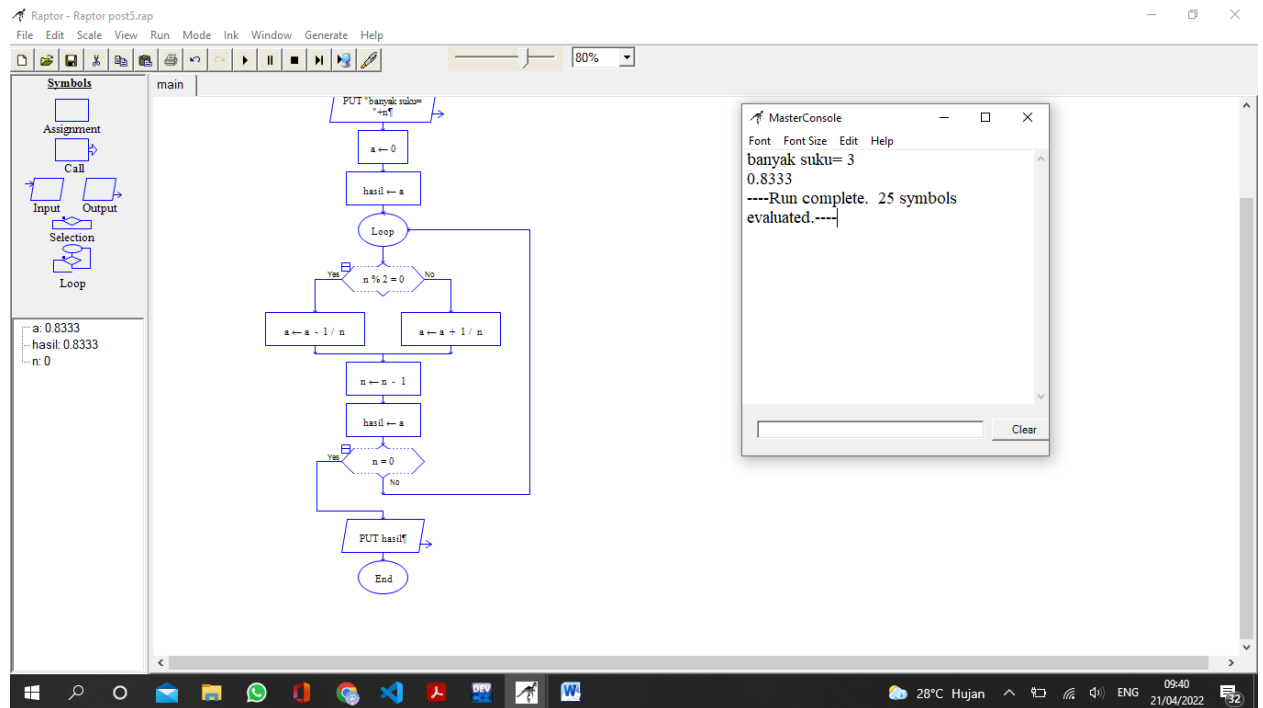


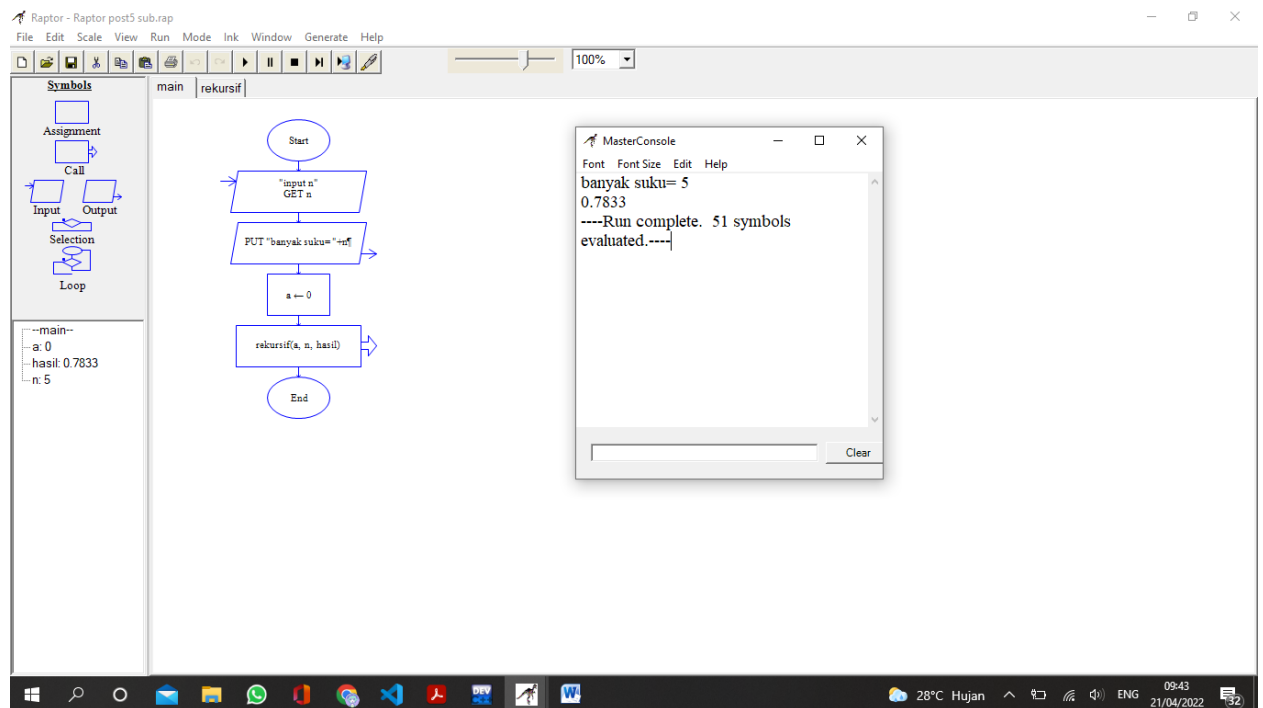
POSTEST 5

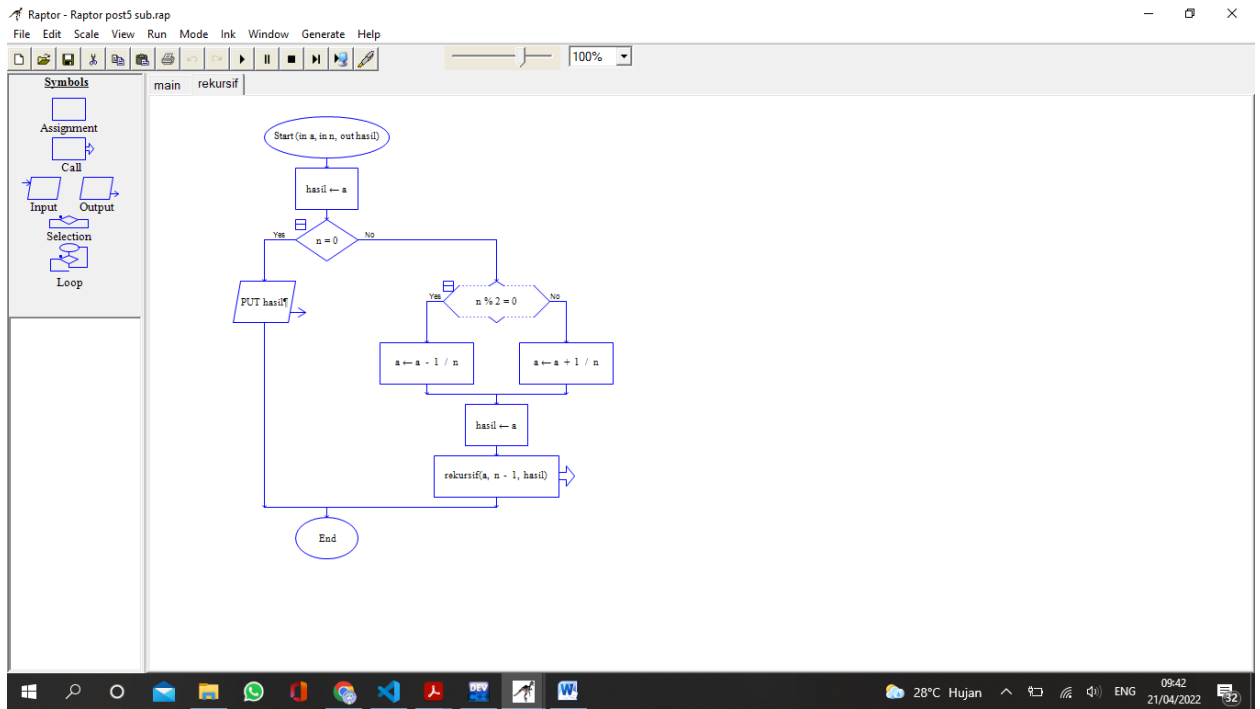
1. Screenshot program raptor

Tanpa sub-program :



Menggunakan sub-program :





2. Screenshot program c++ konversi dari raptor

Tanpa sub program :

```

File Edit Selection View Go Run Terminal Help
postest5.cpp - ALPRO - Visual Studio Code

C++ postest5.cpp U x C++ postest5_sub.cpp U h post5.h U

Pertemuan 5 > Postest > C++ postest5.cpp > rekursif(int)
1 #include <iostream>
2 using namespace std;
3 class perulangan {
4     friend istream& operator >> (istream& in, perulangan& inputkan);
5     friend ostream& operator << (ostream& out, perulangan& outputnya);
6 private:
7     int n; // suku n
8     float a; // proses menghitung
9     float t; // total
10 public:
11     float rekursif(int n);
12 };
13
14 float perulangan::rekursif(int n) {
15     if(n==0) // base case
16     {
