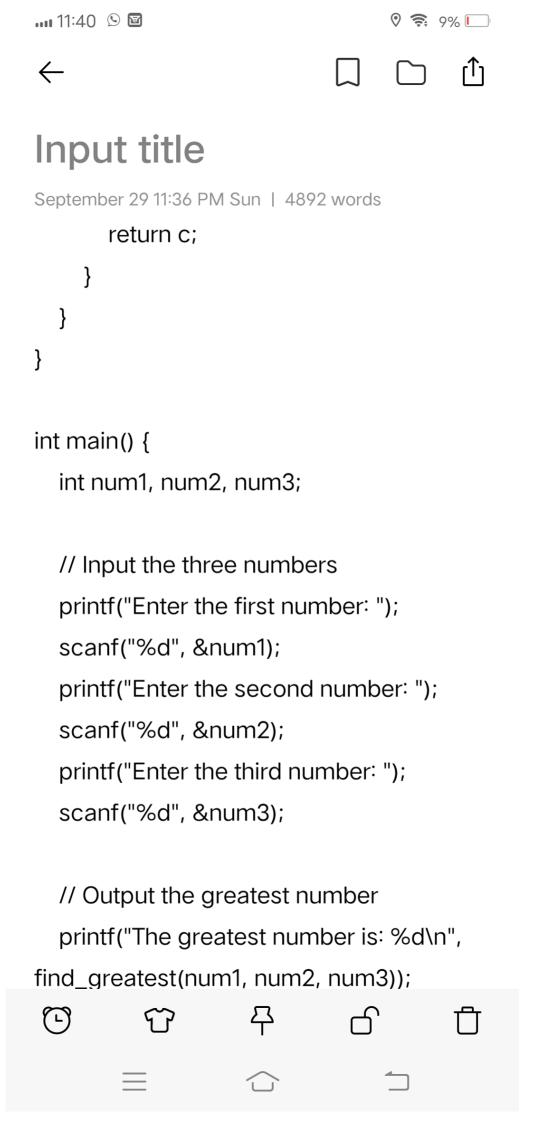
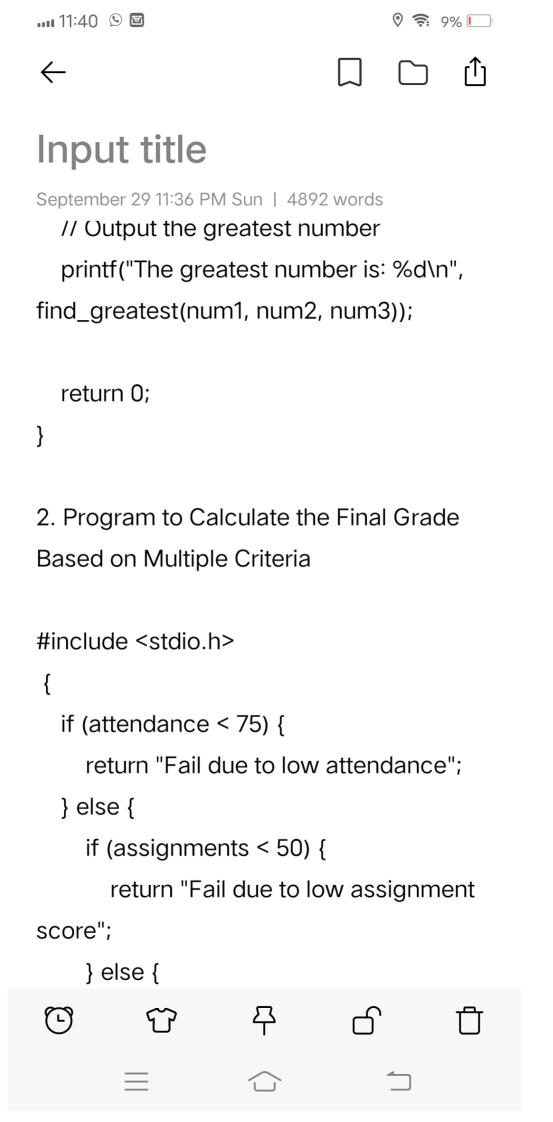


