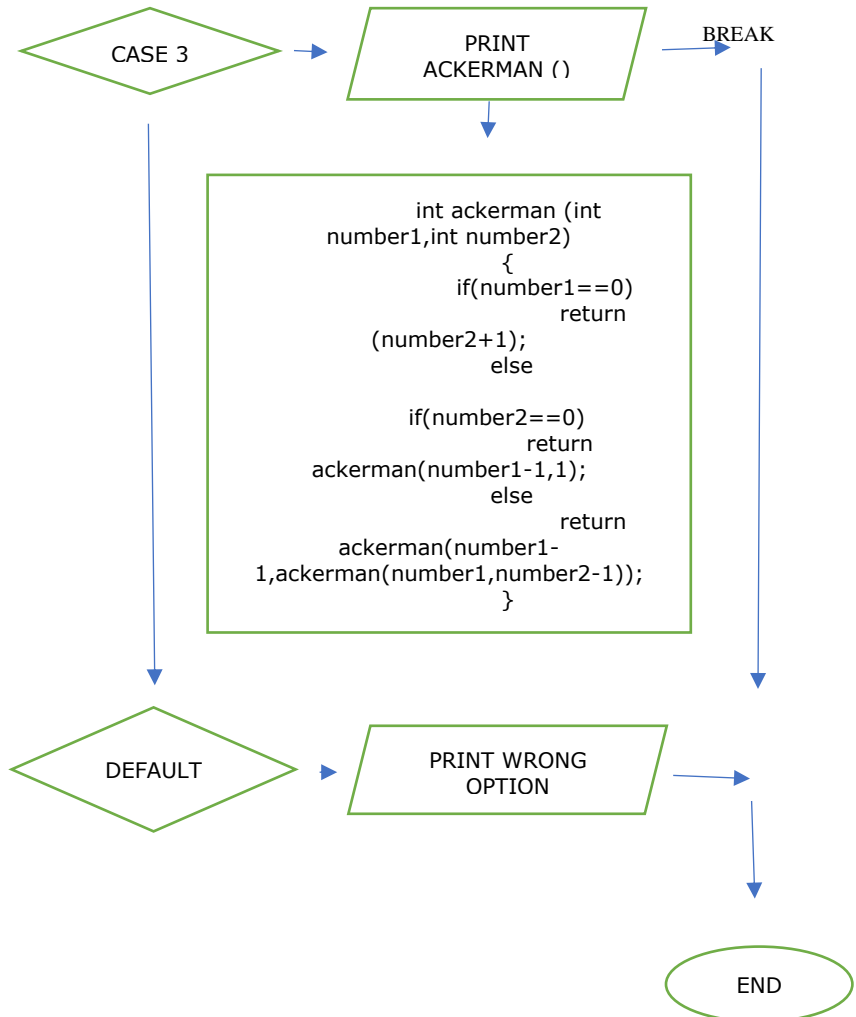
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