17         return a; // mengembalikan nilai a
18     }
19     else
20     {
21         if(n % 2 == 0)
22         {
23             a -= (float) 1 / n;
24         }
25         else
26         {
27             a += (float) 1 / n;
28         }
29         return rekursif(n-1); // memanggil fungsi rekursif
30     }
31 }
32
33 istream& operator >> (istream& in, perulangan& inputkan) {

```

Hasil running :

```
File Edit Selection View Go Run Terminal Help
posttest5.cpp - ALPRO - Visual Studio Code

C++ posttest5.cpp U X C++ posttest5_sub.cpp U h post5.h U

Pertemuan 5 > Posttest > C++ posttest5.cpp > rekursif(int)
12 };
13
14 float perulangan::rekursif(int n) {
15     if(n==0) // base case
16     {
17         return a; // mengembalikan nilai a
18     }
19     else
20     {
21         if(n % 2 == 0)
22         {
23             a +=(float) 1 / n;
24         }
25         else
26         {
27             a +=(float) 1 / n;
28         }
29     }
30     return a;
31 }
32
33 int main() {
34     int n;
35     cin >> n;
36     cout << rekursif(n);
37     return 0;
38 }

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE

e' '--stdin=Microsoft-MIEngine-In-tginiq0.4on' '--stdout=Microsoft-MIEngine-Out-e0gbdndp.1e0' '--stderr=Microsoft-MIEngine-Error-un2ovvp1.as2' '--pid=Microsoft-MIE
ngine-Pid-rmebns5j.w3y' '--dbgExe=C:\msys64\mingw64\bin\gdb.exe' '--interpreter=mi'
Input banyaknya suku n untuk menghitung deret : 3

Hasil deret bilangan : 0.833333
PS F:\Collage\Sem 2\PRAKTIKUM\ALPRO>
```

Menggunakan sub-program :

```
File Edit Selection View Go Run Terminal Help
posttest5_sub.cpp - ALPRO - Visual Studio Code

C++ posttest5.cpp U C++ posttest5_sub.cpp U X h post5.h U

Pertemuan 5 > Posttest > C++ posttest5_sub.cpp > ...
1 #include <iostream>
2 #include "post5.h"
3 using namespace std;
4
5 int main() {
6     perulangan c;
7     cin >> c;
8     cout << c;
9     return 0;
10 }
```

