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public static class AnalyzeForm
{
    private static readonly string formsRecognizerApiEndpointSetting =
"FORMS_RECOGNIZER_ENDPOINT_URL";

    private static readonly string formsRecognizerApiKeySetting = "FORMS_RECOGNIZER_API_KEY";
    private static readonly string modelIdSetting = "FORMS_RECOGNIZER_MODEL_ID";
    private static readonly string retryDelaySetting = "FORMS_RECOGNIZER_DELAY_ATTEMPTS";
    private static readonly string maxAttemptsSetting = "FORMS_RECOGNIZER_MAX_ATTEMPTS";

    [FunctionName("analyze-form")]
    public static async Task<ActionResult> RunAnalyzeForm(
        [HttpTrigger(AuthorizationLevel.Function, "post", Route = null)] HttpRequest req,
        ILogger log,
        ExecutionContext executionContext)
    {
        log.LogInformation("Analyze Form Custom Skill: C# HTTP trigger function processed a request.");

        string skillName = executionContext.FunctionName;

        IEnumerable<WebApiRequestRecord> requestRecords =
WebApiSkillHelpers.GetRequestRecords(req);
        if (requestRecords == null)
        {
            return new BadRequestObjectResult($"{skillName} - Invalid request record array.");
        }

        string formsRecognizerEndpointUrl =
Environment.GetEnvironmentVariable(formsRecognizerApiEndpointSetting,
EnvironmentVariableTarget.Process).TrimEnd('/');

        string formsRecognizerApiKey =
Environment.GetEnvironmentVariable(formsRecognizerApiKeySetting,
EnvironmentVariableTarget.Process);

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    string modelId = Environment.GetEnvironmentVariable(modelIdSetting,
EnvironmentVariableTarget.Process);

    int retryDelay = int.TryParse(Environment.GetEnvironmentVariable(retryDelaySetting,
EnvironmentVariableTarget.Process), out int parsedRetryDelay) ? parsedRetryDelay : 1000;

    int maxAttempts = int.TryParse(Environment.GetEnvironmentVariable(maxAttemptsSetting,
EnvironmentVariableTarget.Process), out int parsedMaxAttempts) ? parsedMaxAttempts : 100;

    Dictionary<string, string> fieldMappings = JsonConvert.DeserializeObject<Dictionary<string,
string>>(
        File.ReadAllText($"{executionContext.FunctionAppDirectory}\\field-mappings.json"));

    WebApiSkillResponse response = await
WebApiSkillHelpers.ProcessRequestRecordsAsync(skillName, requestRecords,

        async (inRecord, outRecord) => {

            var formUrl = inRecord.Data["formUrl"] as string;
            var formSasToken = inRecord.Data["formSasToken"] as string;

            // Create the job

            string jobId = await GetJobId(formsRecognizerEndpointUrl, formUrl + formSasToken,
modelId, formsRecognizerApiKey);

            // Get the results

            for (int attempt = 0; attempt < maxAttempts; attempt++)
            {
                (string status, JToken result) = await GetJobStatus(jobId, formsRecognizerApiKey);
                if (status == "failed")
                {
                    var errors = result.SelectToken("analyzeResult.errors") as JArray;
                    outRecord.Errors.AddRange(errors.Children().Select(error => new
WebApiErrorWarningContract
                    {
                        Message = error.SelectToken("message").ToObject<string>()
                    }
                )
            }
        }
    }

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    });
    return outRecord;
}
if (status == "succeeded")
{
    List<Page> pages =
result.SelectToken("analyzeResult.pageResults").ToObject<List<Page>>());
    //List<Page> pages =
result.SelectToken("analyzeResult.documentResults[0]").ToObject<List<Page>>());
    foreach (KeyValuePair<string, string> kvp in fieldMappings)
    {
        List<JToken> newresults = FindTokens(result, kvp.Key);
        string value = "";
        if (newresults.Count>0)
        {
            value = GetJTokenValue(newresults);
        }
        //string value = GetField(pages, kvp.Key);
        if (!string.IsNullOrEmpty(value))
        {
            outRecord.Data[kvp.Value] = value;
        }
    }
    return outRecord;
}
await Task.Delay(retryDelay);
}
outRecord.Errors.Add(new WebApiErrorWarningContract
{
    Message = $"The forms recognizer did not finish the job after {maxAttempts} attempts."

