

ĐẠI HỌC QUỐC GIA THÀNH PHỐ HỒ CHÍ MINH
TRƯỜNG ĐẠI HỌC KHOA HỌC TỰ NHIÊN
KHOA CÔNG NGHỆ THÔNG TIN



BÁO CÁO BÀI TẬP 4

| Đề tài |

HỢP NGỮ X86

| Sinh viên thực hiện |

Nguyễn Thái Bảo

23120023

| Giáo viên hướng dẫn |

Thầy Lê Viết Long

Môn học: Hệ thống máy tính

Thành phố Hồ Chí Minh - 2025

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1. THÔNG TIN SINH VIÊN

Họ và tên: Nguyễn Thái Bảo

Mã số sinh viên: 23120023

Lớp: 23CTT1

Email: 23120023@student.hcmus.edu.vn

2. ĐÁNH GIÁ

Bài	Ghi chú	Đánh giá mức độ hoàn thành
1	Hoàn thành đầy đủ yêu cầu: - Viết chương trình nhập số nguyên n - Kiểm tra n có là số nguyên tố hay không, in kết quả ra màn hình	100%
2	Hoàn thành đầy đủ yêu cầu: - Viết chương trình nhập số nguyên n - Kiểm tra n có là số nguyên hoàn thiện hay không, in kết quả ra màn hình	100%
3	Hoàn thành đầy đủ yêu cầu: - Viết chương trình nhập số nguyên n - Kiểm tra n có là số chính phương hay không, in kết quả ra màn hình	100%
4	Hoàn thành đầy đủ yêu cầu: - Viết chương trình nhập số nguyên n - Kiểm tra n có là số đối xứng hay không, in kết quả ra màn hình	100%
5	Hoàn thành đầy đủ yêu cầu: Viết chương trình thực hiện các chức năng: - Nhập mảng 1 chiều n phần tử số nguyên - Xuất mảng - Liệt kê các số nguyên tố - Tìm giá trị lớn nhất trong mảng - Tính trung bình mảng	100%

Đánh giá tổng thể mức độ hoàn thành bài tập: 100%

3. KẾT QUẢ BÀI LÀM

BÀI 1.

The screenshot shows the SASM assembly editor with the following code:

```

1  ;Ho va ten: Nguyen Thai Bao
2  ; MSSV: 23120023
3  ;Lop: 23CTT1
4
5  %include "io.inc"
6  extern getch
7
8  section .data
9  tb1 db "Nhap n: ",0
10 tb2 db "%d la so nguyen to",10,0
11 tb3 db "%d khong phai la so nguyen to",10,0
12 fmt db "%d",0
13
14 section .bss
15 n resd 1
16
17 section .text
18 global main
19
20 main:
21 ;write your code here
22 ;xuat tb1
23 push tb1
24 call printf
25 add esp,4
26
27 ;nhap n
28 push n

```

The console output shows the program execution:

```

[20:17:12] Built successfully.
[20:17:18] The program is executing...
[20:17:43] The program stopped.
[20:18:16] Build started...
[20:18:16] Built successfully.
[20:18:22] The program is executing...

```

The screenshot shows the SASM assembly editor with the same code as above. The input is now 97, and the output is 'Nhap n: 97 la so nguyen to'.

The console output shows the program execution:

```

[20:17:10] The program is executing...
[20:17:43] The program stopped.
[20:18:16] Build started...
[20:18:16] Built successfully.
[20:18:22] The program is executing...
[20:18:46] The program stopped.
[20:18:47] The program is executing...

```

SASM

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BT1.asm

```

1 ;Ho va ten: Nguyen Thai Bao
2 ; MSSV: 23120023
3 ;Lop: 23CTT1
4
5 %include "io.inc"
6 extern getch
7
8 section .data
9 tb1 db "Nhap n: ",0
10 tb2 db "%d la so nguyen to",10,0
11 tb3 db "%d khong la so nguyen to",10,0
12 fmt db "%d",0
13
14 section .bss
15 n resd 1
16
17 section .text
18 global main
19
20 main:
21 ;write your code here
22 ;xuat tb1
23 push tb1
24 call printf
25 add esp,4
26
27 ;nhap n
28 push n

```

Input: 1

Output: Nhap n: 1 khong la so nguyen to

[20:19:01] The program is executing...
 [20:19:04] The program stopped.
 [20:19:05] The program is executing...
 [20:19:12] The program stopped.
 [20:19:16] Build started...
 [20:19:16] Built successfully.
 [20:19:16] The program is executing...

