Final Milestone Report

Group 2

3 December 2018

Contents

1 Executive Summary

1.1 Description

Our project, WorkHub, is a platform that allows clients to ask for freelance work on countless categories, aiming to cover as many job types as possible. Once a user signs up, they're able to create jobs as a client, or take on jobs as a freelancer as they wish.

1.2 Project Status

For the final presentation, we have succeeded in making many of our plans come to fruition, finalizing many of the concepts introduced in the previous milestones, and introducing plenty more.

Jobs, being the main purpose of the site, are completely functional from start to finish. Jobs can be created, be bid on, be accepted and assigned to a freelancer (or have their bids be rejected). After a job has been accepted, the freelancer that took the job can deliver milestones to the client, providing text, photos or screenshots if necessary. The client can also request status reports early. A job can also be brought to completion, letting the client complete their payment to the freelancer. It is possible to object to the completion of a job if suspicious arise.

Our file storage system works properly, being able to store images and various files that can be uploaded from our website.

Categories have also been fully integrated into jobs, allowing clients to pick which categories their job belongs to. This ties in with the search feature, which supports semantic search alongside regular keyword searching, both of which take categories into account when showing results. Additionally, freelancers may pick categories as preferences, showing jobs related to those categories first.

It is possible to add annotations to any image or text on the website. Image-based annotations are not supported, but text-based ones can be inserted anywhere when needed.

1.3 Lessons Learned

After finishing this arduous journey, we have learned many things. The most important one being that, a large-scale project like what we have done takes more than just a night's worth of coding. The planning phase of the project is actually much more important and time-consuming than the implementation itself. It's possible to encounter many inconveniences along the way, which is why it's important to have the blueprints of a plan completed very early.

We also learned that it is sometimes a requirement to be flexible as needed. Some of us had no prior experience in the tools we used, so we had to adapt very quickly in order to provide an adequate product. This was not an entertaining process in the slightest.

Of course, something else we have improved upon, that commonly gets overlooked, is working as a team. We had to help each other, give advice, cover for somebody when they were unavailable, and generally be more supportive of each other. It's a factor that may not be very noticable on the field, but it's vital nonetheless.

2 Deliverables

All three groups are following each other closely in terms of deliverables.

1. Sign up : Works properly, user is saved to database.
2. Log in : Works properly, also generates a session token for the user.
3. Log out : Same as login, destroys the existing session using the token.
4. Get profile information : Works the same on both front-end and Android.
5. Job creation : Works properly, jobs are added to the database, and are displated on the site. Additionally, a job-category relation is added for every category that the job contains.
6. Job display : Works properly, caters to the user's past experiences.
7. Job bidding : Works properly, bid is listed on the site, and is saved in the database.
8. Job deletion : Implemented in back-end.
9. Bid acceptance : Works properly, job is set as closed, and the bid is set as accepted.
10. Bid rejection : Job status doesn't change and bid status is set to 'rejected'
11. Notifications : Implemented in back-end. A notification is automatically sent for bid acception and rejection.
12. Annotations : Work properly. No image support.
13. Search : Works properly, takes headers and description into account.
14. Semantic Search : Works properly, connects searched words with jobs based on their closeness.

3 Each Team Member's Work

Team Member	Job	Description
Ali Torğutalp (Back-End)	Back-End models and overall database system setup, Implementations	Bidding system migrations, creation, updating, acception, rejection. Job milestone request and milestone creation. Job completion and payment system migrations and flows. Freelancer interested fields. Updating database model.
Bartu İnce (Back-End)	Feature Implementation	Adding job related functionalities (job creation and details, category association), user related functionalities (sign-up and profile info), migration of some database models, freelancer job recommendation, server hosting, image storage hosting, general bugfixes.
Nilsu Pamuk (Back-End)	Feature Implementation	Implementing sign in feature. Creating job bidding system migrations. Adding bid listing and job deletion features.
Ergün Erdoğmuş (Front-End)	Integration Handling, Server Management, Design	Integrated Now for deploying Pull Requests and CircleCI integration for CI/CD. Handled AWS server configuration and Continuous Deployment pipeline. Also, integrated Prettier (Code formatter) and added a pre-commit hook for formatting committed code. Created initial Login page. Completed homepage redesign, added job detail page with job biddings listed. Added annotation feature. Implemented semantic search and filtering feature.
Huriye Özdemir (Front-End)	Feature implementation	Adding user preferences on profile page, make dynamic content for profile page information
Şükrü Can Gültop (Front-End)	Design sign-up, and connecting login and signup to backend, create bid page. Listing past and active jobs	Sign up design before we changed UI kit, and connecting those two pages to backend and validations of fields.Design and implement fields and connection of create bid page. Listing past and active jobs of both freelancer and client users.

Team Member	Job	Description
Ahmet Ozan Tatlısu (Android)	Creating update job functionality for freelancers.Adding S3 image integration to android part	Implementing the update job functionality and solving bugs derive from job model.Server Calls for upload an image for a profile image and image of the job. Also, editing fragments and corresponding xml file to show image files
Zeki Tel (Android)	Implementation of create job, list jobs, list bids and create bid functionalities.Implementation adding and removing interest for client and freelancer	Creating functions of create job, list jobs, lists bids and create bid , connect them to back-end and design relevant pages.Add,update and remove interest Server Calls and designing relevant pages adding,editing interests in the profile edit page

4 Requirements

4.1 User Requirements

Guests:

1. Guests shall see the landing page with search bar included.
2. Guests shall be able to use the search functionality for public freelancer profiles and specific projects.
3. Guests shall be able to see the projects' only headlines, brief descriptions, base price of the project and they shall not be able to see any bidding information.
4. Guests shall be able to navigate with direct link to a public freelancer profile, a specific search page and a project page.
5. Guests shall be able to navigate to sign-up view anytime.
6. Guests shall be able to register with name, surname, email and password.
7. Guests shall receive an email upon register to verify their email address.
8. Guests shall not be able to login to app with a non verified email.
9. Guests shall be able to login to app with email and password.

