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Program 1

Screenshot of the Visual Studio Code interface showing the code for Program 1. The Explorer sidebar shows files like Prog1.cpp, Prog2.cpp, and Prog3.cpp. The main editor window displays the following C++ code:

```
Hari 2 > G: Prog1.cpp > main()
1 #include<iostream>
2 using namespace std;
3
4 int main(){
5     int *dynamicArray = (int*)malloc(5 * sizeof(int));
6
7     for(int i = 0; i < 5; i++){
8         dynamicArray[i] = i + 1;
9     }
10    for(int i = 0; i < 5; i++){
11        cout << dynamicArray[i] << " ";
12    }
13    free(dynamicArray);
14 }
```

The terminal below shows the output of running the program:

```
*it = 8
*it = 9
*it = 10
PS D:\User\Documents\Kode\KULIAH ILKOM\Strukdat\Hari 2> g++ Prog3.cpp -o prog3
PS D:\User\Documents\Kode\KULIAH ILKOM\Strukdat\Hari 2> ./prog3
5
1 7 4 0 9
9 0 4 7 1
PS D:\User\Documents\Kode\KULIAH ILKOM\Strukdat\Hari 2> ./prog1
1 2 3 4 5
PS D:\User\Documents\Kode\KULIAH ILKOM\Strukdat\Hari 2>
```

Program 2

Screenshot of the Visual Studio Code interface showing the code for Program 2. The Explorer sidebar shows files like Prog1.cpp, Prog2.cpp, and Prog3.cpp. The main editor window displays the following C++ code:

```
Hari 2 > G: Prog2.cpp > main()
9
10   for(int i = 0; i < 5; i++){
11       cout << dynamicArray[i] << " ";
12   }
13
14   int newSize = 8;
15   dynamicArray = (int*)realloc(dynamicArray, newSize * sizeof(int));
16
17   for(int i = 5; i < newSize; i++){
18       dynamicArray[i] = i + 1;
19   }
20
21   for(int i = 0; i < newSize; i++){
22       cout << dynamicArray[i] << " ";
23   }
24
25   free(dynamicArray);
26 }
```

The terminal below shows the output of running the program:

```
PS D:\User\Documents\Kode\KULIAH ILKOM\Strukdat\Hari 2> ./prog2
1 2 3 4 5 1 2 3 4 5 6 7 8
PS D:\User\Documents\Kode\KULIAH ILKOM\Strukdat\Hari 2>
```

Program 3

The screenshot shows the Visual Studio Code interface with the title bar "Strukdat". The Explorer sidebar on the left lists files in the "OPEN EDITORS" and "STRUKDAT" sections. The "STRUKDAT" section contains ".vscode", "Hari 1", "Hari 2", and "Prog1.cpp" through "Prog5.cpp" along with their corresponding ".exe" files. The "Prog3.cpp" file is currently selected and open in the editor. The code in "Prog3.cpp" is as follows:

```
Hari 2 > G: Prog3.cpp U main()
10     b = (int*) malloc(n*sizeof(int));
11
12     // for(i=0;i<n;i++){
13     //     a[i] = rand()%10;
14     //     b[n-i-1] = a[i];
15     // }
16
17     int *helpA = a;
18     int *helpB = b + n - 1;
19     for(i=0;i<n;i++){
20         *helpA = rand()%10;
21         *helpB = *helpA;
22         helpA++;
23         helpB--;
24     }
25
26     helpA = a;
27     helpB = b;
28
```

The terminal at the bottom shows the output of running "prog3" and "tes" executables.

Program 4

The screenshot shows the Visual Studio Code interface with the title bar "Strukdat". The Explorer sidebar on the left lists files in the "OPEN EDITORS" and "STRUKDAT" sections. The "STRUKDAT" section contains ".vscode", "Hari 1", "Hari 2", and "Prog1.cpp" through "Prog5.cpp" along with their corresponding ".exe" files. The "Prog4.cpp" file is currently selected and open in the editor. The code in "Prog4.cpp" is as follows:

```
Hari 2 > G: Prog4.cpp U main()
1 #include<bits/stdc++.h>
2 using namespace std;
3
4 int *getValues(){
5     int *arr = (int*) malloc(10 * sizeof(int));
6     for(int i = 0; i < 10; i++){
7         arr[i] = i + 1;
8     }
9     return arr;
10 }
11
12 int main(){
13     int *array = getValues();
14     for(int i = 0; i < 10; i++){
15         cout << *(array + i) << " ";
16     }
17 }
```

The terminal at the bottom shows the output of running "g++ prog4.cpp -o prog4" and "prog4".

Program 5

The screenshot shows the Visual Studio Code interface with the following details:

- File Bar:** File, Edit, Selection, View, Go, Run, ...
- Search Bar:** Q Strukdat
- Editor:** Hari 2 > Prog5.cpp > main() (active tab). The code is as follows:

```
4  vector<int> getValues(){
10 }
11
12 int main(){
13     vector<int> getValues();
14
15     while(!get.empty()){
16         get.pop_back();
17     };
18     get.push_back(100);
19     vector<int>::iterator it;
20     for(it = get.begin(); it != get.end(); it++){
21         cout << *it << endl;
22     }
23 }
```

- Explorer:** Shows the project structure:
 - OPEN EDITORS: Prog4.cpp, Prog3.cpp, Prog2.cpp, Prog5.cpp (Hari 2)
 - STRUKDAT: .vscode (with settings.json), Hari 1, Hari 2
 - Hari 1: Prog1.cpp, Prog1.exe, Prog2.cpp, Prog2.exe, Prog3.cpp, prog3.exe, Prog4.cpp, Prog4.exe
 - Hari 2: Prog5.cpp, tes.cpp, tes.exe
- Terminal:** PS D:\User\Documents\Kode\KULIAH ILKOM\Strukdat\Hari 2> ./prog5
*it = 100
PS D:\User\Documents\Kode\KULIAH ILKOM\Strukdat\Hari 2>
- Bottom Status Bar:** Ln 22, Col 6, Spaces: 4, UTF-8, CRLF, { } C++, Go Live, Win32