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# PROJECT 1 -2024

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Arabi Flower



MAY 30, 2024

LEBANESE UNIVERSITY – FACULTY OF SCIENCE  
LEBANON - FANAR

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## 1. Setup an account on any cloud provider

We are using **Microsoft Azure** as a cloud provider.

The screenshot shows the Microsoft Azure portal homepage. At the top, there's a search bar with the placeholder "Search resources, services, and docs (G+/" and a user profile icon for "guitta.moubarak@st.ul... LEBANESE UNIVERSITY (ULEDU...)".

Below the search bar, there are four cards:

- "Take a free online course on Microsoft Learn" (Icon: laptop)
- "Watch a demo and attend a live Q&A" (Icon: video camera)
- "Start a project with Quickstart Center" (Icon: gear and code)
- "Explore support resources" (Icon: magnifying glass and person)

Under "View remaining credit" and "Upgrade", it says "View remaining credit to try any service, or browse free services included with your account."

Below these cards is a section titled "Azure services" with various icons and links:

- Create a resource (Icon: plus)
- Subscriptions (Icon: key)
- Projects (Icon: people)
- Quickstart Center (Icon: rocket)
- Azure AI services (Icon: cloud with brain)
- Kubernetes services (Icon: cluster)
- Virtual machines (Icon: computer monitor)
- App Services (Icon: globe)
- Storage accounts (Icon: bar chart)
- More services (Icon: arrow)

Below the services is a "Resources" section with a "Recent" tab selected, showing a single item: "Azure subscription 1".

The bottom of the screen shows the Windows taskbar with various pinned icons and the system tray indicating the date and time as 5/7/2024 at 10:23 AM.

## 2. Version Control

### a. Create a GitHub repository for the sample web application.

The screenshot shows the GitHub repository creation page for "Project1\_ArabiFlower".

At the top, there are sections for "Set up GitHub Copilot" (using AI to autocomplete suggestions) and "Add collaborators to this repository" (searching for GitHub users).

Below these are sections for "Quick setup — if you've done this kind of thing before" and "...or create a new repository on the command line".

The "Quick setup" section includes a "Set up in Desktop" button, an "HTTPS" link, an "SSH" link, and a URL input field: "https://github.com/Mohammad-Fleity2002/Project1\_ArabiFlower.git". It also provides instructions to start by creating a new file or uploading an existing file, and recommends including a `README`, `LICENSE`, and `.gitignore`.

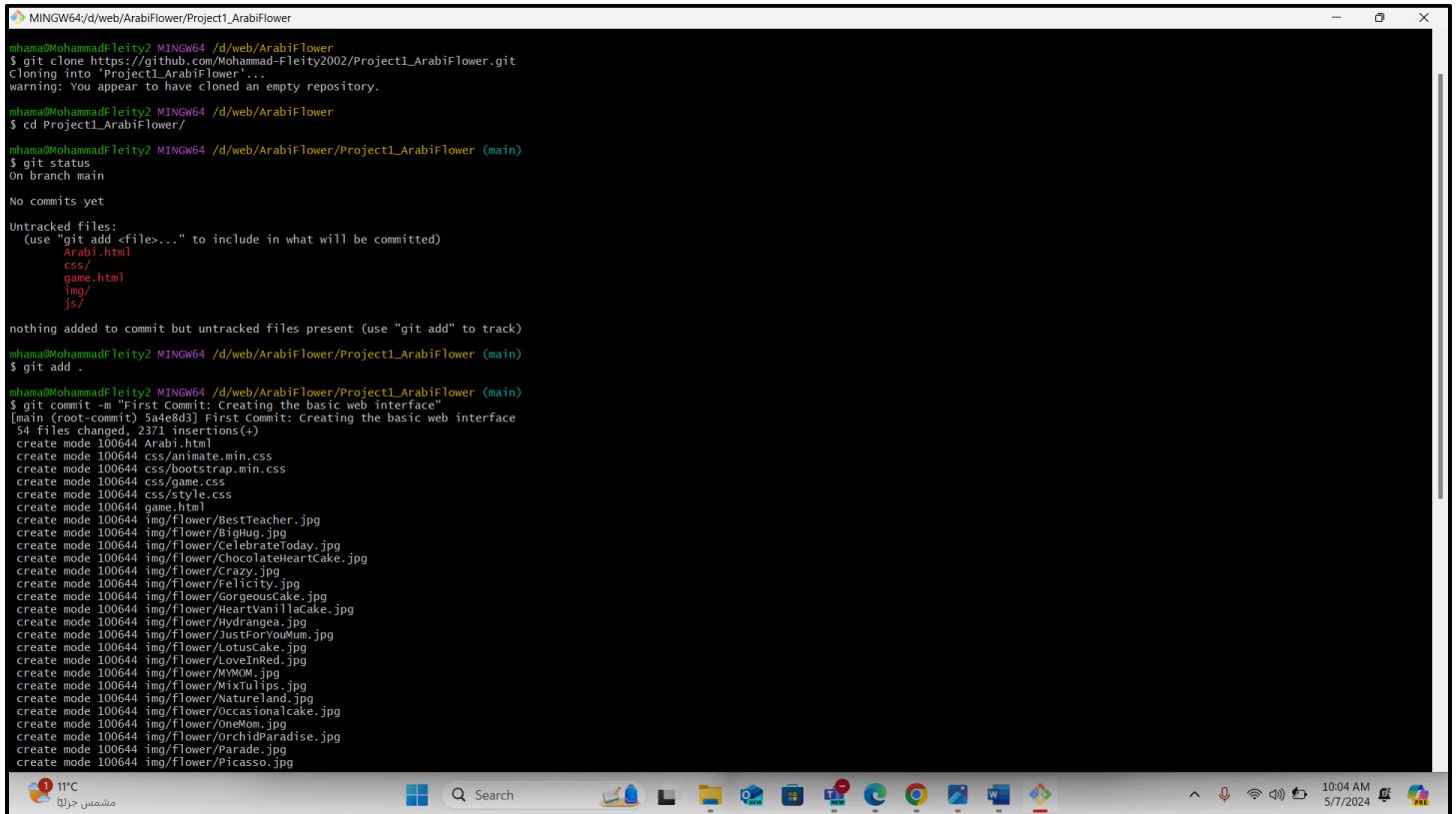
The "Create a new repository on the command line" section contains the following command:

```
echo "# Project1_ArabiFlower" >> README.md
git init
git add README.md
git commit -m "first commit"
git branch -M main
git remote add origin https://github.com/Mohammad-Fleity2002/Project1_ArabiFlower.git
git push -u origin main
```

The bottom of the screen shows the Windows taskbar with various pinned icons and the system tray indicating the date and time as 5/7/2024 at 10:00 AM.

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b. Clone the repository to your local development environment.



