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### ### 1. **\*\*Simple Calculator\*\***

- **\*\*Task\*\***: Create a basic calculator that can perform addition, subtraction, multiplication, and division.

- **\*\*Solution\*\***:

```
``csharp
    private void btnCalculate_Click(object sender,
EventArgs e)
    {
        double num1 =
Convert.ToDouble(txtNum1.Text);
        double num2 =
Convert.ToDouble(txtNum2.Text);
        double result = 0;

        switch (cmbOperation.Text)
        {
            case "+":
                result = num1 + num2;
                break;
```

```

        case "-":
            result = num1 - num2;
            break;
        case "*":
            result = num1 * num2;
            break;
        case "/":
            result = num1 / num2;
            break;
    }

```

```

    lblResult.Text = "Result: " + result.ToString();
}
```

```

### ### 2. **\*\*Temperature Converter\*\***

- **\*\*Task\*\***: Convert temperatures between Celsius and Fahrenheit.

- **\*\*Solution\*\***:

```
```csharp
```

```

private void btnConvert_Click(object sender,
EventArgs e)
{
    double temp =
Convert.ToDouble(txtTemp.Text);
    double convertedTemp;

    if (rbtnToFahrenheit.Checked)
        convertedTemp = (temp * 9 / 5) + 32;
    else
        convertedTemp = (temp - 32) * 5 / 9;

    lblConverted.Text = "Converted: " +
convertedTemp.ToString();
}
...

```

### ### 3. **\*\*To-Do List\*\***

- **\*\*Task\*\***: Create a simple To-Do List application.
- **\*\*Solution\*\***:
  - ```csharp

```
private void btnAdd_Click(object sender,  
EventArgs e)
```

```
{  
    lstTasks.Items.Add(txtTask.Text);  
    txtTask.Clear();  
}
```

```
private void btnRemove_Click(object sender,  
EventArgs e)
```

```
{  
    lstTasks.Items.Remove(lstTasks.SelectedItem);  
}  
...
```

#### ### 4. \*\*Login Form\*\*

- \*\*Task\*\*: Create a login form that verifies username and password.

- \*\*Solution\*\*:

```
```csharp
```

```
private void btnLogin_Click(object sender,  
EventArgs e)
```

```
{
```

```

        if(txtUsername.Text == "admin" &&
txtPassword.Text == "password")
            MessageBox.Show("Login Successful");
        else
            MessageBox.Show("Login Failed");
    }
    ...

```

### ### 5. **\*\*Basic Notepad\*\***

- **\*\*Task\*\***: Develop a simple notepad with the ability to save and open files.

- **\*\*Solution\*\***:

```

``csharp
private void btnSave_Click(object sender,
EventArgs e)
{
    SaveFileDialog saveFileDialog = new
SaveFileDialog();
    if (saveFileDialog.ShowDialog() ==
DialogResult.OK)
    {

```

```
        File.WriteAllText(saveFileDialog.FileName,
txtEditor.Text);
    }
}
```

```
private void btnOpen_Click(object sender,
EventArgs e)
{
    OpenFileDialog openFileDialog = new
OpenFileDialog();
    if (openFileDialog.ShowDialog() ==
DialogResult.OK)
    {
        txtEditor.Text =
File.ReadAllText(openFileDialog.FileName);
    }
}
...
```

### ### 6. \*\*Digital Clock\*\*

- \*\*Task\*\*: Display a digital clock that updates every second.

```

- **Solution**:
    ``csharp
    private void timer1_Tick(object sender, EventArgs
e)
    {
        lblTime.Text =
DateTime.Now.ToString("HH:mm:ss");
    }
    ...

```

### ### 7. **\*\*Picture Viewer\*\***

- **\*\*Task\*\***: Create a picture viewer that can load and display images.

```

- **Solution**:
    ``csharp
    private void btnLoadImage_Click(object sender,
EventArgs e)
    {
        OpenFileDialog openFileDialog = new
OpenFileDialog();
        if (openFileDialog.ShowDialog() ==
DialogResult.OK)

```

```
{  
    pictureBox1.Image =  
Image.FromFile(openFileDialog.FileName);  
}  
}  
``
```

### ### 8. \*\*Stopwatch\*\*

- \*\*Task\*\*: Develop a basic stopwatch with start, stop, and reset functionality.