Users (who signed up)

Freelancers

1. Freelancers shall be able to update their informations at any time (name, surname, profile photo, bio, skills, experience, IBAN number to receive payments) and login credentials (email, password).

2. Freelancers shall be able to annotate the texts inside their skills, experience, bio fields while adding or editing them.

3. Freelancers' public information shall contain skills, experience, bio, description, jobs taken on this site, rating, reviews and photo.

Jobs (as Freelancers)

1. Freelancers shall set a preference about their skills to see the type of job that they desire the most in the job feed in the home page.

2. Freelancers shall see the projects page and detailed description of projects.

3. Freelancers shall be able to bid on a project.

4. Freelancers shall be able to accept a job until a specified amount of time that is determined by client for freelancer to approve the accepted job is passed.

5. Freelancers shall be able to drop (sign off) a project.

6. Freelancers shall be able to search for clients that have posted jobs including or outside of their skill.

7. Freelancers shall be able to receive their payment after they have completed their job.

8. Freelancers shall be able to see its' active jobs.

Clients

1. Clients shall be able to update their informations at any time (name, surname, profile photo, bio, payment information) and login credentials (email, password).

2. Clients shall be able to annotate the texts inside their bio field while adding or editing them.

3. Clients' public information shall contain bio, jobs given on this site, rating, reviews and photo.

Jobs (as Clients)

1. Clients shall be able to create a project for freelancers to bid on.

2. Clients shall be able to add headline, description, base bidding price, image, video and due date to a project while creating it.

3. Clients shall be able to add annotations to headline, description, image and video while creating the project.
4. Clients shall be able to search projects, other clients and freelancers.
5. Clients shall be able to select if their job is visible to other clients while creating the project.
6. Clients shall be able to cancel a job when there are no freelancers that have taken the job even if there are biddings.
7. Clients shall be able to offer the job to a freelancer that is bidded on the project.
8. Clients shall be able to offer the job to a freelancer that bidded on the project even if the bidding period is not over.
9. Clients shall be able to object to a project and report it to platform owners while it is currently being worked on by a freelancer.
10. Clients shall be able to edit a project's headinline, description, image and video until bidding period is over.
11. Clients shall be able to make a payment, using the site as a middleman.
12. Clients shall be able to see its' created projects and its' active jobs.

Communication

1. Freelancers and clients shall be able to communicate with each other with a direct messaging system.

Rating and Reviews

1. Freelancers shall be able to leave a rating and a review about their client when; after the job is finished, after the job is dropped off by freelancer, after the job is cancelled by client.
2. Clients shall be able to leave a rating and a review about freelancer when; after the job is finished, after the job is dropped off by freelancer and after the job is cancelled by client.
3. The search mechanism shall prioritise freelancers that have received better overall ratings.

All Users

1. All Users shall be able to flag inappropriate use of the site and breaching the code of conduct.
2. Upon logging in, all users shall be redirected to their main page, showing their currently active jobs, followed by jobs that are recommended to them.

4.2 System Requirements

Recommendation Mechanism

1. The system shall provide a recommendation mechanism for clients that offers freelancers according to their past job requests.
2. The system shall provide a recommendation mechanism for freelancers that offers jobs according to their profile and their past searches.

Messaging Mechanism

1. There shall be a messaging mechanism to maintain the communication between freelancers and clients during processes.
2. Both parties shall be able to exchange texts.
3. Phone number and email sharing shall be forbidden.

Complaint Mechanism

1. There shall be a flagging system to notify administrators of misbehavior.
2. There shall be a system for reporting complaints with a checkbox with possible complaints and an ”other” box.

Bidding Mechanism

1. Other bids shall be visible to bidders.
2. All bids shall be invisible to guests.

Search Mechanism

1. The system shall provide support for user-defined tags that allows jobs to be filtered.
2. The system shall contain an advanced search mechanism that lets the user set restraints for creator name, date, topic and budget.

Notification Mechanism

1. The system shall notify clients when their job has received a new bid.
2. The system shall notify both types of users when they receive a direct message.
3. The system shall notify a freelancer when one of their current jobs had its description changed by its client.
4. The system shall notify a freelancer when they win a bidding.
5. The system shall notify a freelancer about a change in the job description.

4.3 Non-functional Requirements

Security

1. Users shall register with valid information.
2. The system shall support the ”Secure HyperText Transfer Protocol”.
3. The database that archives user passwords shall be hashed and encrypted.
4. Users shall be forced to have a complex password that is least 8 characters long.
5. The system shall have 3D-Secure Payment for payment processes.
6. The product shall notify customers of changes to its information policy.

Reliability

1. In case of a downtime, the system shall recover in under 48 hours.
2. Data shall be backed up regularly to minimize loss of information.

Performance

1. The system shall respond to requests within 5 seconds to avoid interruptions.
2. The system should be able to handle at least 250 online users at any time.
3. The system shall be able to process 70 payment transactions per second.