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#include <stdio.h>

```
int find_greatest(int a, int b, int c) {
    if (a >= b) {
        if (a >= c) {
            return a;
        } else {
            return c;
        }
    } else {
        if (b >= c) {
            return b;
        } else {
            return c;
        }
    }
```





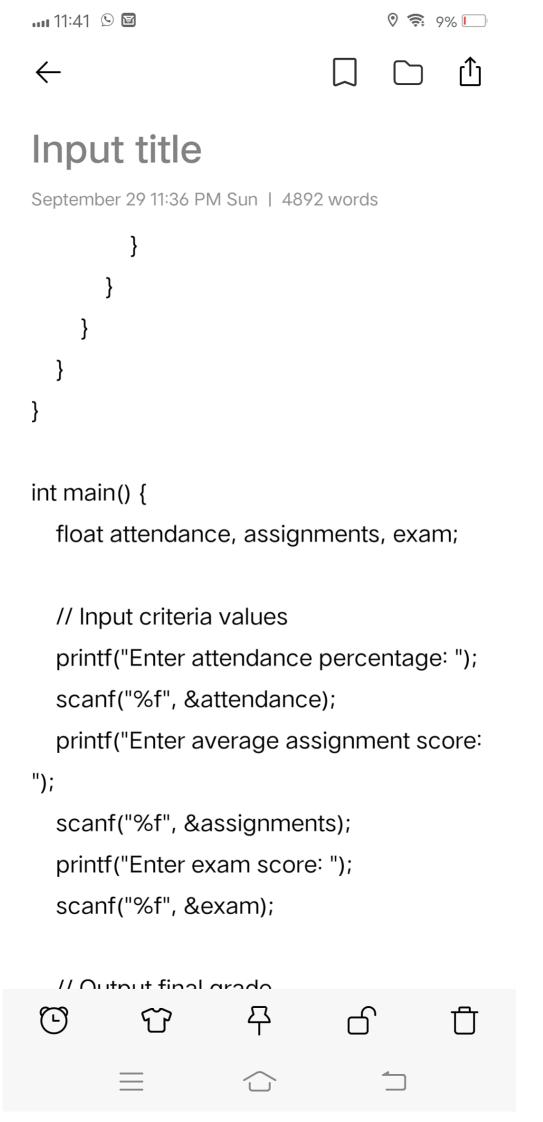


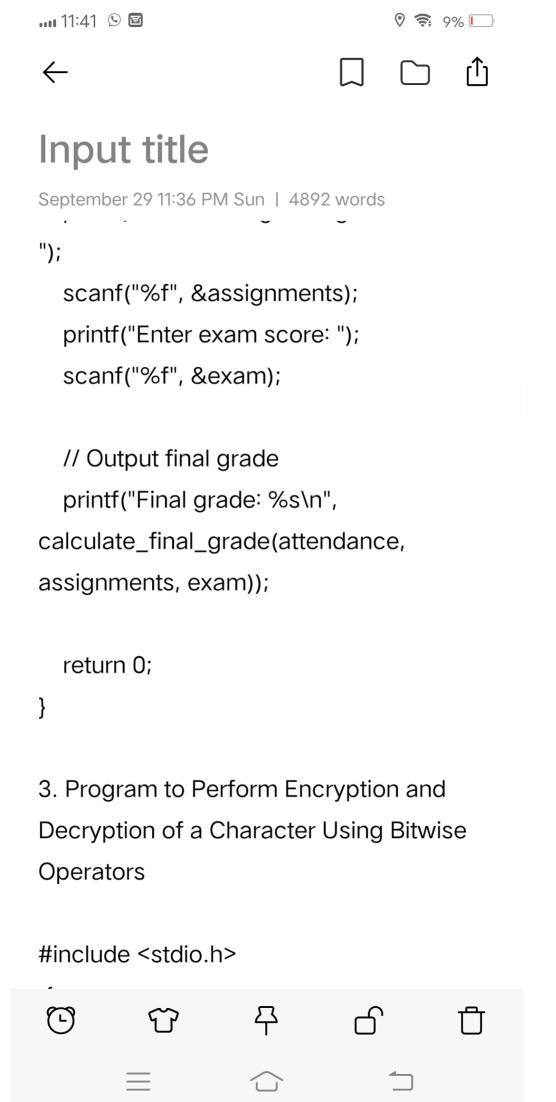






```
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     } else {
       if (exam < 50) {
          return "Fail due to low exam
score";
       } else {
          float final_score = (attendance *
0.2) + (assignments * 0.3) + (exam * 0.5);
          if (final_score >= 90) {
             return "A";
          } else if (final_score >= 80) {
             return "B";
          } else if (final_score >= 70) {
            return "C";
          } else if (final_score >= 60) {
             return "D";
          } else {
            return "F";
          }
 (<u>-</u>
```





