Karadeniz Teknik Üniversitesi
Bilgisayar Mühendisliği Bölümü
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BIL 2001 Veri Yapıları
Final Sınavı, 02.01.2018, 13:00, D-2, D-9
Süre : **90** Dakika

CEVAPLAR

```
void print(DoublyNode* node, bool first)
{
	if (first)
		cout << node->elem << endl;
	if (node->next != trailer)
		print(node->next, false);
	else
		cout << node->elem << endl;
}

int main()
{
	DoublyLinkedList list;
	list.insertOrdered("Paul", 720);
	list.insertOrdered("Rose", 590);
	list.insertOrdered("Anna", 660);
	list.insertOrdered("Mike", 1105);
	list.insertOrdered("Rob", 750);
	list.insertOrdered("Jack", 510);
	list.insertOrdered("Jill", 740);
	list.print(list.header->next, true);
}
```

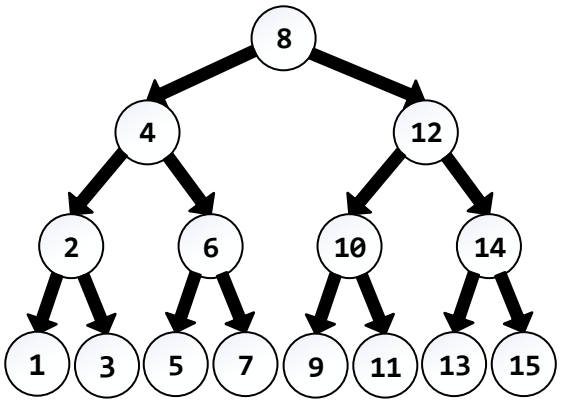
1. Yukarıdaki programın çıktısı nedir? **(25P)**

```
Jack
Mike
```

```
void traverse(Node* v)
{
   stack<Node*> stl_stack;

   stl_stack.push(v);

   while (!stl_stack.empty())
   {
      Node* current = stl_stack.top();

      if ((current->right == NULL)
         && (current->left == NULL))
         cout << current->elt << " ";

      stl_stack.pop();

      if (current->right != NULL)
            stl_stack.push(current->right);

      if (current->left != NULL)
            stl_stack.push(current->left);
   }
}
```

2. **main()**'de aşağıdaki ağacın **root**u ile çağrıldığı varsayılan **traverse()** fonksiyonunun çıktısı nedir? **(25P)**

```
1  3  5  7  9  11  13  15
```



```
void insertOrdered(DoublyNode* newNode,
                   DoublyNode* current)
{
  if(..................... && .................)

        insertOrdered(newNode, current->next);
  else
  {
        newNode->next = current->next;
        newNode->prev = current;
        current->next->prev = newNode;
        current->next = newNode;
  }
}

int main()
{
  DoublyLinkedList list; DoublyNode* newNode;
  newNode = new DoublyNode;
  newNode->elem  = "Paul";  newNode->score = 720;
  list.insertOrdered(newNode, list.header);
  newNode = new DoublyNode;
  newNode->elem = "Rose";   newNode->score = 590;
  list.insertOrdered(newNode, list.header);
  newNode = new DoublyNode;
  newNode->elem = "Anna";   newNode->score = 660;
  list.insertOrdered(newNode, list.header);
  newNode = new DoublyNode;
  newNode->elem = "Mike";   newNode->score = 1105;
  list.insertOrdered(newNode, list.header);
}
```

3. **`insertOrdered()`** fonksiyonunu tamamlayınız. **(25P)**
Not → `Trailer`'ın score değerini **`0`** varsayınız.

*Yanlış cevaptan **5P** kırılacaktır.*

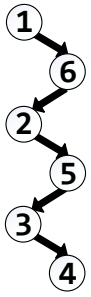
(A)
```
if ((newNode->score >= current->score)
   && (current != trailer))
```

(B)
```
if ((newNode->score >= current->next->score)
   && (current != trailer))
```

(C)
```
if ((newNode->score >= current->score)
   && (current->next != trailer))
```

(D)
```
if ((newNode->score >= current->next->score)
   && (current->next != trailer))
```

Zig
Zig-Zig
Zig-Zig
Zig
Zig-Zig
Zig-Zig
Zig



4. Yukarıdaki işlemlerle oluşturulan Splay Ağacına verilerin hangi sırada eklendiğini bulunuz. **(25P)**

→ | 4 | 3 | 5 | 2 | 6 | 1 |