Header :

```
File Edit Selection View Go Run Terminal Help
post5.h - ALPRO - Visual Studio Code

C- postest5.cpp U C- postest5_sub.cpp U h post5.h U X

Pertemuan 5 > Postest > h post5.h > % operator<<(ostream &, perulangan &)

1 #include <iostream>
2 using namespace std;
3
4 class perulangan {
5     friend istream& operator >> (istream& in, perulangan& inputkan);
6     friend ostream& operator << (ostream& out, perulangan& outputnya);
7     private:
8         int n; // suku n
9         float a; // proses menghitung
10        float t; // total
11    public:
12        float rekursif(int n);
13    };
14
15 float perulangan::rekursif(int n) {
16     if(n==0) // base case
17     {
18         return a; // mengembalikan nilai a
19     }
20     else
21     {
22         if(n % 2 == 0)
23         {
24             a -= (float) 1 / n;
25         }
26         else
27         {
28             a += (float) 1 / n;
29         }
30         return rekursif(n-1); // memanggil fungsi rekursif
31     }
32 }
33
Ln 43, Col 2 Spaces: 4 UTF-8 CRLF C++ Win32
28°C Hujan 09:50 21/04/2022
```

```
File Edit Selection View Go Run Terminal Help
post5.h - ALPRO - Visual Studio Code

C- postest5.cpp U C- postest5_sub.cpp U h post5.h U X

Pertemuan 5 > Postest > h post5.h > % operator<<(ostream &, perulangan &)

14
15 float perulangan::rekursif(int n) {
16     if(n==0) // base case
17     {
18         return a; // mengembalikan nilai a
19     }
20     else
21     {
22         if(n % 2 == 0)
23         {
24             a -= (float) 1 / n;
25         }
26         else
27         {
28             a += (float) 1 / n;
29         }
30         return rekursif(n-1); // memanggil fungsi rekursif
31     }
32 }
33
34 istream& operator >> (istream& in, perulangan& inputkan) {
35     cout<< "Input banyaknya suku n untuk menghitung deret : "; in >> inputkan.n;
36     return in;
37 }
38
39 ostream& operator << (ostream& out, perulangan& outputnya) {
40     outputnya.t = outputnya.rekursif(outputnya.n); // nilai a dimasukkan ke var t
41     out << "\nHasil deret bilangan : " << outputnya.t;
42     return out;
43 }
```

Hasil running :

The image shows a Visual Studio Code window with the following components:

- Editor Tabs:** `posttest5.cpp` (unsaved), `posttest5_sub.cpp` (unsaved), and `post5.h` (unsaved).
- Editor Content:** A C++ program in `posttest5_sub.cpp` with the following code:

```
1 #include <iostream>
2 #include "post5.h"
3 using namespace std;
4
5 int main() {
6     perulangan c;
7     cin >> c;
8     cout << c;
9     return 0;
10 }
```
- Terminal:** Shows the execution of the program. The output is:

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell https://aka.ms/pscore6

PS F:\Collage\Sem 2\PRAKTIKUM\VALPRO> & 'c:\Users\user\.vscode\extensions\ms-vscode.cpptools-1.9.7\debugAdapters\bin\WindowsDebugLauncher.exe' '--stdin=Microsoft-MIEngine-In-Idvsoc3.logb' '--stdout=Microsoft-MIEngine-Out-pyon483h.xz2' '--stderr=Microsoft-MIEngine-Error-nwcsvdudf.5ev' '--pid=Microsoft-MIEngine-Pid-yxu3kbc1.zpx'
Input banyaknya suku n untuk menghitung deret : 2

Hasil deret bilangan : 0.5
PS F:\Collage\Sem 2\PRAKTIKUM\VALPRO>
```
- Bottom Bar:** Shows the file explorer, search, and run and debug icons. The status bar at the bottom indicates the current file is `posttest5_sub.cpp`, line 2, column 19, with 4 spaces, UTF-8 encoding, CRLF line endings, C++ language, and Win32 architecture. The system tray shows the date and time as 21/04/2022, 09:51.