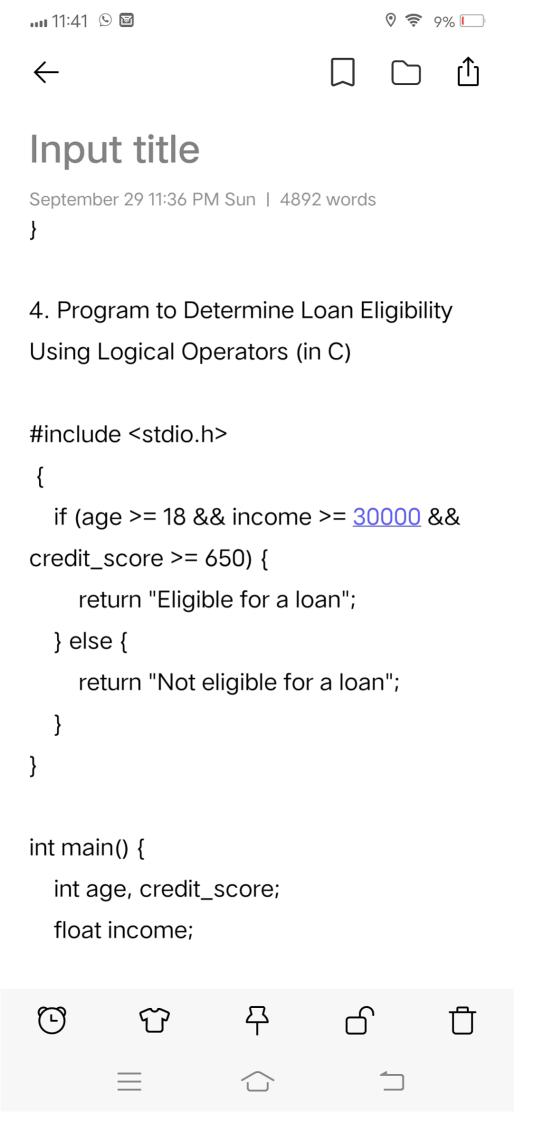
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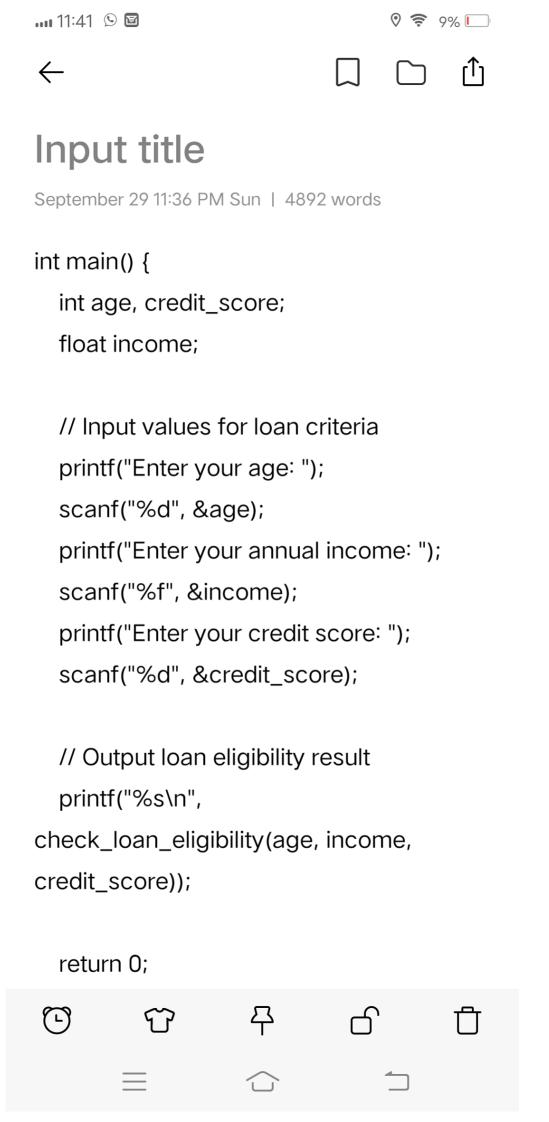
Program to Perform Encryption and Decryption of a Character Using Bitwise Operators

```
#include <stdio.h>
{
  return ch ^ key; // XOR operation for
encryption/decryption
}
int main() {
  char character, encrypted_char,
decrypted_char;
  int key = 5; // Key for encryption and
decryption
  // Input the character
  printf("Enter a character to encrypt: ");
  scanf(" %c", &character);
(-)
```



```
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  // Input the character
  printf("Enter a character to encrypt: ");
  scanf(" %c", &character);
  // Perform encryption
  encrypted_char =
encrypt_decrypt(character, key);
  printf("Encrypted character: %c\n",
encrypted_char);
  // Perform decryption
  decrypted_char =
encrypt_decrypt(encrypted_char, key);
  printf("Decrypted character: %c\n",
decrypted_char);
  return 0;
```