SASM

File Edit Build Debug Settings Help

BT1.asm

```

1 ;Ho va ten: Nguyen Thai Bao
2 ; MSSV: 23120023
3 ;Lop: 23CTT1
4
5 %include "io.inc"
6 extern getch
7
8 section .data
9 tb1 db "Nhap n: ",0
10 tb2 db "%d la so nguyen to",10,0
11 tb3 db "%d khong la so nguyen to",10,0
12 fmt db "%d",0
13
14 section .bss
15 n resd 1
16
17 section .text
18 global main
19
20 main:
21 ;write your code here
22 ;xuat tb1
23 push tb1
24 call printf
25 add esp,4
26
27 ;nhap n
28 push n

```

Input: 25

Output: Nhap n: 25 khong la so nguyen to

[20:19:02] The program is executing...
 [20:19:12] The program stopped.
 [20:19:16] Build started...
 [20:19:16] Built successfully.
 [20:19:16] The program is executing...
 [20:19:35] The program stopped.
 [20:19:40] The program is executing...

BÀI 2.

The screenshot shows the SASM assembly editor with the following assembly code:

```

1 ;Ho va ten: Nguyen Thai Bao
2 ; MSSV: 23120023
3 ;Lop: 23CTT1
4
5 %include "io.inc"
6 extern getch
7
8 section .data
9 tb1 db "Nhap n: ",0
10 tb2 db "%d la so hoan thien",10,0
11 tb3 db "%d khong la so hoan thien",10,0
12 fmt db "%d",0
13
14 section .bss
15 n resd 1
16 sum resd 1
17
18 section .text
19 global main
20
21 main:
22 ;write your code here
23 ;xuat tb1
24 push tb1
25 call printf
26 add esp,4
27 ;nhap n
28

```

The console output shows the following sequence of events:

```

[20:19:10] The program is executing...
[20:19:35] The program stopped.
[20:19:40] The program is executing...
[20:20:07] The program stopped.
[20:22:23] Build started...
[20:22:23] Built successfully.
[20:22:30] The program is executing...

```

The input field contains the value '6' and the output field displays 'Nhap n: 6 la so hoan thien'.

The screenshot shows the same SASM assembly editor with the same assembly code as above.