Usability

1. The website shall be fully available in English.

Availability

1. The system shall meet or exceed 99% uptime.
2. Less than 20 seconds shall be needed to restart the system after a failure.
3. The system shall be able to support Chrome browser version 60 and Firefox 57(”quantum”) and their newer versions.
4. The system shall have an Android application which should work at Android 6.0 and newer versions.

Annotation

1. The W3C Web Annotation Data Model shall be used to annotate items which are job descriptions, images, messages.

Flexibility

1. The system shall be designed in a modular manner so that new features could be introduced easily.
2. The system shall be designed in a readable manner so that modifications can be done easily.
3. The system shall be designed to add new features easily.

Accessibility

1. System shall include accessibility components that encourage an inclusive user base by enabling people with visual impairments, hearing loss, limited dexterity, and other disabilities to access.

5 Design

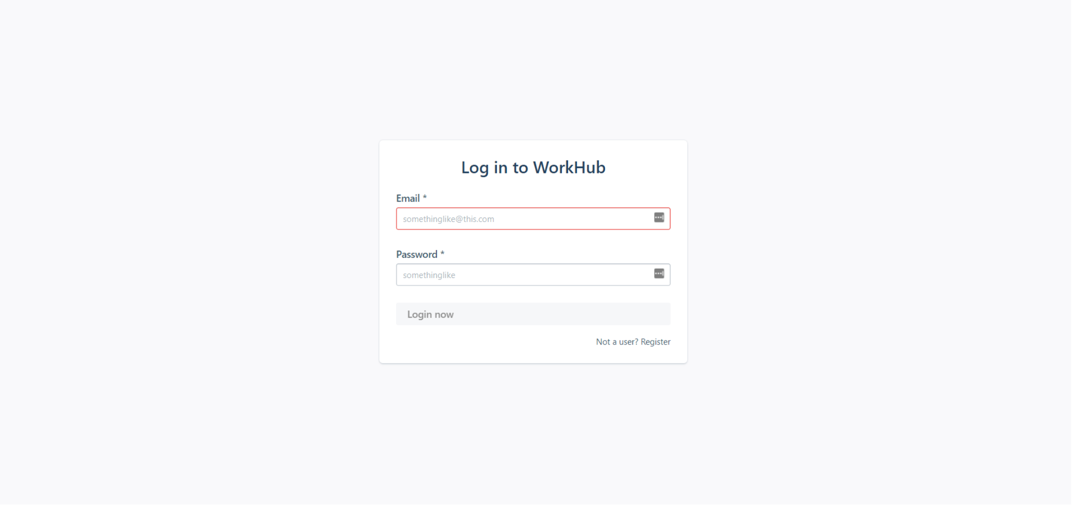
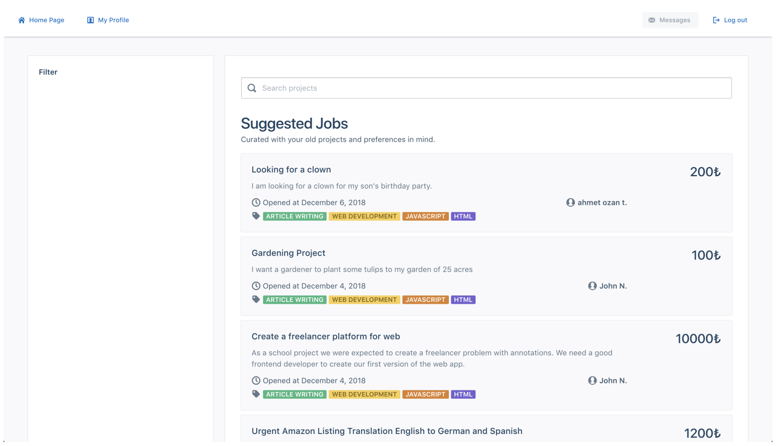


Figure 1: Front Page as a guest



Suggested Jobs

Curated with your old projects and preferences in mind.

Looking for a clown 200₺

I am looking for a clown for my son's birthday party.

Opened at December 6, 2018 ahmet ozan t.

ARTICLE WRITING WEB DEVELOPMENT JAVASCRIPT HTML

Gardening Project 100₺

I want a gardener to plant some tulips to my garden of 25 acres

Opened at December 4, 2018 John N.

ARTICLE WRITING WEB DEVELOPMENT JAVASCRIPT HTML

Create a freelancer platform for web 10000₺

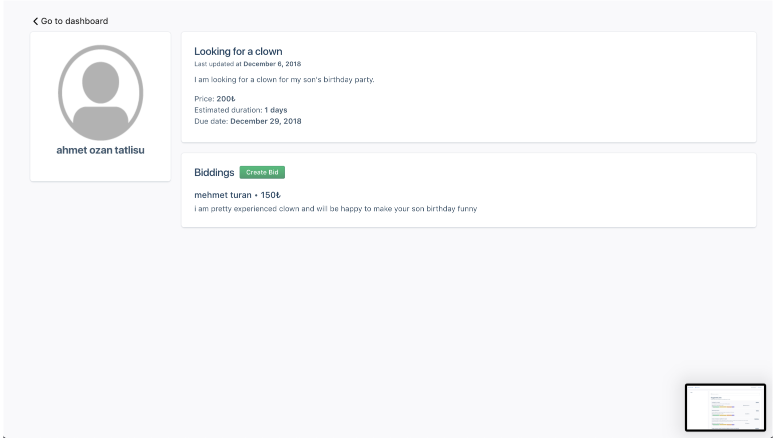
As a school project we were expected to create a freelancer problem with annotations. We need a good frontend developer to create our first version of the web app.