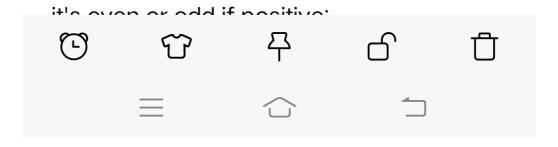
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1. Program to categorize a person's age into different life stages:

```
#include <stdio.h>
int main() {
  int age;
  // Input age
  printf("Enter your age: ");
  scanf("%d", &age);
  // Categorize based on age
  if (age >= 0) {
    if (age <= 12) {
(I)
```

```
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    if (age <= 12) {
       printf("You are a Child.\n");
    } else if (age <= 19) {
       printf("You are a Teenager.\n");
    } else if (age <= 59) {
       printf("You are an Adult.\n");
    } else {
       printf("You are a Senior.\n");
    }
  } else {
     printf("Invalid age.\n");
  }
  return 0;
}
```

2. Program to determine if a number is positive, negative, or zero, and check if





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2. Program to determine if a number is positive, negative, or zero, and check if it's even or odd if positive:

```
#include <stdio.h>
int main() {
  int number;
  // Input the number
  printf("Enter a number: ");
  scanf("%d", &number);
  // Determine if positive, negative, or
zero
  if (number > 0) {
```



```
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  if (number > 0) {
    printf("The number is positive.\n");
    // Check if the number is even or odd
    if (number % 2 == 0) {
       printf("It is an even number.\n");
    } else {
       printf("It is an odd number.\n");
    }
  } else if (number < 0) {
     printf("The number is negative.\n");
  } else {
    printf("The number is zero.\n");
  }
  return 0;
}
```





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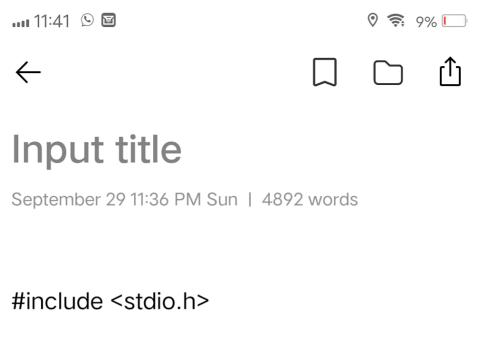
1. Program to check if a number is divisible by both 3 and 5 using logical operators:

```
#include <stdio.h>
int main() {
  int number;
  // Input the number
  printf("Enter a number: ");
  scanf("%d", &number);
  // Check if the number is divisible by
both 3 and 5
  if (number % 3 == 0 && number % 5 ==
(<u>-</u>
```

```
if (number % 3 == 0 && number % 5 ==
0) {
    printf("The number %d is divisible by
both 3 and 5.\n", number);
    } else {
        printf("The number %d is not divisible
by both 3 and 5.\n", number);
    }
    return 0;
}
```