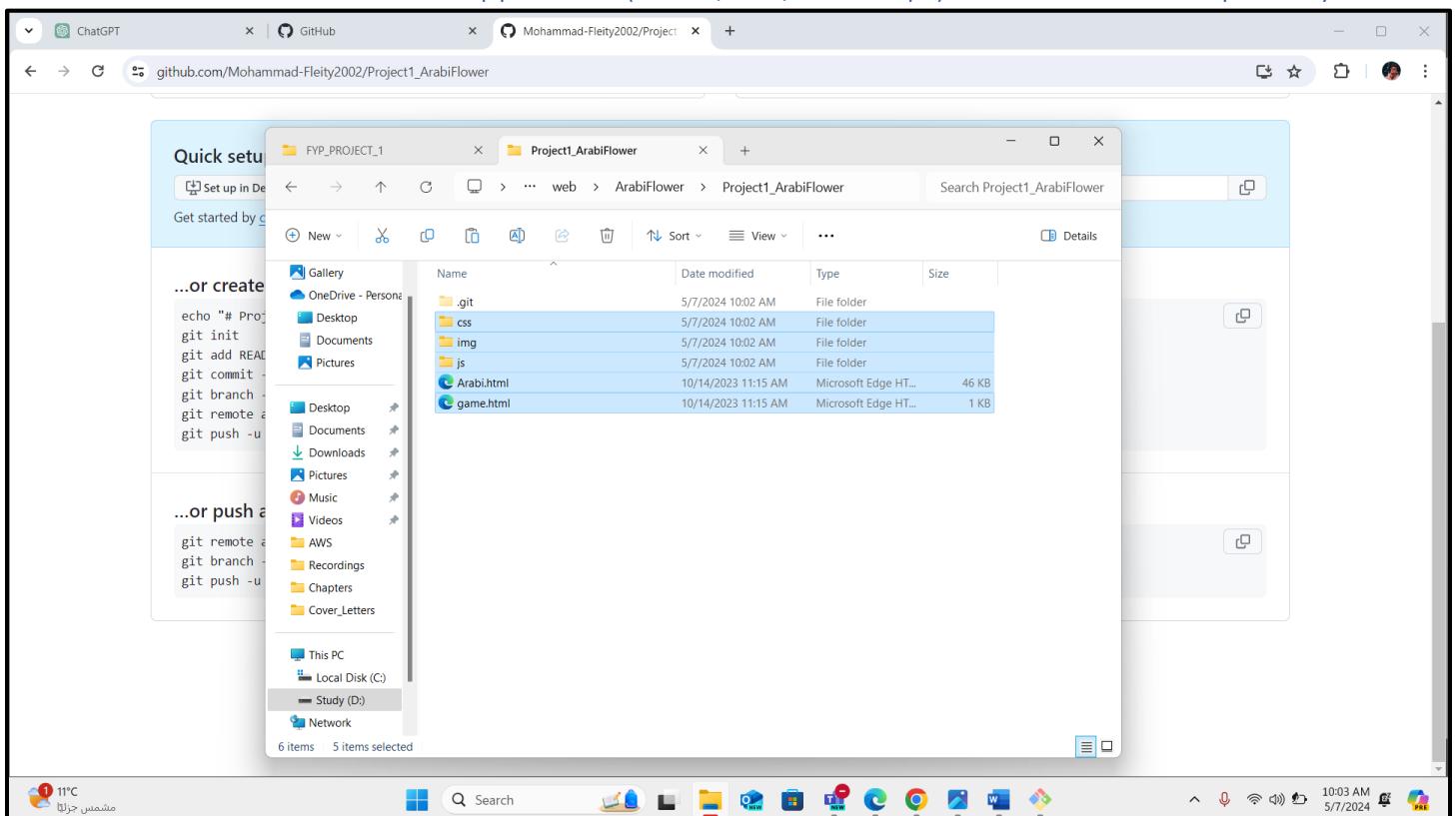
```
MINGW64 /d/web/ArabiFlower/Project1_ArabiFlower
mohama@MohammadFleity2 MINGW64 /d/web/ArabiFlower
$ git clone https://github.com/Mohammad-Fleity2002/Project1_ArabiFlower.git
Cloning into 'Project1_ArabiFlower'...
warning: You appear to have cloned an empty repository.

mohama@MohammadFleity2 MINGW64 /d/web/ArabiFlower/Project1_ArabiFlower (main)
$ git status
On branch main
No commits yet
Untracked files:
  (use "git add <file>..." to include in what will be committed)
    Arabi.html
    css/
    game.html
    img/
    js/
nothing added to commit but untracked files present (use "git add" to track)

mohama@MohammadFleity2 MINGW64 /d/web/ArabiFlower/Project1_ArabiFlower (main)
$ git add .

mohama@MohammadFleity2 MINGW64 /d/web/ArabiFlower/Project1_ArabiFlower (main)
$ git commit -m "First Commit: Creating the basic web interface"
[main (root-commit) Sadeed1] First Commit: Creating the basic web interface
  54 files changed, 2371 insertions(+)
create mode 100644 Arabi.html
create mode 100644 css/animate.min.css
create mode 100644 css/bootstrap.min.css
create mode 100644 css/game.css
create mode 100644 css/style.css
create mode 100644 game.html
create mode 100644 img/flower/BestTeacher.jpg
create mode 100644 img/flower/BigHug.jpg
create mode 100644 img/flower/CelebrateToday.jpg
create mode 100644 img/flower/ChocolateHeartCake.jpg
create mode 100644 img/flower/Crazy.jpg
create mode 100644 img/flower/Felicity.jpg
create mode 100644 img/flower/GorgeousCake.jpg
create mode 100644 img/flower/HeartVanillaCake.jpg
create mode 100644 img/flower/Hydrangea.jpg
create mode 100644 img/flower/JustForYouMum.jpg
create mode 100644 img/flower/LoveRed.jpg
create mode 100644 img/flower/MMOM.jpg
create mode 100644 img/flower/MixTulips.jpg
create mode 100644 img/flower/Natureland.jpg
create mode 100644 img/flower/Occasionalcake.jpg
create mode 100644 img/flower/OneMom.jpg
create mode 100644 img/flower/orchidParadise.jpg
create mode 100644 img/flower/Parade.jpg
create mode 100644 img/flower/Picasso.jpg
```

c. Create a basic web application (HTML, CSS, JavaScript) and add it to the repository.