Opened at December 4, 2018 John N.

ARTICLE WRITING WEB DEVELOPMENT JAVASCRIPT HTML

Urgent Amazon Listing Translation English to German and Spanish 1200₺

Figure 2: Home Page, with jobs visible



ahmet ozan tatlisu

Looking for a clown

Last updated at **December 6, 2018**

I am looking for a clown for my son's birthday party.

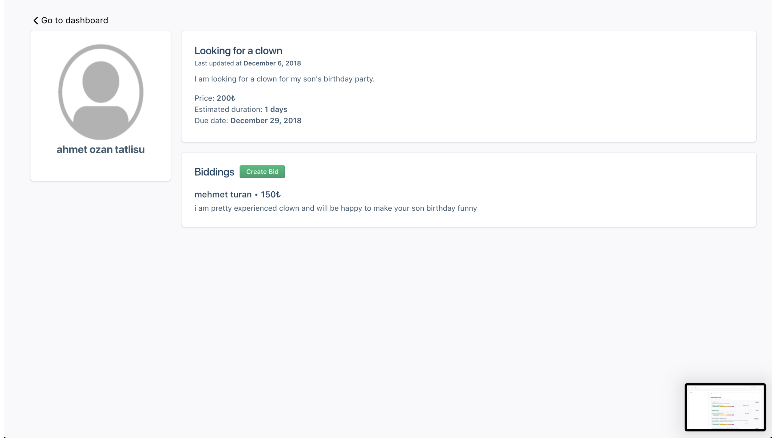
Price: **200₺**
Estimated duration: **1 days**
Due date: **December 29, 2018**

Biddings

mehmet turan • 150₺

i am pretty experienced clown and will be happy to make your son birthday funny

Figure 3: Job detail page



ahmet ozan tatlisu

Looking for a clown

Last updated at **December 6, 2018**

I am looking for a clown for my son's birthday party.

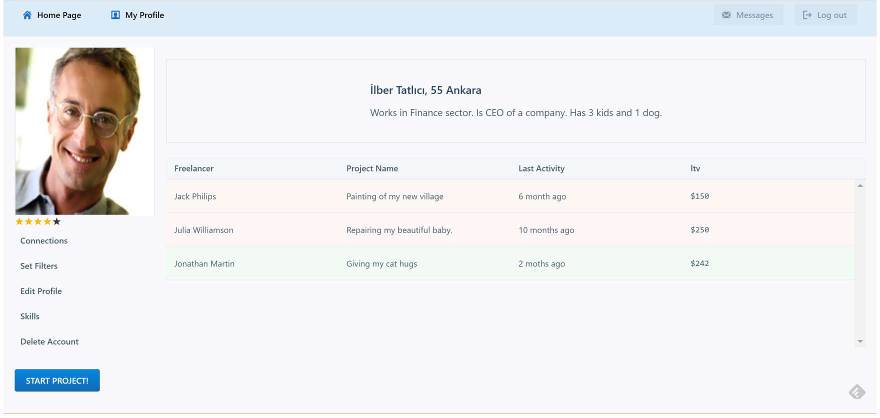
Price: **200₺**
Estimated duration: **1 days**
Due date: **December 29, 2018**

Biddings

mehmet turan • 150₺

i am pretty experienced clown and will be happy to make your son birthday funny

Figure 4: Job bidding dialog

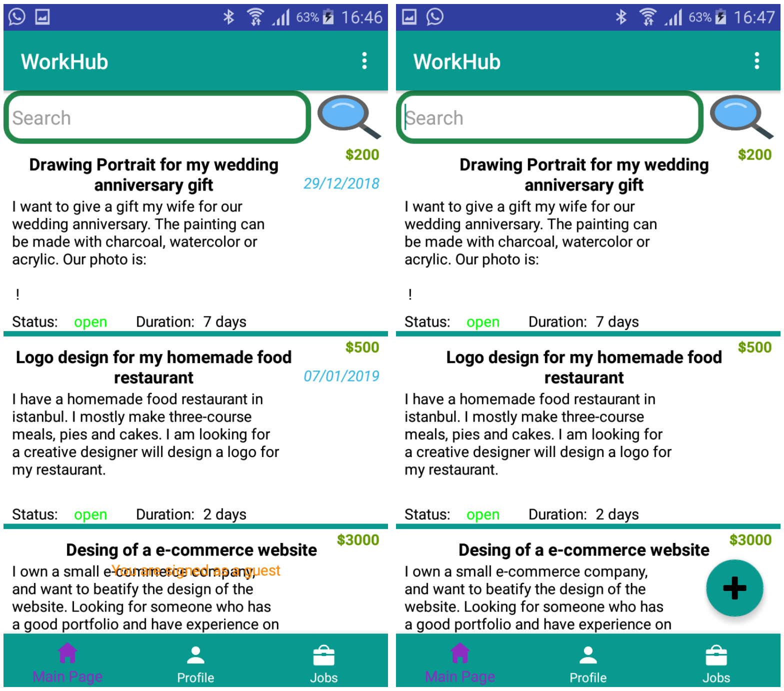


İlber Tatlıcı, 55 Ankara

Works in Finance sector. Is CEO of a company. Has 3 kids and 1 dog.

Freelancer	Project Name	Last Activity	ltv
Jack Philips	Painting of my new village	6 month ago	$150
Julia Williamson	Repairing my beautiful baby.	10 months ago	$250
Jonathan Martin	Giving my cat hugs	2 moths ago	$242

Figure 5: Profile Page



$200

Drawing Portrait for my wedding anniversary gift

29/12/2018

I want to give a gift my wife for our wedding anniversary. The painting can be made with charcoal, watercolor or acrylic. Our photo is:

!