2. Program to check if a person is eligible to vote based on age and citizenship status:



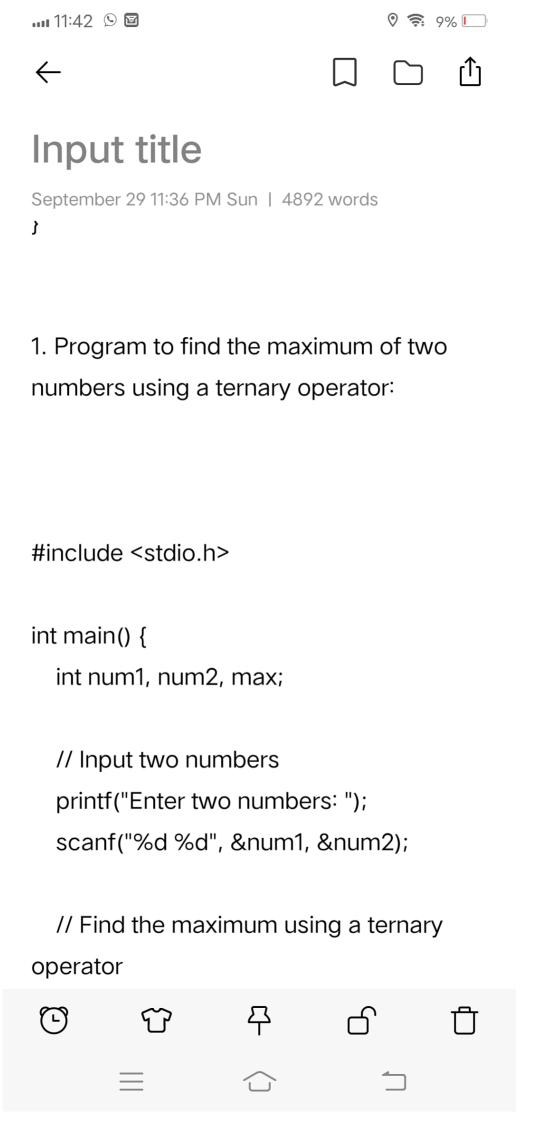


```
int main() {
  int age;
  char citizen;
  // Input the age and citizenship status
  printf("Enter your age: ");
  scanf("%d", &age);
  printf("Are you a citizen? (y/n): ");
  scanf(" %c", &citizen); // note the
space before %c to capture the newline
character
  // Check if the person is eligible to vote
  if (age >= 18) {
```

```
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  // Check if the person is eligible to vote
  if (age >= 18) {
     if (citizen == 'y' || citizen == 'Y') {
       printf("You are eligible to vote.\n");
     } else {
       printf("You are not eligible to vote
because you are not a citizen.\n");
     }
  } else {
     printf("You are not eligible to vote
because you are under 18.\n");
  }
  return 0;
}
```

1. Program to find the maximum of two numbers using a ternary operator:







```
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// I ind the maximum doing a terriary
operator
  max = (num1 > num2) ? num1 : num2;

// Output the maximum
  printf("The maximum of %d and %d is
%d.\n", num1, num2, max);

return 0;
}
```

2. Program to calculate the sum of digits of a number until the result is a single digit:

#include <stdio.h>





```
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#include <stdio.h>
int main() {
  int number, sum, digit;
  // Input the number
  printf("Enter a number: ");
  scanf("%d", &number);
  // Initialize sum
  sum = number;
  // Loop until sum is a single digit
  while (sum >= 10) {
    sum = 0; // Reset sum for new
calculation
    while (number > 0) {
       digit = number % 10; // Extract the
(<u>-</u>
```

```
? ? 9% □
.... 11:42 S S
\leftarrow
Input title
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    while (number > 0) {
       digit = number % 10; // Extract the
last digit
       sum += digit; // Add the digit to
sum
       number /= 10; // Remove the
last digit
    number = sum; // Update number to
be the sum for the next iteration
  }
  // Output the single digit result
  printf("The single digit sum is: %d\n",
sum);
  return 0;
}
```