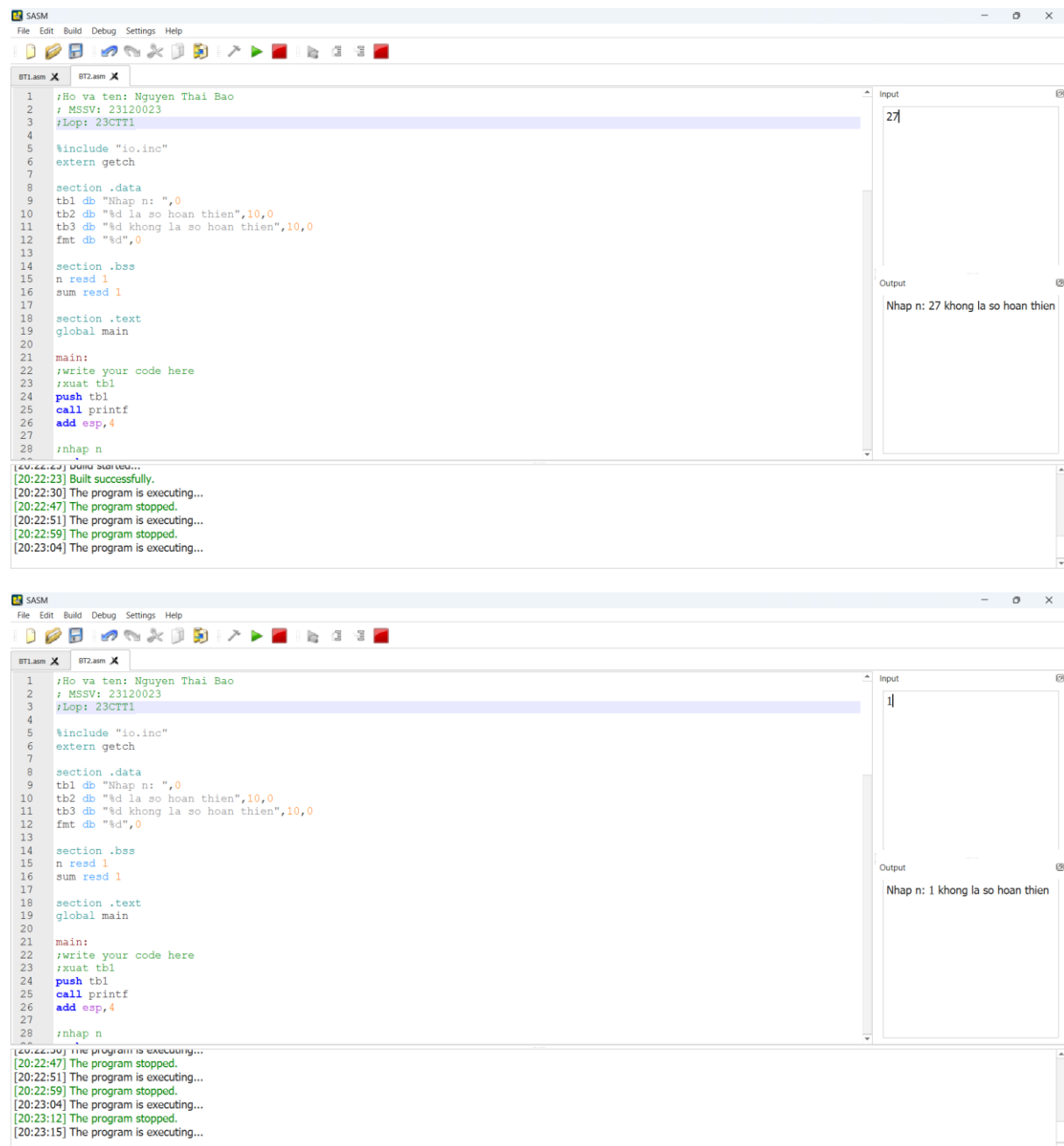
The console output shows the following sequence of events:

```

[20:19:40] The program is executing...
[20:20:07] The program stopped.
[20:22:23] Build started...
[20:22:23] Built successfully.
[20:22:30] The program is executing...
[20:22:47] The program stopped.
[20:22:51] The program is executing...

```

The input field contains the value '8128' and the output field displays 'Nhap n: 8128 la so hoan thien'.



BÀI 3.

The screenshot shows the SASM assembly editor with the following code:

```

1  ;Ho va ten: Nguyen Thai Bao
2  ; MSSV: 23120023
3  ;Lop: 23CTT1
4
5  %include "io.inc"
6  extern getch
7
8  section .data
9  tbl db "Nhap n: ",0
10 tb2 db "%d la so chinh phuong",10,0
11 tb3 db "%d khong la so chinh phuong",10,0
12 fmt db "%d",0
13
14 section .bss
15 n read 1
16
17 section .text
18 global main
19
20 main:
21 ;write your code here
22 ;xuat tbl
23 push tbl
24 call printf
25 add esp,4
26
27 ;nhap n
28 push n

```

The console output shows the program execution log and the result of the program:

```

[20:28:56] The program is executing...
[20:28:49] The program stopped.
[20:28:56] Build started...
[20:28:56] Built successfully.
[20:28:56] The program is executing...
[20:29:04] The program stopped.
[20:29:04] The program is executing...

```

The input field contains the value 1, and the output field displays: "Nhap n: 1 la so chinh phuong".

The screenshot shows the same SASM assembly editor with the same code as above. The input field now contains the value 100, and the output field displays: "Nhap n: 100 la so chinh phuong".

SASM

File Edit Build Debug Settings Help

BT1.asm BT2.asm BT3.asm

```

1 ;Ho va ten: Nguyen Thai Bao
2 ; MSSV: 23120023
3 ;Lop: 23CTT1
4
5 %include "io.inc"
6 extern getch
7
8 section .data
9 tbl db "Nhap n: ",0
10 tb2 db "%d là số chính phương",10,0
11 tb3 db "%d không là số chính phương",10,0
12 fmt db "%d",0
13
14 section .bss
15 n read 1
16
17 section .text
18 global main
19
20 main:
21 ;write your code here
22 ;xuat tbl
23 push tbl
24 call printf
25 add esp,4
26
27 ;nhap n
28 push n

```

Input: 55

Output: Nhap n: 55 không là số chính phương

[20:29:20] The program is executing...
[20:29:04] The program stopped.
[20:29:04] The program is executing...
[20:29:19] The program stopped.
[20:29:20] The program is executing...
[20:29:31] The program stopped.
[20:29:32] The program is executing...