Status: open Duration: 7 days

$500

Logo design for my homemade food restaurant

07/01/2019

I have a homemade food restaurant in istanbul. I mostly make three-course meals, pies and cakes. I am looking for a creative designer will design a logo for my restaurant.

Status: open Duration: 2 days

$3000

Desing of a e-commerce website

You are signed in as guest

I own a small e-commerce company, and want to beatify the design of the website. Looking for someone who has a good portfolio and have experience on

$200

Drawing Portrait for my wedding anniversary gift

I want to give a gift my wife for our wedding anniversary. The painting can be made with charcoal, watercolor or acrylic. Our photo is:

!

Status: open Duration: 7 days

$500

Logo design for my homemade food restaurant

I have a homemade food restaurant in istanbul. I mostly make three-course meals, pies and cakes. I am looking for a creative designer will design a logo for my restaurant.

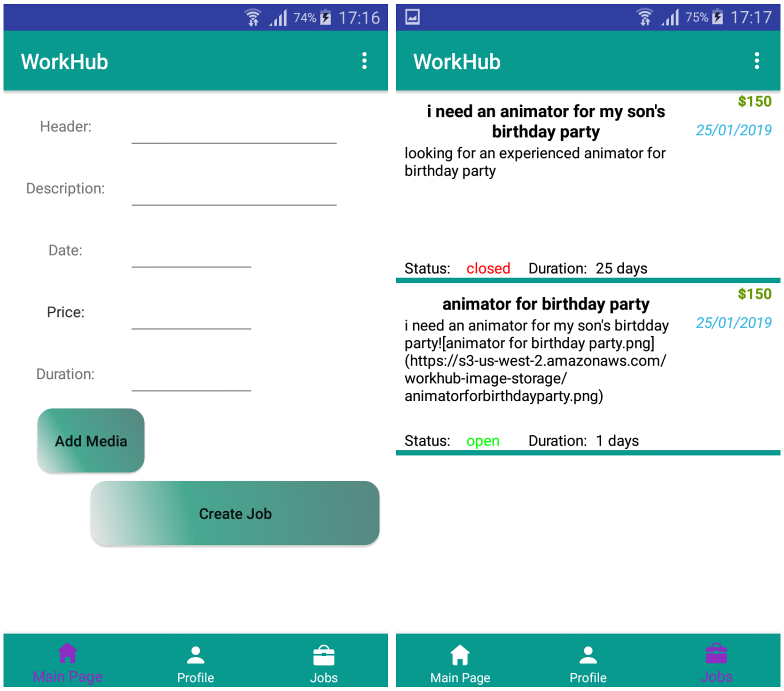
Status: open Duration: 2 days

$3000

Desing of a e-commerce website

I own a small e-commerce company, and want to beatify the design of the website. Looking for someone who has a good portfolio and have experience on

Figure 6: Android Main Page as a guest and client



i need an animator for my son's birthday party $150 *25/01/2019*

looking for an experienced animator for birthday party

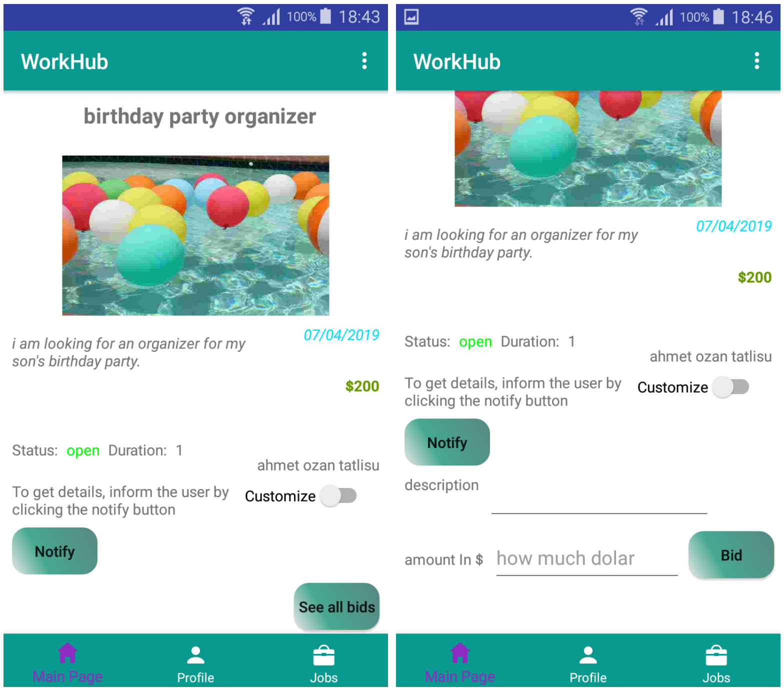
Status: closed Duration: 25 days

animator for birthday party $150 *25/01/2019*

i need an animator for my son's birtdday party![animator for birthday party.png](https://s3-us-west-2.amazonaws.com/workhub-image-storage/animatorforbirthdayparty.png)

