# DAY 20

# 1. Generate a Random Number

#include <stdio.h>  
#include <stdlib.h>  
#include <time.h>  
  
int main() {  
 srand(time(0));  
 int num = rand();  
 printf("Random number: %d\n", num);  
 return 0;  
}

# 2. Basic Calculator using Switch-Case

#include <stdio.h>  
  
int main() {  
 char op;  
 double a, b;  
 printf("Enter operator (+, -, \*, /): ");  
 scanf(" %c", &op);  
 printf("Enter two operands: ");  
 scanf("%lf %lf", &a, &b);  
  
 switch(op) {  
 case '+': printf("Result = %.2lf\n", a + b); break;  
 case '-': printf("Result = %.2lf\n", a - b); break;  
 case '\*': printf("Result = %.2lf\n", a \* b); break;  
 case '/':   
 if (b != 0)  
 printf("Result = %.2lf\n", a / b);  
 else  
 printf("Division by zero error!\n");  
 break;  
 default: printf("Invalid operator\n");  
 }  
 return 0;  
}

# 3. Convert Decimal to Octal

#include <stdio.h>  
  
int main() {  
 int num;  
 printf("Enter a decimal number: ");  
 scanf("%d", &num);  
 printf("Octal: %o\n", num);  
 return 0;  
}

# 4. Convert Decimal to Hexadecimal

#include <stdio.h>  
  
int main() {  
 int num;  
 printf("Enter a decimal number: ");  
 scanf("%d", &num);  
 printf("Hexadecimal: %X\n", num);  
 return 0;  
}

# 5. ASCII Value of a Character

#include <stdio.h>  
  
int main() {  
 char c;  
 printf("Enter a character: ");  
 scanf(" %c", &c);  
 printf("ASCII value of %c = %d\n", c, c);  
 return 0;  
}

# 6. Print ASCII Table

#include <stdio.h>  
  
int main() {  
 for (int i = 0; i <= 127; i++) {  
 printf("%d = %c\n", i, i);  
 }  
 return 0;  
}

# 7. Check Leap Year

#include <stdio.h>  
  
int main() {  
 int year;  
 printf("Enter a year: ");  
 scanf("%d", &year);  
 if ((year % 4 == 0 && year % 100 != 0) || (year % 400 == 0))  
 printf("%d is a leap year\n", year);  
 else  
 printf("%d is not a leap year\n", year);  
 return 0;  
}

# 8. Digital Clock (hh:mm:ss format)

#include <stdio.h>  
#include <unistd.h>  
  
int main() {  
 int h = 0, m = 0, s = 0;  
 while (1) {  
 printf("%02d:%02d:%02d\r", h, m, s);  
 fflush(stdout);  
 sleep(1);  
 s++;  
 if (s == 60) { s = 0; m++; }  
 if (m == 60) { m = 0; h++; }  
 if (h == 24) h = 0;  
 }  
 return 0;  
}

# 9. FizzBuzz from 1 to 100

#include <stdio.h>  
  
int main() {  
 for (int i = 1; i <= 100; i++) {  
 if (i % 3 == 0 && i % 5 == 0)  
 printf("FizzBuzz\n");  
 else if (i % 3 == 0)  
 printf("Fizz\n");  
 else if (i % 5 == 0)  
 printf("Buzz\n");  
 else  
 printf("%d\n", i);  
 }  
 return 0;  
}

# 10. Display Current Date and Time

#include <stdio.h>  
#include <time.h>  
  
int main() {  
 time\_t t;  
 time(&t);  
 printf("Current date and time: %s", ctime(&t));  
 return 0;  
}