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d. Commit and push the code to the GitHub repository.

```
MINGW64:/d/web/ArabiFlower/Project1_ArabiFlower
create mode 100644 css/game.css
create mode 100644 css/style.css
create mode 100644 game.html
create mode 100644 img/flower/BestTeacher.jpg
create mode 100644 img/flower/Bighug.jpg
create mode 100644 img/flower/CelebrateToday.jpg
create mode 100644 img/flower/CocoChocolateHeartCake.jpg
create mode 100644 img/flower/Cross.jpg
create mode 100644 img/flower/Felicity.jpg
create mode 100644 img/flower/GorgeousCake.jpg
create mode 100644 img/flower/HeartVanillaCake.jpg
create mode 100644 img/flower/Hydrangea.jpg
create mode 100644 img/flower/JustForYouMum.jpg
create mode 100644 img/flower/Lotuscake.jpg
create mode 100644 img/flower/LoveInRed.jpg
create mode 100644 img/flower/MYMON.jpg
create mode 100644 img/flower/Natureland.jpg
create mode 100644 img/flower/Occasionalcake.jpg
create mode 100644 img/flower/OneMOM.jpg
create mode 100644 img/flower/orchidParadise.jpg
create mode 100644 img/flower/Parade.jpg
create mode 100644 img/flower/Picasso.jpg
create mode 100644 img/flower/PrettyCake.jpg
create mode 100644 img/flower/SHMOM.jpg
create mode 100644 img/flower/SimplyRedandWhite.jpg
create mode 100644 img/flower/SunflowerCake.jpg
create mode 100644 img/flower/SweetSuccess.jpg
create mode 100644 img/flower/TulipKveta.jpg
create mode 100644 img/flower/TulipBagMom.jpg
create mode 100644 img/flower/lilascake.jpg
create mode 100644 img/flower/pinkconfetti.jpg
create mode 100644 img/game/bck.jpg
create mode 100644 img/game/congrats.jpg
create mode 100644 img/game/f11.jpg
create mode 100644 img/game/f12.jpg
create mode 100644 img/game/f13.jpg
create mode 100644 img/game/f14.jpg
create mode 100644 img/game/f15.jpg
create mode 100644 img/game/f16.jpg
create mode 100644 img/slides/slider1.jpg
create mode 100644 img/slides/slider2.jpg
create mode 100644 img/slides/slider3.jpg
create mode 100644 img/slides/slidel1_0.jpg
create mode 100644 img/slides/slidel1.jpg
create mode 100644 img/slides/slidel2.jpg
create mode 100644 js/bootstrap.min.js
create mode 100644 js/game.js
create mode 100644 js/main.js
create mode 100644 js/main1.js
create mode 100644 js/swiper-bundle.min.js

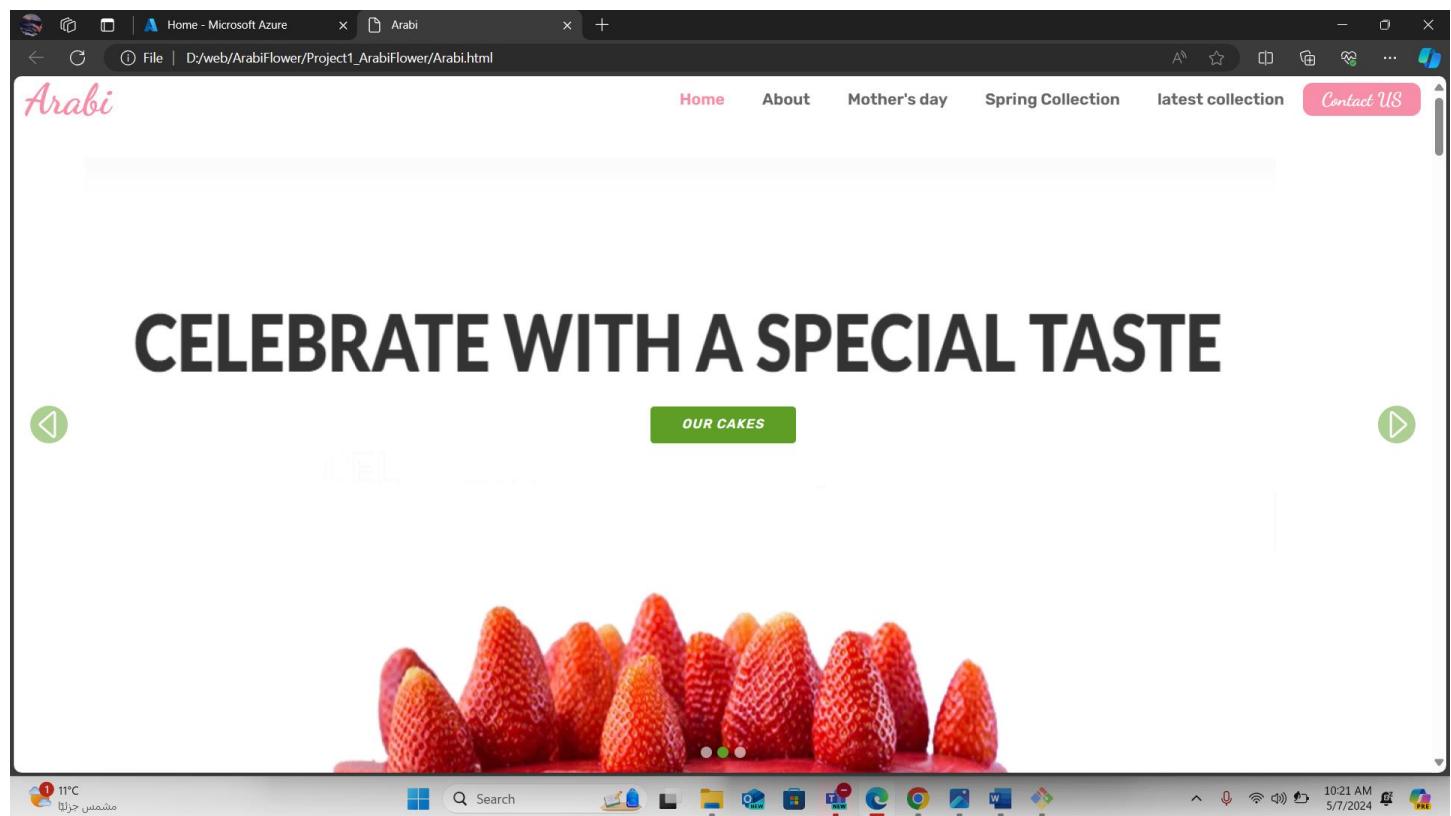
mhama@MohammadFleity2: MINGW64 /d/web/ArabiFlower/Project1_ArabiFlower (main)
$ git push .
Everything up-to-date
mhama@MohammadFleity2: MINGW64 /d/web/ArabiFlower/Project1_ArabiFlower (main)
$ |
```

The screenshot shows a GitHub repository page for 'Project1\_ArabiFlower'. The repository has 1 branch and 0 tags. The most recent commit was made by 'MohammadFleity' 3 minutes ago, titled 'First Commit: Creating the basic web interface'. The commit includes changes to 'css', 'img', 'js', 'Arabi.html', 'README.md', and 'game.html'. The 'About' section describes it as a 'basic frontend website for a flower shop' used in a DevOps environment. The 'Contributors' section lists 'MohammadFleity2' and 'Mohammad Fl...'. The browser taskbar at the bottom shows various pinned icons and the system tray indicates it's 10:20 AM on 5/7/2024.

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### e. The Website



The screenshot shows a product page from the Arabi website. It features four main items arranged in a grid:

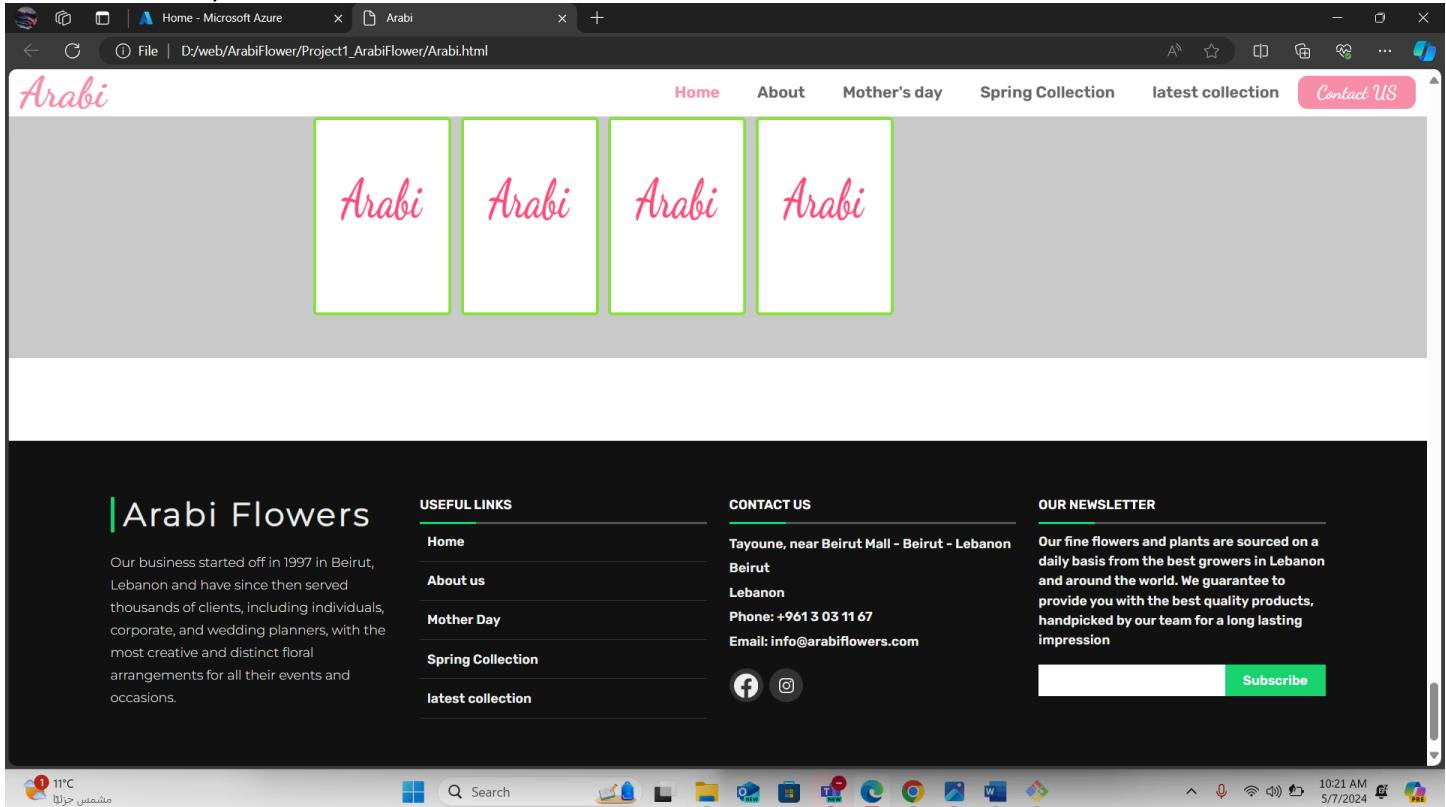
- Lilas Cake**: A white cake decorated with pink and purple flowers. Price: 55.00\$. Order now button.
- Sun Flower Cake**: A white cake decorated with a large yellow sunflower. Price: 55.00\$. Order now button.
- One Mom**: A basket filled with pink lilies and hydrangeas. Price: 350.00\$. Order now button.
- Big Hug**: A large arrangement of various colorful flowers in a light-colored vase. Price: 250.00\$. Order now button.

Below this grid, there are two rows of smaller images showing different floral arrangements and gift baskets:

- A yellow gift basket filled with pink roses and yellow flowers.
- A white round box filled with a variety of colorful flowers.
- A white rectangular box containing white tulips and dried grass.
- A pink gift basket filled with purple and pink roses.

The website has a standard Windows taskbar at the bottom with icons for search, file explorer, and other applications.

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### 3. Continuous Integration (CI) And Containerization:

- Set up a CI/CD service.
  - Creating the project.

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The screenshot shows the Azure DevOps Project1\_ArabiFlower Summary page. The left sidebar contains links for Overview, Summary, Dashboards, Wiki, Boards, Repos, Pipelines, Test Plans, and Artifacts. The main area features a cartoon illustration of a person working at a desk with a dog. Below the illustration, the text "Welcome to the project!" is displayed, followed by "What service would you like to start with?". A navigation bar below includes tabs for Boards, Repos, Pipelines, Test Plans, and Artifacts, with Artifacts being the active tab. To the right, there is a "Project stats" section showing a chart icon and the message "No stats are available at this moment. Setup a service to see project activity." At the bottom, there is a "Members" section. The browser status bar shows the date and time as 10:32 AM 5/7/2024.

ii. Creating a pipeline for ci:

The screenshot shows the Azure DevOps New pipeline - Pipelines configuration page. The left sidebar has links for Overview, Boards, Repos, Pipelines (which is selected), Environments, Library, Test Plans, and Artifacts. The main area displays a warning message: "⚠ You selected a public repository, but this is not a public project. Go to [project settings](#) to change the visibility of the project. [Learn more](#)". Below this, there are four tabs: Connect, Select, Configure (which is active), and Review. The "Configure" tab shows two options: "Starter pipeline" (selected) and "Existing Azure Pipelines YAML file". The "Starter pipeline" option is described as "Start with a minimal pipeline that you can customize to build and deploy your code." The "Existing Azure Pipelines YAML file" option is described as "Select an Azure Pipelines YAML file in any branch of the repository." A "Show more" button is also present. The browser status bar shows the date and time as 10:37 AM 5/7/2024.

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The screenshot shows the Azure DevOps Pipelines interface. On the left, there's a sidebar with project navigation: Overview, Boards, Repos, Pipelines (selected), Pipelines, Environments, Library, Test Plans, Artifacts, and Project settings. The main area has tabs: Connect, Select, Configure, and Review (selected). A warning message says: "You selected a public repository, but this is not a public project. Go to [project settings](#) to change the visibility of the project. [Learn more](#)". Below this, it says "New pipeline" and "Review your pipeline YAML". There's a "Variables" button and a "Save and run" button. The code editor shows "azure-pipelines.yml" with the following YAML:

```
1 # Starter pipeline
2 # Start with a minimal pipeline that you can customize to build and deploy your code.
3 # Add steps that build, run tests, deploy, and more:
4 # https://aka.ms/yaml
5
6 trigger:
7 - main
8
9 pool:
10   vmImage: ubuntu-latest
11
12 steps:
13 - script: echo Hello, world!
14   displayName: 'Run a one-line script'
15
16 - script: |
17   echo Add other tasks to build, test, and deploy your project.
18   echo See https://aka.ms/yaml
19   displayName: 'Run a multi-line script'
20
```

The screenshot shows the Azure DevOps Pipelines interface for a specific run. The URL is dev.azure.com/guittamoubarak/Project1\_ArabiFlower/\_build/results?buildId=2&view=results. The sidebar is identical to the previous screenshot. The main area shows a summary card for "Pipeline Run #20240507.1 • Set up CI with Azure Pipelines" triggered by Mohammad-Fleity2002. It includes details like repository version (main f54dc7e9), time started (Just now), related work items (0), and artifacts (0). Below this is a "Jobs" table:

| Name | Status | Duration |
|------|--------|----------|
| Job  | Queued |          |

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iii. Requesting Hosted parallelism:

The screenshot shows a Microsoft Forms survey titled "Azure DevOps Parallelism Request". The form consists of four questions:

1. What is your name? \*  
Guitta moubarak
2. What is your email address? \*  
guitta.moubarak@st.ul.edu.lb
3. What is the name of your Azure DevOps Organization? \*  
(E.g. for <https://myorganization.visualstudio.com> or <https://dev.azure.com/myorganization> link formats - organization name would be 'myorganization')  
https://dev.azure.com/guittamoubarak
4. Are you requesting a parallelism increase for Public or Private projects? \*  
 Private  
 Public

The browser window includes a tab for "Pipelines - Run 20240507.1 log", a search bar, and a taskbar at the bottom showing various application icons.