Status: open Duration: 1 days

Figure 7: Job create page and jobs page



birthday party organizer

i am looking for an organizer for my son's birthday party. *07/04/2019*

$200

Status: open Duration: 1

ahmet ozan tatlisu

To get details, inform the user by clicking the notify button

Customize

i am looking for an organizer for my son's birthday party. *07/04/2019*

$200

Status: open Duration: 1

ahmet ozan tatlisu

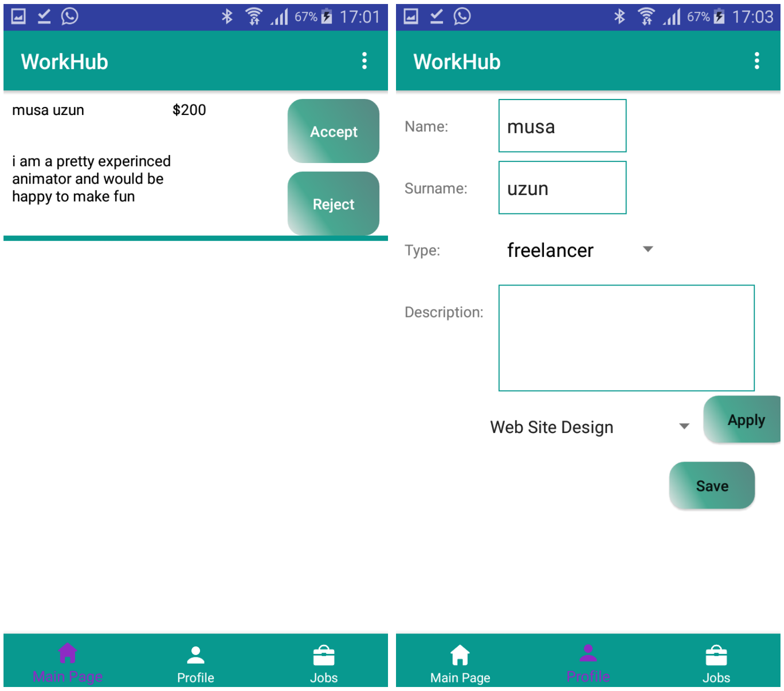
To get details, inform the user by clicking the notify button

Customize

description

amount In $ how much dolar

Figure 8: Jobs detail page for client and freelancer



musa uzun $200

i am a pretty experinced animator and would be happy to make fun

Name: musa

Surname: uzun

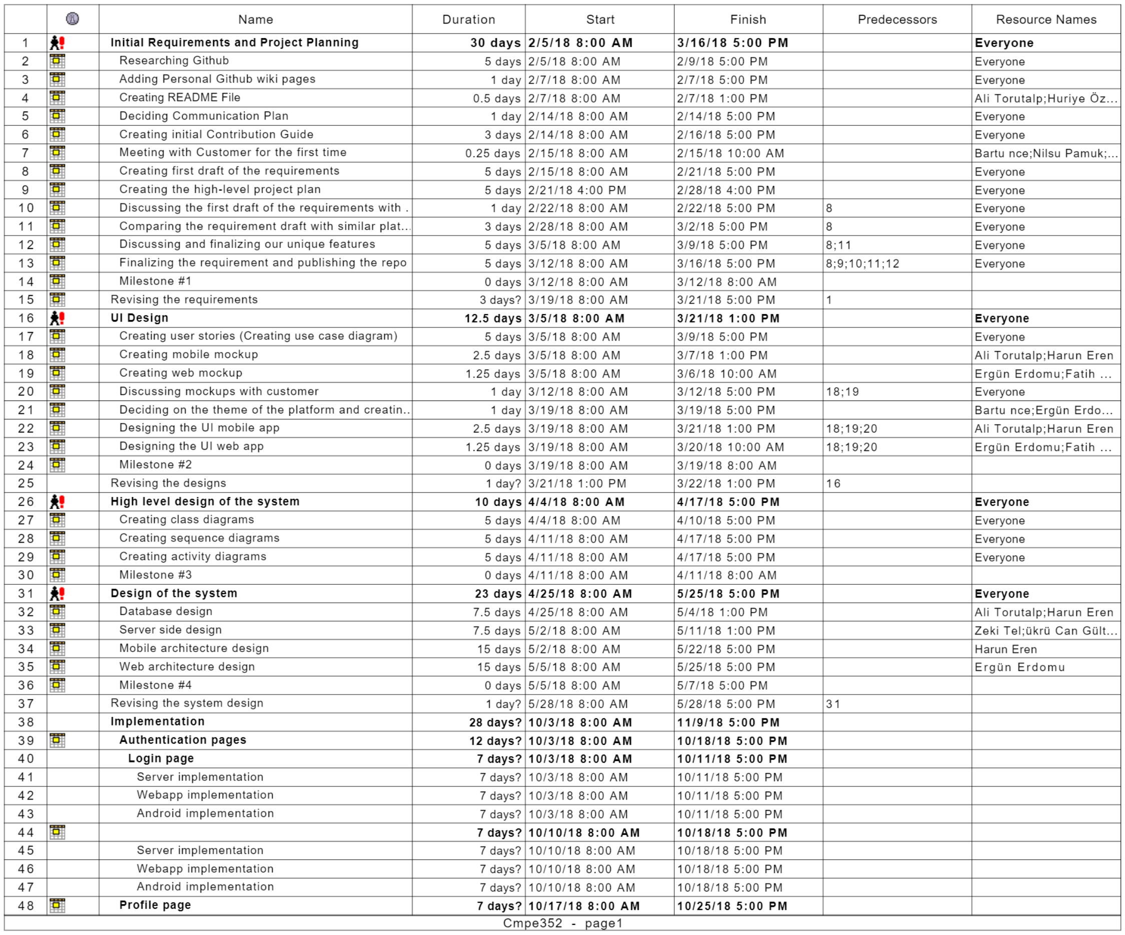
Type: freelancer

Description:

Web Site Design

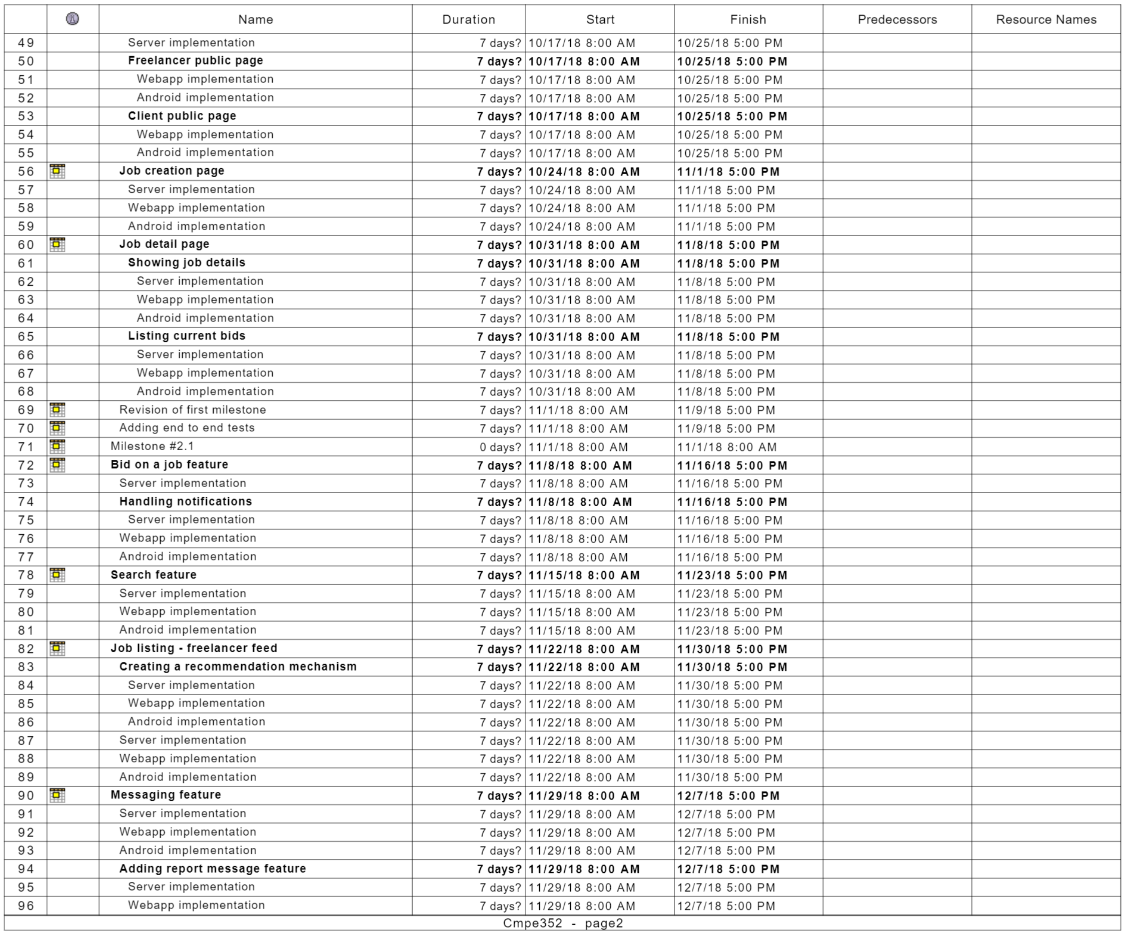
Figure 9: All bids page for client and profile edit page for freelancer