- \*\*Solution\*\*:

```
``csharp  
  
private DateTime startTime;  
  
private void btnStart_Click(object sender,  
EventArgs e)  
{  
    timer1.Start();  
    startTime = DateTime.Now;  
}
```



```
private void btnStop_Click(object sender,  
EventArgs e)
```

```
{  
    timer1.Stop();  
}
```

```
private void btnReset_Click(object sender,  
EventArgs e)
```

```
{  
    timer1.Stop();  
    lblTime.Text = "00:00:00";  
}
```

```
private void timer1_Tick(object sender, EventArgs  
e)
```

```
{  
    TimeSpan elapsed = DateTime.Now - startTime;  
    lblTime.Text =  
elapsed.ToString(@"hh\:mm\:ss");  
}  
...
```

### ### 9. **\*\*Color Picker\*\***

- **\*\*Task\*\***: Create a form with a color picker dialog.

- **\*\*Solution\*\***:

```
``csharp
    private void btnChooseColor_Click(object sender,
EventArgs e)
    {
        if (colorDialog1.ShowDialog() ==
DialogResult.OK)
        {
            this.BackColor = colorDialog1.Color;
        }
    }
``
```

### ### 10. **\*\*Simple Interest Calculator\*\***

- **\*\*Task\*\***: Calculate simple interest based on principal, rate, and time.

- **\*\*Solution\*\***:

```
``csharp
    private void btnCalculate_Click(object sender,
EventArgs e)
```

```

{
    double principal =
Convert.ToDouble(txtPrincipal.Text);
    double rate = Convert.ToDouble(txtRate.Text);
    double time = Convert.ToDouble(txtTime.Text);
    double interest = (principal * rate * time) / 100;

    lblInterest.Text = "Interest: " +
interest.ToString();
}
...

```

### ### 11. **\*\*Unit Converter\*\***

- **\*\*Task\*\***: Convert units like meters to kilometers, grams to kilograms, etc.

- **\*\*Solution\*\***:

```

``csharp
private void btnConvert_Click(object sender,
EventArgs e)
{
    double value =
Convert.ToDouble(txtValue.Text);

```

```

double convertedValue;

if (cmbUnits.Text == "Meters to Kilometers")
    convertedValue = value / 1000;
else if (cmbUnits.Text == "Grams to Kilograms")
    convertedValue = value / 1000;
else
    convertedValue = value;

lblResult.Text = "Converted: " +
convertedValue.ToString();
}
...

```

### ### 12. \*\*Grade Calculator\*\*

- \*\*Task\*\*: Calculate a student's grade based on marks input.

- \*\*Solution\*\*:

```

``csharp

private void btnCalculate_Click(object sender,
EventArgs e)

```

```
{  
    double marks =  
Convert.ToDouble(txtMarks.Text);  
    string grade;  
  
    if (marks >= 90)  
        grade = "A";  
    else if (marks >= 80)  
        grade = "B";  
    else if (marks >= 70)  
        grade = "C";  
    else if (marks >= 60)  
        grade = "D";  
    else  
        grade = "F";  
  
    lblGrade.Text = "Grade: " + grade;  
}  
...
```

### 13. \*\*Student Information System\*\*

- **\*\*Task\*\***: Input and display student details in a list.

- **\*\*Solution\*\***:

```
```csharp
    private void btnAddStudent_Click(object sender,
EventArgs e)
    {
        string studentInfo = txtName.Text + " - " +
txtAge.Text + " years old";
        lstStudents.Items.Add(studentInfo);
        txtName.Clear();
        txtAge.Clear();
    }
```
```

### 14. **\*\*BMI Calculator\*\***

- **\*\*Task\*\***: Calculate Body Mass Index (BMI) based on height and weight.