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    });
    return outRecord;
});

return new OkObjectResult(response);
}

private static string GetJTokenValue(List<JToken> newresults)
{
    string value = newresults[0].SelectToken("valueString").ToString();
    return value;
}

/// <summary>
/// Searches for a field in a given page and returns the concatenated results.
/// </summary>
/// <param name="response">the responded from the forms recognizer service.</param>
/// <param name="fieldName">The field to search for</param>
/// <returns></returns>
/*private static string GetField(IList<Page> pages, string fieldName)
{
    IEnumerable<string> value = pages
        .SelectMany(p => p.KeyValuePairs)
        .Where(kvp => string.Equals(kvp.Key.Text.Trim(), fieldName,
StringComparison.CurrentCultureIgnoreCase))
        .Select(kvp => kvp.Value.Text);
    return value == null ? null : string.Join(" ", value);
}*/

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/// <summary>
/// Creates the analysis job and returns a job id
/// </summary>
/// <param name="documentBytes">The binary contents of the document to analyze.</param>
/// <param name="modelId">The id of the trained model to use.</param>
/// <returns>The job id that can be used in analyzeResults.</returns>
private static async Task<string> GetJobId(string endpointUrl, string formUrl, string modelId, string
apiKey)
{
    string uri = endpointUrl + "/formrecognizer/v2.0-preview/custom/models/" +
Uri.EscapeDataString(modelId) + "/analyze";

    using (var client = new HttpClient())
    {
        using (var request = new HttpRequestMessage
        {
            Method = HttpMethod.Post,
            RequestUri = new Uri(uri),
            Content = new StringContent(JsonConvert.SerializeObject(new
            {
                source = formUrl
            })),
        })
        {
            request.Headers.Add("Ocp-Apim-Subscription-Key", apiKey);
            request.Content.Headers.ContentType = new MediaTypeHeaderValue("application/json");
            using (HttpResponseMessage response = await client.SendAsync(request))
            {

                if (response.StatusCode != HttpStatusCode.Accepted)

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        {
            throw new HttpRequestException($"The remote service {uri} responded with a
{response.StatusCode} error code instead of the expected 202 Accepted.");
        }
        return response.Headers.GetValues("Operation-Location").FirstOrDefault();
    }
}
}
}
}

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/// <summary>

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/// Makes a request to get the job status, and the full response if the job's complete.

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/// </summary>

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/// <param name="modelId">The trained model id.</param>

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/// <param name="jobId">The job id.</param>

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/// <returns></returns>

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private static async Task<(string status, JToken results)> GetJobStatus(string jobId, string apiKey)

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{

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    using (var client = new HttpClient())

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    {

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        using (var request = new HttpRequestMessage

```

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        {

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            Method = HttpMethod.Get,

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            RequestUri = new Uri(jobId)

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        })

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        {

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            request.Headers.Add("Ocp-Apim-Subscription-Key", apiKey);

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            using (HttpResponseMessage response = await client.SendAsync(request))

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            {

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        if (!response.IsSuccessStatusCode)
        {
            throw new HttpRequestException($"The remote service {jobId} responded with a
{response.StatusCode} error code.");
        }

        string responseBody = await response.Content.ReadAsStringAsync();
        var responseObject = JObject.Parse(responseBody);
        return (responseObject.SelectToken("status").ToObject<string>(), responseObject);
    }
}
}
}

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public static List<JToken> FindTokens(this JToken containerToken, string name)
{
    List<JToken> matches = new List<JToken>();
    FindTokens(containerToken, name, matches);
    return matches;
}

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private static void FindTokens(JToken containerToken, string name, List<JToken> matches)
{
    if (containerToken.Type == JTokenType.Object)
    {
        foreach (JProperty child in containerToken.Children<JProperty>())
        {
            if (child.Name == name)

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    {
        matches.Add(child.Value);
    }
    FindTokens(child.Value, name, matches);
}
}
else if (containerToken.Type == JTokenType.Array)
{
    foreach (JToken child in containerToken.Children())
    {
        FindTokens(child, name, matches);
    }
}
}
}
```