SASM

File Edit Build Debug Settings Help

BT1.asm BT2.asm BT3.asm

```

1 ;Ho va ten: Nguyen Thai Bao
2 ; MSSV: 23120023
3 ;Lop: 23CTT1
4
5 %include "io.inc"
6 extern getch
7
8 section .data
9 tbl db "Nhap n: ",0
10 tb2 db "%d là số chính phương",10,0
11 tb3 db "%d không là số chính phương",10,0
12 fmt db "%d",0
13
14 section .bss
15 n read 1
16
17 section .text
18 global main
19
20 main:
21 ;write your code here
22 ;xuat tbl
23 push tbl
24 call printf
25 add esp,4
26
27 ;nhap n
28 push n

```

Input: 274

Output: Nhap n: 274 không là số chính phương

[20:29:20] The program is executing...
[20:29:31] The program stopped.
[20:29:32] The program is executing...
[20:29:41] The program stopped.
[20:29:44] The program is executing...
[20:29:50] The program stopped.
[20:29:51] The program is executing...

BÀI 4.

The image displays two screenshots of the SASM (Small Assembler) interface, showing the assembly code and its execution results.

Top Screenshot:

- Assembly Code:**

```

1 ;Ho va ten: Nguyen Thai Bao
2 ; MSSV: 23120023
3 ;Lop: 23CTT1
4
5 %include "io.inc"
6 extern getch
7
8 section .data
9 tb1 db "Nhap n: ",0
10 tb2 db "%d la so doi xung",10,0
11 tb3 db "%d khong la so doi xung",10,0
12 fmt db "%d",0
13
14 section .bss
15 n resd 1
16 reverse resd 1
17
18 section .text
19 global main
20
21 main:
22 ;write your code here
23 ;xuat tb1
24 push tb1
25 call printf
26 add esp,4
27
28 ;nhap n

```
- Input:** 7
- Output:** Nhap n: 7 la so doi xung
- Execution Log:**

```

[20:33:09] The program is executing...
[20:33:13] The program stopped.
[20:33:14] The program is executing...
[20:33:19] The program stopped.
[20:33:20] The program is executing...
[20:33:22] The program stopped.
[20:33:24] The program is executing...

```

Bottom Screenshot:

- Assembly Code:** (Same as the top screenshot)
- Input:** 1221
- Output:** Nhap n: 1221 la so doi xung
- Execution Log:**

```

[20:33:19] The program is executing...
[20:33:19] The program stopped.
[20:33:20] The program is executing...
[20:33:22] The program stopped.
[20:33:24] The program is executing...
[20:33:36] The program stopped.
[20:33:41] The program is executing...

```

SASM

File Edit Build Debug Settings Help

BT1.asm BT2.asm BT3.asm BT4.asm

```

1 ;Ho va ten: Nguyen Thai Bao
2 ; MSSV: 23120023
3 ;Lop: 23CTT1
4
5 %include "io.inc"
6 extern getch
7
8 section .data
9 tb1 db "Nhap n: ",0
10 tb2 db "%d la so doi xung",10,0
11 tb3 db "%d khong la so doi xung",10,0
12 fmt db "%d",0
13
14 section .bss
15 n resd 1
16 reverse resd 1
17
18 section .text
19 global main
20
21 main:
22 ;write your code here
23 ;xuat tb1
24 push tb1
25 call printf
26 add esp,4
27
28 ;nhap n

```

Input: 12321

Output: Nhap n: 12321 la so doi xung

[20:33:20] The program is executing...
 [20:33:22] The program stopped.
 [20:33:24] The program is executing...
 [20:33:36] The program stopped.
 [20:33:41] The program is executing...
 [20:33:53] The program stopped.
 [20:33:54] The program is executing...