- **\*\*Solution\*\***:

```
```csharp
    private void btnCalculateBMI_Click(object sender,
EventArgs e)
```

```

{
    double weight =
Convert.ToDouble(txtWeight.Text);

    double height =
Convert.ToDouble(txtHeight.Text) / 100;

    double bmi = weight / (height * height);

    lblBMI.Text = "BMI: " + bmi.ToString("F2");
}
...

```

### ### 15. **\*\*Random Number Generator\*\***

- **\*\*Task\*\***: Generate a random number within a specified range.

- **\*\*Solution\*\***:

```

``csharp

private void btnGenerate_Click(object sender,
EventArgs e)
{
    Random random = new Random();
    int min = Convert.ToInt32(txtMin.Text);
    int max = Convert.ToInt32(txtMax.Text);

```

```
int randomNumber = random.Next(min, max + 1);
```

```
lblRandomNumber.Text = "Random Number: " + randomNumber.ToString();
```

```
}  
``
```

### ### 16. **\*\*Number Guessing Game\*\***

- **\*\*Task\*\***: Create a simple number guessing game.

- **\*\*Solution\*\***:

```
``csharp  
private int secretNumber;  
private void btnStartGame_Click(object sender,  
EventArgs e)  
{  
    Random random = new Random();  
    secretNumber = random.Next(1, 101);  
    lblResult.Text = "Game Started!";  
}
```



```

private void btnGuess_Click(object sender,
EventArgs e)
{
    int guess = Convert.ToInt32(txtGuess.Text);

    if (guess == secretNumber)
        lblResult.Text = "Correct! You guessed the
number.";
    else if (guess < secretNumber)
        lblResult.Text = "Too low!";
    else
        lblResult.Text = "Too high!";
}
...

```

### ### 17. \*\*Form Navigation\*\*

- \*\*Task

\*\*:

- \*\*Solution\*\*:

```

```csharp

```

```
private void btnOpenForm2_Click(object sender,
EventArgs e)
{
    Form2 form2 = new Form2();
    form2.Show();
    this.Hide();
}
...
```

### 18. **\*\*Image Slideshow\*\***

- **\*\*Task\*\***: Create a basic image slideshow.
- **\*\*Solution\*\***:

```
``csharp
private int currentIndex = 0;
private string[] images = { "image1.jpg",
"image2.jpg", "image3.jpg" };

private void btnNext_Click(object sender,
EventArgs e)
{
    currentIndex = (currentIndex + 1)
% images.Length;
```

```
        pictureBox1.Image =  
Image.FromFile(images[currentImageIndex]);  
    }
```

```
    private void btnPrevious_Click(object sender,  
EventArgs e)  
    {  
        currentImageIndex = (currentImageIndex - 1 +  
images.Length) % images.Length;  
        pictureBox1.Image =  
Image.FromFile(images[currentImageIndex]);  
    }  
    ...
```

### ### 19. \*\*Simple Quiz Application\*\*

- \*\*Task\*\*: Develop a quiz application with multiple-choice questions.

- \*\*Solution\*\*:

```
```csharp
```

```
private int correctAnswers = 0;
```

```

    private void btnSubmit_Click(object sender,
EventArgs e)
    {
        if (rbtnCorrectAnswer.Checked)
            correctAnswers++;

        lblScore.Text = "Score: " +
correctAnswers.ToString();
    }
    ...

```

### ### 20. **\*\*Text File Reader\*\***

- **\*\*Task\*\***: Read and display the contents of a text file.

- **\*\*Solution\*\***:

```

``csharp
    private void btnLoadFile_Click(object sender,
EventArgs e)
    {
        OpenFileDialog openFileDialog = new
OpenFileDialog();

```

```
        if (openFileDialog.ShowDialog() ==  
DialogResult.OK)  
        {  
            txtFileContents.Text =  
File.ReadAllText(openFileDialog.FileName);  
        }  
    }  
    ...  
    ...
```

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