The screenshot shows the Azure DevOps Pipelines interface for the project "Project1\_Arabiflower". The pipeline "Mohammad-Fleity2002.Proj..." is currently running, indicated by the status "20240507.1". The "Jobs" section shows a single job step with the following details:

- Job ID: #20240507.1
- Owner: Mohammad-Fleity2002.Project1\_Arabiflower
- Status: Failed
- Duration: 28s

The error message displayed is:

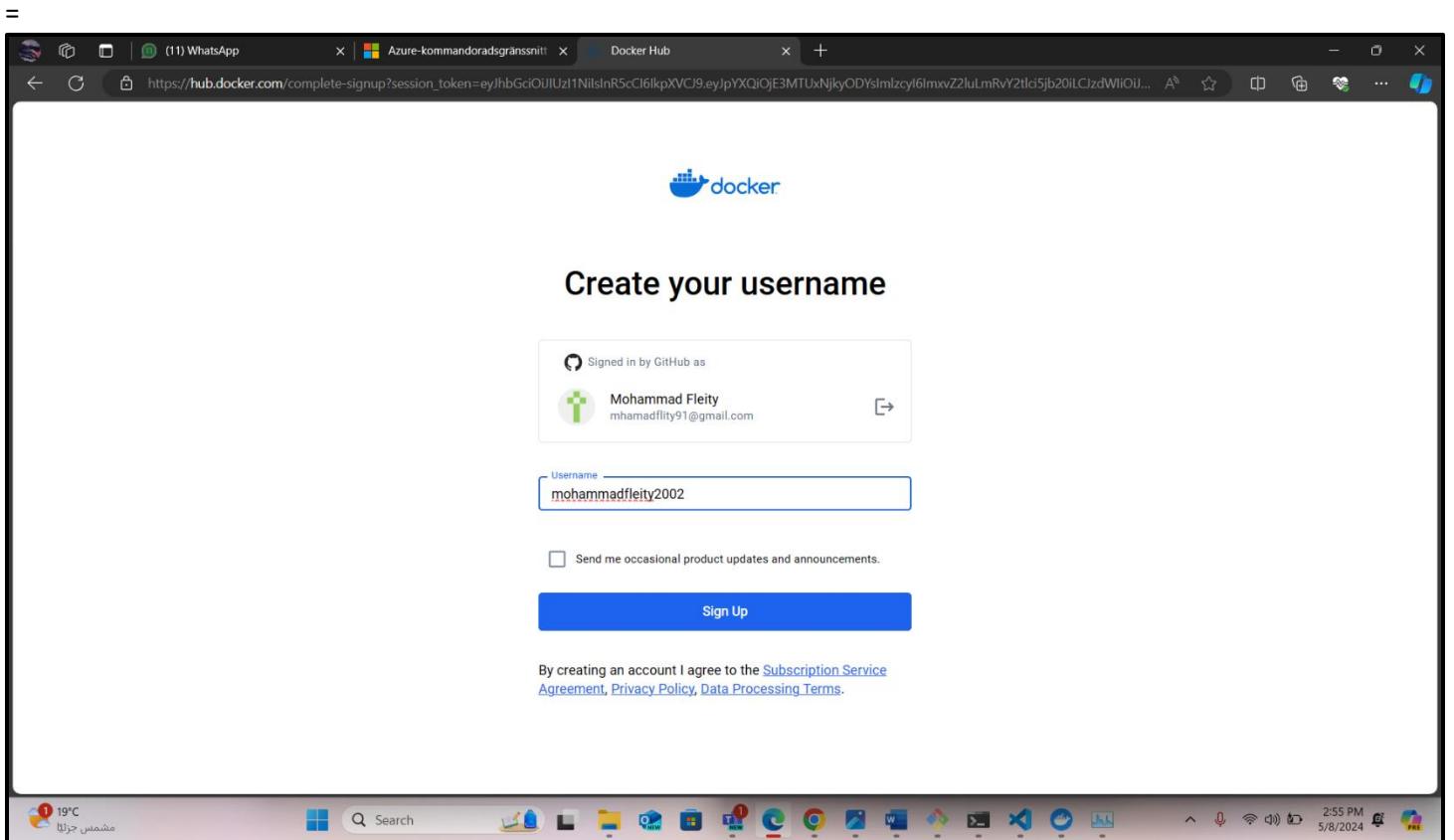
```
1 ##[error]No hosted parallelism has been purchased or granted. To request a free parallelism grant, please fill out the following form
2 Pool: Azure_Pipelines
3 Image: ubuntu-latest
4 Started: Just now
5 Duration: 28s
6
7 ► Job preparation parameters
```

The browser window includes a tab for "Pipelines - Run 20240507.1 log", a search bar, and a taskbar at the bottom showing various application icons.

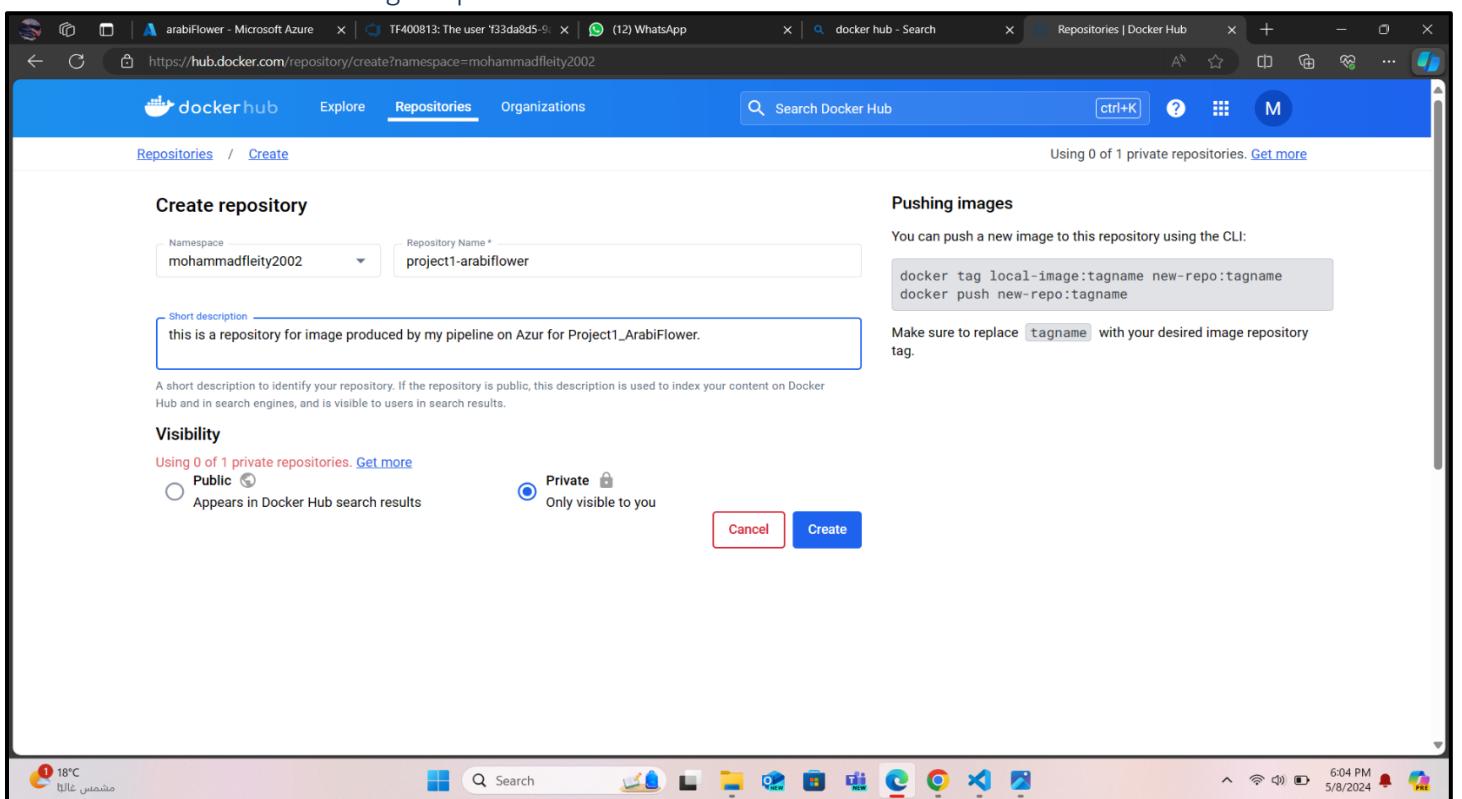
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b. Creating account on docker hub to store images:



i. Creating a repo on docker hub



The screenshot shows a Docker Hub repository page for `mohammadfleity2002/project1-arabiflower`. The repository was created less than a minute ago and is described as a pipeline image for Project1\_ArabiFlower. It has no tags or categories. The Docker commands section shows the command to push a new tag. The Tags section indicates the repository is empty. The Automated Builds section shows a manual pushing note and an Upgrade button. The Repository overview section is also present.

## ii. Adding a DOCKERFILE to the repository

The screenshot shows Visual Studio Code with the Dockerfile open in the editor. The terminal tab shows the following git commands being run:

```
PS D:\web\ArabiFlower\Project1_ArabiFlower> git status
On branch main
Your branch is up to date with 'origin/main'.
```

Changes not staged for commit:

```
(use "git add <file>..." to update what will be committed)
(use "git restore <file>..." to discard changes in working directory)
  modified:   Arabi.html
  modified:   Dockerfile
```

no changes added to commit (use "git add" and/or "git commit -a")

```
PS D:\web\ArabiFlower\Project1_ArabiFlower> git add .
PS D:\web\ArabiFlower\Project1_ArabiFlower> git commit -m "testing the docker images"
[main eaa1739] testing the docker images
 2 files changed, 1 insertion(+), 43 deletions(-)
```

```
PS D:\web\ArabiFlower\Project1_ArabiFlower> git push
Enumerating objects: 7, done.
Counting objects: 100% (7/7), done.
Delta compression using up to 12 threads
Compressing objects: 100% (4/4), done.
Writing objects: 100% (4/4), 409 bytes | 409.00 KiB/s, done.
Total 4 (delta 3), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (3/3), completed with 3 local objects.
```

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c. Creating a service connection to the docker hub:

**PS:** This service connection was first created with the intention to use Azure Container Registry instead of the docker hub then it was edited later as shown below.

The screenshot shows the 'Service connections' page in the Azure DevOps interface. On the left, there's a sidebar with project settings like General, Boards, Pipelines, and Service connections. The main area shows a list of existing service connections, including one named 'Mohammad-Fleity2002'. A large modal window titled 'New Azure service connection' is open on the right. It specifies the scope level as 'Subscription' and the subscription as 'Azure subscription 1 (ed1420be-5f0a-49b0-ba3d-6123115bc2...)'. The service connection name is set to 'azure-container-connection'. There's a 'Description (optional)' field which is currently empty. Under 'Security', there's a checked checkbox for 'Grant access permission to all pipelines'. Below the modal, a status message says 'Setting up connection...' with a progress bar. The system tray at the bottom shows the date as 5/7/2024 and the time as 11:02 AM.

This screenshot shows the continuation of the service connection creation process. The modal now displays the 'Authentication method' section. It lists several options: 'Workload Identity federation (automatic) - Recommended' (selected), 'Workload Identity federation (manual)', 'Service principal (automatic)', 'Service principal (manual)', 'Managed identity', and 'Publish Profile'. At the bottom of the modal, there's a link 'Need help choosing a connection type?' and two buttons: 'Back' and 'Next'. The system tray at the bottom shows the date as 5/7/2024 and the time as 10:58 AM.

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The screenshot shows the Azure DevOps interface for managing service connections. On the left, a sidebar lists project settings like General, Pipelines, and Boards. The main area displays the 'ArabiFlower-Docker' service connection details. The 'Edit service connection' dialog is open, showing the configuration for a Docker Registry. The 'Registry type' is set to 'Docker Hub'. The 'Docker Registry' field contains 'https://index.docker.io/v1/'. The 'Docker ID' is 'mohammadfleity2002'. The 'Docker Password' field contains a masked password. The 'Email (optional)' field contains 'mhamadfleity91@gmail.com'. A 'Verify' button is present. Below the dialog, the 'Service connection name' is 'ArabiFlower-Docker' and the 'Description (optional)' is 'connection service for docker using ACR.' The status bar at the bottom shows the date and time as 5/8/2024 6:13 PM.

This screenshot is similar to the one above, but the 'Edit service connection' dialog shows a different configuration. The 'Registry type' is now 'Docker Registry using basic authentication'. The 'Docker ID' is 'mohammadfleity2002' and the 'Docker Password' is also masked. The 'Email (optional)' field remains 'mhamadfleity91@gmail.com'. The 'Verify' button is now green with the message 'Verification Succeeded'. The rest of the interface and status bar are identical to the first screenshot.

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#### d. Configuring the pipeline:

PS: Since this a static website css/html/js no test or building steps needed. So we're just printing "Building App" and "Run Tests" instead.

The screenshot shows the Azure DevOps Pipelines configuration page for the 'Project1\_ArabiFlower' project. The left sidebar shows navigation options like Overview, Boards, Repos, Pipelines (selected), Environments, Library, Test Plans, and Artifacts. The main area displays the 'azure-pipelines.yml' file content:

```
trigger:
- main

pool:
  vmImage: ubuntu-latest

steps:
- script: |
  # No build steps needed for a simple HTML/CSS/JS application
  echo "Building the application"
  displayName: 'Building App'

- script: |
  # No tests needed for a simple HTML/CSS/JS application
  echo "Testing the application."
  displayName: 'Run Tests'

  task: Docker@2
  displayName: 'Build Docker Image'
  inputs:
    containerRegistry: 'ArabiFlower-Docker' #service connection name
    repository: 'mohammadfleity2002/project1-arabiflower'
    command: 'build'
    Dockerfile: '**/Dockerfile' # Path to Dockerfile
```

The right side of the screen lists various tasks available for the pipeline, such as .NET Core, Android signing, Ant, App Center distribute, App Center test, Archive files, ARM template deployment, and Azure App Service deploy.