SASM

File Edit Build Debug Settings Help

BT1.asm BT2.asm BT3.asm BT4.asm

```

1 ;Ho va ten: Nguyen Thai Bao
2 ; MSSV: 23120023
3 ;Lop: 23CTT1
4
5 %include "io.inc"
6 extern getch
7
8 section .data
9 tb1 db "Nhap n: ",0
10 tb2 db "%d la so doi xung",10,0
11 tb3 db "%d khong la so doi xung",10,0
12 fmt db "%d",0
13
14 section .bss
15 n resd 1
16 reverse resd 1
17
18 section .text
19 global main
20
21 main:
22 ;write your code here
23 ;xuat tb1
24 push tb1
25 call printf
26 add esp,4
27
28 ;nhap n

```

Input: 123421

Output: Nhap n: 123421 khong la so doi xung

[20:33:27] The program is executing...
 [20:33:36] The program stopped.
 [20:33:41] The program is executing...
 [20:33:53] The program stopped.
 [20:33:54] The program is executing...
 [20:34:05] The program stopped.
 [20:34:05] The program is executing...

BÀI 5.

```

1 ;Ho va ten: Nguyen Thai Bao
2 ; MSSV: 23120023
3 ;Lop: 23CTT1
4
5 %include "io.inc"
6 extern getch
7
8 section .data
9 tb1 db "Nhap so phan tu: ",0
10 tb2 db "a[%d] = ",0
11 tb3 db "Mang da nhap: ",0
12 tb4 db "Cac so nguyen to trong mang: ",0
13 tb5 db "Gia tri lon nhat trong mang: %d",10,0
14 tb6 db "Trung binh mang: %d",10,0
15 tb7 db "Khong co so nguyen to trong mang.",10,0
16 fmt_d1 db "%d",0
17 fmt_d2 db "%d",0
18 newline db 10,0
19
20 section .bss
21 n resd 1 ; So phan tu mang
22 arr resd 100 ; Mang toi da 100 phan tu
23 sum resd 1 ; Tong mang
24 has_primes resd 1 ; Kiem tra co so nguyen to khong
25
26 section .text
27 global main
28
29 [20:49:39] The program is executing...
30 [20:49:38] The program stopped.
31 [20:49:39] Build started...
32 [20:49:39] Built successfully.
33 [20:49:40] The program is executing...
34 [20:50:31] The program stopped.
35 [20:50:51] The program is executing...
    
```

Input: 4
2 23 97 59

Output: Nhap so phan tu: a[0] = a[1] =
a[2] = a[3] =
Mang da nhap: 2 23 97 59
Cac so nguyen to trong mang: 2
23 97 59
Gia tri lon nhat trong mang: 97
Trung binh mang: 45

```

1 ;Ho va ten: Nguyen Thai Bao
2 ; MSSV: 23120023
3 ;Lop: 23CTT1
4
5 %include "io.inc"
6 extern getch
7
8 section .data
9 tb1 db "Nhap so phan tu: ",0
10 tb2 db "a[%d] = ",0
11 tb3 db "Mang da nhap: ",0
12 tb4 db "Cac so nguyen to trong mang: ",0
13 tb5 db "Gia tri lon nhat trong mang: %d",10,0
14 tb6 db "Trung binh mang: %d",10,0
15 tb7 db "Khong co so nguyen to trong mang.",10,0
16 fmt_d1 db "%d",0
17 fmt_d2 db "%d",0
18 newline db 10,0
19
20 section .bss
21 n resd 1 ; So phan tu mang
22 arr resd 100 ; Mang toi da 100 phan tu
23 sum resd 1 ; Tong mang
24 has_primes resd 1 ; Kiem tra co so nguyen to khong
25
26 section .text
27 global main
28
29 [20:49:39] The program is executing...
30 [20:48:26] The program stopped.
31 [20:48:50] The program is executing...
32 [20:49:38] The program stopped.
33 [20:49:39] Build started...
34 [20:49:39] Built successfully.
35 [20:49:40] The program is executing...
    
```

Input: 5
2 99 35 84 57

Output: Nhap so phan tu: a[0] = a[1] =
a[2] = a[3] = a[4] =
Mang da nhap: 2 99 35 84 57
Cac so nguyen to trong mang: 2
Gia tri lon nhat trong mang: 99
Trung binh mang: 55