A validation dialog box titled 'Validate and save' is open. It contains fields for 'Validation' (Pipeline is valid) and 'Commit message' (Update azure-pipelines.yml for Azure Pipelines). An optional 'Optional extended description' field contains the text 'moving from ACR (Azure Container Registry) to Docker Hub'. At the bottom, there are two radio buttons: 'Commit directly to the main branch' (selected) and 'Create a new branch for this commit'. The 'Save' button is visible at the bottom right.

e. TESTING:

i. Push an update:

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

- File Explorer:** Shows files like Dockerfile, azure-pipelines.yml, and Arabi.html.
- Editor:** Displays a Dockerfile with the following content:

```
1 # Use a lightweight web server image as base
2 FROM nginx:alpine
3 # Copy the static files of your web application to the web server's root directory
4 COPY . /usr/share/nginx/html
5 EXPOSE 80
6 # test
```
- Terminal:** Shows the command history for a Git session:

```
PS D:\web\ArabiFlower\Project1_ArabiFlower> git status
On branch main
Your branch is up to date with 'origin/main'.

Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
    (use "git restore <file>..." to discard changes in working directory)
      modified:  Arabi.html
      modified:  Dockerfile

no changes added to commit (use "git add" and/or "git commit -a")
PS D:\web\ArabiFlower\Project1_ArabiFlower> git add .
PS D:\web\ArabiFlower\Project1_ArabiFlower> git commit -m "testing the docker images"
[main eaa1739] testing the docker images
 2 files changed, 1 insertion(+), 43 deletions(-)
PS D:\web\ArabiFlower\Project1_ArabiFlower> git push
Enumerating objects: 7, done.
Counting objects: 100% (7/7), done.
Delta compression using up to 12 threads
Compressing objects: 100% (4/4), done.
Writing objects: 100% (4/4), 409 bytes | 409.00 KiB/s, done.
Total 4 (delta 3), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (3/3), completed with 3 local objects.
```
- Bottom Status Bar:** Shows system information like temperature (18°C), battery level, and system icons.

ii. Checking the pipeline

The screenshot shows the Azure DevOps Pipelines interface with the following details:

- Left Sidebar:** Shows Project1\_ArabiFlower and Pipelines selected.
- Header:** Pipelines - Runs for Mohammad... and dev.azure.com/guittamoubarak/Project1\_ArabiFlower/\_build?definitionId=3&a=summary
- Content Area:** Pipeline name: Mohammad-Fleity2002.Project1\_ArabiFlower
- Runs Tab:** Shows a list of recent pipeline runs:

| Description   | Stages         | Time Ago         |
|---|----------------|------------------|
| #20240508.7 • testing the docker images                               | 1 green circle | 3m ago<br>32s    |
| #20240508.6 • Update azure-pipelines.yml for Azure Pipelines          | 1 green circle | 8m ago<br>31s    |
| #20240508.5 • Update azure-pipelines.yml for Azure Pipelines          | 1 green circle | 8m ago<br>23s    |
| #20240508.4 • update the Dockerfile                                   | 1 green circle | 3h ago<br>28s    |
| #20240508.3 • Merge branch 'main' of https://github.com/Mohammad-F... | 1 green circle | 4h ago<br>21s    |
| #20240508.2 • Update azure-pipelines.yml for Azure Pipelines          | 1 red circle   | 7h ago<br>26s    |
| #20240508.1 • Update azure-pipelines.yml for Azure Pipelines          | 1 red circle   | 9h ago<br><1s    |
| #20240507.6 • Update azure-pipelines.yml for Azure Pipelines          | 1 red circle   | Yesterday<br><1s |

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### iii. Checking the repos on docker hub:

The screenshot shows a Microsoft Edge browser window with multiple tabs open. The active tab is 'hub.docker.com/repository/docker/mohammadfleity2002/project1-arabiflower/general'. The page displays information about a Docker repository named 'mohammadfleity2002/project1-arabiflower'. It shows 3 tags: 14, 13, and 12, all of which are images and were pushed 3, 7, and 8 minutes ago respectively. There is a 'Docker commands' section with a command to push a new tag. A 'Tags' section lists the three tags. An 'Automated Builds' section is present but inactive. The bottom of the page shows a 'Repository overview' section.

## 4. Continuous Deployment (CD)

### a. Creating a WebApp resource to host the application

PS: The web app load from the latest image in the docker hub repository.

The screenshot shows a Microsoft Edge browser window with the Microsoft Azure portal open at 'portal.azure.com/#create/Microsoft.WebSite'. The user is creating a new 'Create Web App' resource. The configuration includes:

- Name:** Arabi-Flower-Project1
- Publish:** Container
- Image:Tag:** index.docker.io/project1-arabiflower:latest
- Server URL:** https://index.docker.io
- App Service Plan (New):** ASP-Project1ArabiFlowerResourceGrou-991e
- Operating System:** Linux
- Region:** East US
- SKU:** Basic
- Size:** Small
- ACU:** 100 total ACU
- Memory:** 1.75 GB memory
- Monitoring:** Application Insights is set to 'Not enabled'.
- Deployment:** Basic authentication is 'Disabled'.

At the bottom, there are buttons for 'Validating...', '< Previous' and 'Next >', and a link to 'Download a template for automation'.

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The screenshot shows the Microsoft Azure Web App Overview page for 'Microsoft.Web-WebApp-Portal-0b72ce2b-8d9f'. The deployment status is marked as 'complete' with a green checkmark. Deployment details include the name 'Microsoft.Web-WebApp-Portal-0b72ce2b-8d9f', subscription 'Azure subscription 1', and resource group 'Project1\_ArabiFlower\_ResourceGroup'. The start time was 5/9/2024, 11:23:14 AM, and the correlation ID is 81a77e02-cf4e-4680-b16e-551f0309e624. A 'Go to resource' button is present. To the right, there are links for 'Cost Management', 'Microsoft Defender for Cloud', 'Free Microsoft tutorials', and 'Work with an expert'. The bottom of the screen shows a Windows taskbar with various icons and the date/time as 11:24 AM, 5/9/2024.

### b. Creating Pipeline to automate CD:

**PS:** The Project was done from 07/05/2024->09/05/2024 but the cd Pipeline Screenshots was missing this is a replacement taken on 30/05/2024 the date of creating this report.

The screenshot shows the Visual Studio Code interface with the 'Project1\_ArabiFlower' workspace open. The 'EXPLORER' sidebar shows files like Dockerfile, azure-pipelines...., index.html, and azure-pipelines.... In the main editor area, the 'azure-pipelines-1.yml' file is displayed, containing the following YAML code:

```
trigger:
- main # trigger the pipeline on main update.

pool:
  vmImage: 'ubuntu-latest'

steps:
- task: Docker@2
  displayName: 'Login to Docker Hub'
  inputs:
    command: login
    containerRegistry: 'ArabiFlower-Docker' # Docker Hub service connection
    username: $(mohammadfleity2002)
    password: $(MohammadDockerPassword2002)

- task: AzureCLI@2
  displayName: 'Deploy to Azure App Service'
  inputs:
    azureSubscription: 'azure-container-connection' # Specify your Azure service connection name
    scriptType: 'bash'
    scriptLocation: 'inlineScript'
    inlineScript: |
      az webapp config container set --name Arabi-Flower-Project1 --resource-group Project1_ArabiFlower_ResourceGroup
```

this pipeline trigger on commit on the main branch and reload the web app from the latest image on docker hub.

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The screenshot shows the Azure DevOps Pipelines interface for the Project1\_ArabiFlower project. The left sidebar navigation bar includes links for Overview, Boards, Repos, Pipelines (which is selected), Environments, Library, Test Plans, and Artifacts. The main content area displays a table titled "Recently run pipelines". The table has columns for "Pipeline", "Last run", and "Duration". Two rows are listed:

| Pipeline                                | Last run   |                   |
|---|--|-------------------|
| Mohammad-Fleity2002.Project1_ArabiFl... | #20240509.2 • Update azure-pipelines-1.yml for Azure Pipelines<br>Individual CI for main | Just now<br>1m 2s |
| Mohammad-Fleity2002.Project1_ArabiFl... | #20240509.2 • Update azure-pipelines-1.yml for Azure Pipelines<br>Individual CI for main | 2m ago<br>21s     |

This screenshot is identical to the one above, showing the Azure DevOps Pipelines interface for the Project1\_ArabiFlower project. The left sidebar navigation bar includes links for Overview, Boards, Repos, Pipelines (selected), Environments, Library, Test Plans, and Artifacts. The main content area displays a table titled "Recently run pipelines". The table has columns for "Pipeline", "Last run", and "Duration". Two rows are listed:

| Pipeline                                | Last run   |                   |
|---|--|-------------------|
| Mohammad-Fleity2002.Project1_ArabiFl... | #20240509.2 • Update azure-pipelines-1.yml for Azure Pipelines<br>Individual CI for main | Just now<br>1m 2s |
| Mohammad-Fleity2002.Project1_ArabiFl... | #20240509.2 • Update azure-pipelines-1.yml for Azure Pipelines<br>Individual CI for main | 2m ago<br>21s     |

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The screenshot shows the Microsoft Azure Activity log interface for the 'Arabi-Flower-Project1' Web App. The left sidebar contains navigation links for Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Microsoft Defender for Cloud, Events (preview), Log stream, Deployment, Performance, Settings, and Authentication. The main area displays a table of activity logs with columns: Operation name, Status, Time, Time stamp, Subscription, and Event initiated by. The table lists 26 items, mostly succeeded updates to web site config, with one entry for 'Web Apps List Secrets From Snapshot'. The status bar at the bottom shows the date as 5/9/2024 and the time as 3:23 PM.

### c. TESTING:

The screenshot shows a Visual Studio Code (VS Code) interface with the title 'Project1\_Arabiflower'. The Explorer sidebar shows files like Dockerfile, azure-pipelines.yml, index.html, game.html, css, img, js, and README.md. The main editor window shows the content of index.html. The bottom terminal tab shows a PowerShell session with the following commands and output:

```
PS D:\web\Arabiflower\Project1_Arabiflower> git add .
PS D:\web\Arabiflower\Project1_Arabiflower> git commit -m "testing cd"
On branch main
Your branch is ahead of 'origin/main' by 2 commits.
  (use "git push" to publish your local commits)

nothing to commit, working tree clean
PS D:\web\Arabiflower\Project1_Arabiflower> git push
Enumerating objects: 9, done.
Counting objects: 100% (8/8), done.
Delta compression using up to 12 threads
Compressing objects: 100% (5/5), done.
Writing objects: 100% (5/5), 647 bytes | 647.00 KiB/s, done.
Total 5 (delta 3), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (3/3), completed with 2 local objects.
To https://github.com/Mohammad-Fleity2002/Project1_Arabiflower.git
  53ecfc0..9395eec  main -> main
PS D:\web\Arabiflower\Project1_Arabiflower>
```

The status bar at the bottom shows the date as 5/9/2024 and the time as 3:23 PM.

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Both Pipelines were runed successfully.

The screenshot shows the Azure DevOps Pipelines page for the 'Project1\_ArabiFlower' project. The left sidebar includes options like Overview, Boards, Repos, Pipelines (selected), Environments, Library, Test Plans, and Artifacts. The main area displays a list of pipelines under 'All pipelines'. Two runs are listed:

- Mohammad-Fleity2002.Project1\_ArabiFlower (1) #20240509.3 • Merge branch 'main' of https://github.com/Mohammad-Fleity2002/Project1\_ArabiFlower
- Mohammad-Fleity2002.Project1\_ArabiFlower #20240509.3 • Merge branch 'main' of https://github.com/Mohammad-Fleity2002/Project1\_ArabiFlower

At the bottom right of the main area, there are 'New pipeline' and 'New folder' buttons. The system tray at the bottom shows it's 3:38 PM on 5/9/2024.

The screenshot shows the 'Runs for Mohammad-Fleity2002.Project1\_ArabiFlower (1)' page. The left sidebar is identical to the previous screenshot. The main area shows a table of pipeline runs:

| Description  | Stages          | Time             |
|--|-----------------|------------------|
| #20240509.3 • Merge branch 'main' of https://github.com/Mohammad-Fleity2002/Project1_ArabiFlower | Success (00:57) | 3m ago<br>59s    |
| #20240509.2 • Update azure-pipelines-1.yml for Azure Pipelines                                   | Success (00:57) | 20m ago<br>1m 2s |
| #20240509.1 • update arabic.html to index.html   | Failure (00:00) | 4h ago<br>12s    |
| #20240508.11 • Update azure-pipelines-1.yml for Azure Pipelines                                  | Failure (00:00) | Yesterday<br>11s |
| #20240508.10 • Update azure-pipelines-1.yml for Azure Pipelines                                  | Failure (00:00) | Yesterday<br>12s |
| #20240508.9 • Update azure-pipelines-1.yml for Azure Pipelines                                   | Failure (00:00) | Yesterday<br>21s |
| #20240508.8 • Update azure-pipelines-1.yml for Azure Pipelines                                   | Failure (00:00) | Yesterday<br>15s |
| #20240508.7 • Update azure-pipelines-1.yml for Azure Pipelines                                   | Failure (00:00) | Yesterday<br>28s |

The system tray at the bottom shows it's 3:39 PM on 5/9/2024.

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The screenshot shows the Azure DevOps interface for a project named 'Project1\_ArabiFlower'. On the left, a sidebar lists various project management and development tools like Overview, Boards, Repos, Pipelines, Environments, Library, Test Plans, and Artifacts. The main area displays a build log for 'Jobs in run #20240509.3' under 'Mohammad-Fleity2002.Project1\_ArabiFlower (1)'. The log details the execution of a 'Job' with several steps: Initialize job (1s), Checkout Mohammad-Fleity2002 (2s), Login to Docker Hub (<1s), Deploy to Azure App Service (44s), Post-job: Checkout Mohammad-Fleity2002 (1s), and Finalize Job (<1s). The log also includes configuration details such as Pool: Azure\_Pipelines, Image: ubuntu-latest, Agent: Hosted Agent, Started: Today at 3:37 PM, Duration: 50s, and a note about Job preparation parameters.

Deployment was done successfully.

The screenshot shows the Microsoft Azure Activity Log for the 'Arabi-Flower-Project1' Web App. The left sidebar provides navigation links for Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Microsoft Defender for Cloud, Events (preview), Log stream, Deployment slots, Deployment Center, Performance, Load Testing (Preview), Settings, Environment variables, Configuration, and Authentication. The main pane displays activity logs for the last 6 hours, filtered by Management Group: None, Subscription: Azure subscription 1, Event severity: All, Resource group: Project1\_ArabiFlower\_ResourceGroup, and Resource: Arabi-Flower-Project1. The log table lists 30 items, showing operations like 'Update web sites config' and 'UpdateWebSite' with their status (Succeeded or Started), time, timestamp, subscription, and the user who initiated the event. A note in the log indicates that users can search for performance, diagnostics, health logs, and more using Log Analytics.

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Thank You for Your Time.