6 Project Plan



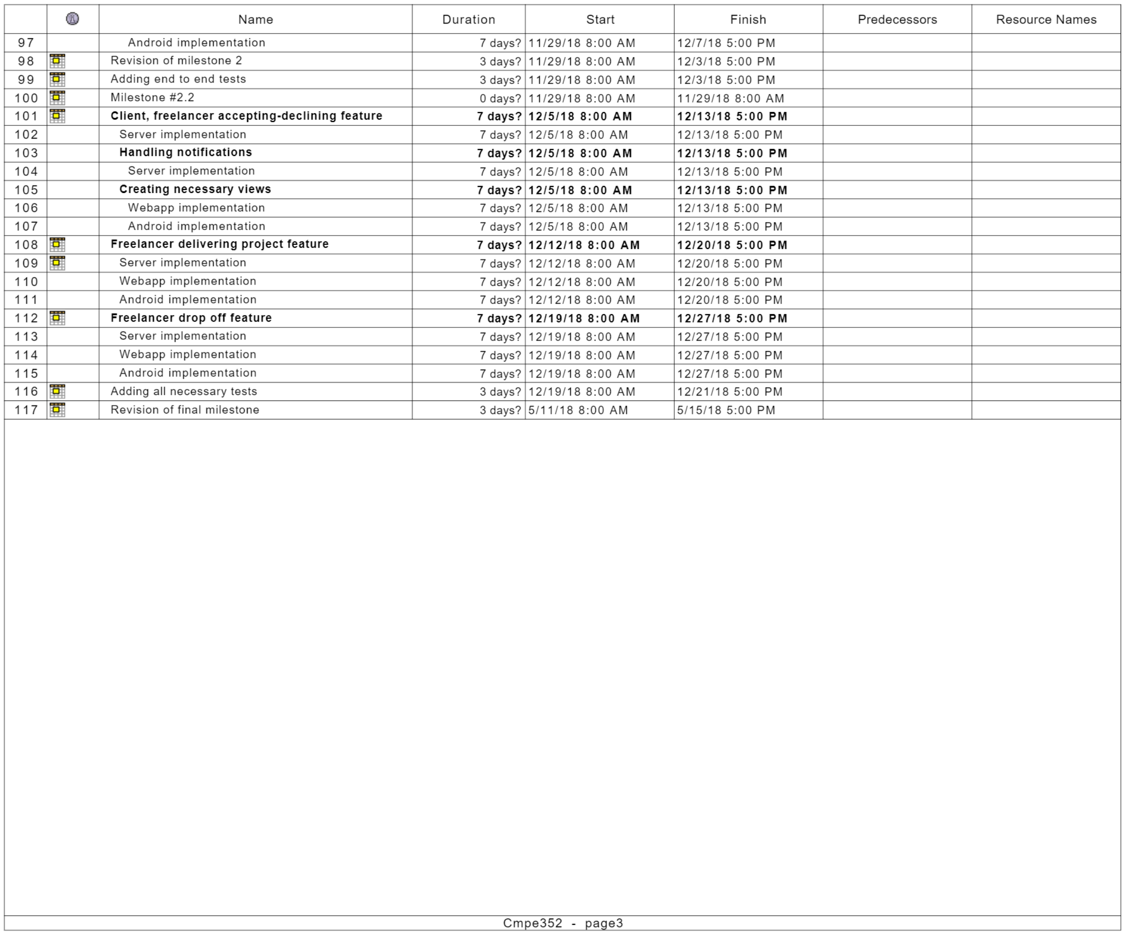
	ⓘ	Name	Duration	Start	Finish	Predecessors	Resource Names
1	❗	**Initial Requirements and Project Planning**	**30 days**	**2/5/18 8:00 AM**	**3/16/18 5:00 PM**		**Everyone**
2	▦	Researching Github	5 days	2/5/18 8:00 AM	2/9/18 5:00 PM		Everyone
3	▦	Adding Personal Github wiki pages	1 day	2/7/18 8:00 AM	2/7/18 5:00 PM		Everyone
4	▦	Creating README File	0.5 days	2/7/18 8:00 AM	2/7/18 1:00 PM		Ali Torutalp;Huriye Öz...
5	▦	Deciding Communication Plan	1 day	2/14/18 8:00 AM	2/14/18 5:00 PM		Everyone
6	▦	Creating initial Contribution Guide	3 days	2/14/18 8:00 AM	2/16/18 5:00 PM		Everyone
7	▦	Meeting with Customer for the first time	0.25 days	2/15/18 8:00 AM	2/15/18 10:00 AM		Bartu nce;Nilsu Pamuk;...
8	▦	Creating first draft of the requirements	5 days	2/15/18 8:00 AM	2/21/18 5:00 PM		Everyone
9	▦	Creating the high-level project plan	5 days	2/21/18 4:00 PM	2/28/18 4:00 PM		Everyone
10	▦	Discussing the first draft of the requirements with .	1 day	2/22/18 8:00 AM	2/22/18 5:00 PM	8	Everyone
11	▦	Comparing the requirement draft with similar plat...	3 days	2/28/18 8:00 AM	3/2/18 5:00 PM	8	Everyone
12	▦	Discussing and finalizing our unique features	5 days	3/5/18 8:00 AM	3/9/18 5:00 PM	8;11	Everyone
13	▦	Finalizing the requirement and publishing the repo	5 days	3/12/18 8:00 AM	3/16/18 5:00 PM	8;9;10;11;12	Everyone
14	▦	Milestone #1	0 days	3/12/18 8:00 AM	3/12/18 8:00 AM		
15	▦	Revising the requirements	3 days?	3/19/18 8:00 AM	3/21/18 5:00 PM	1	
16	❗	**UI Design**	**12.5 days**	**3/5/18 8:00 AM**	**3/21/18 1:00 PM**		**Everyone**
17	▦	Creating user stories (Creating use case diagram)	5 days	3/5/18 8:00 AM	3/9/18 5:00 PM		Everyone
18	▦	Creating mobile mockup	2.5 days	3/5/18 8:00 AM	3/7/18 1:00 PM		Ali Torutalp;Harun Eren
19	▦	Creating web mockup	1.25 days	3/5/18 8:00 AM	3/6/18 10:00 AM		Ergün Erdomu;Fatih ...
20	▦	Discussing mockups with customer	1 day	3/12/18 8:00 AM	3/12/18 5:00 PM	18;19	Everyone
21	▦	Deciding on the theme of the platform and creatin..	1 day	3/19/18 8:00 AM	3/19/18 5:00 PM		Bartu nce;Ergün Erdo...
22	▦	Designing the UI mobile app	2.5 days	3/19/18 8:00 AM	3/21/18 1:00 PM	18;19;20	Ali Torutalp;Harun Eren
23	▦	Designing the UI web app	1.25 days	3/19/18 8:00 AM	3/20/18 10:00 AM	18;19;20	Ergün Erdomu;Fatih ...
24	▦	Milestone #2	0 days	3/19/18 8:00 AM	3/19/18 8:00 AM		
25		Revising the designs	1 day?	3/21/18 1:00 PM	3/22/18 1:00 PM	16	
26	❗	**High level design of the system**	**10 days**	**4/4/18 8:00 AM**	**4/17/18 5:00 PM**		**Everyone**
27	▦	Creating class diagrams	5 days	4/4/18 8:00 AM	4/10/18 5:00 PM		Everyone
28	▦	Creating sequence diagrams	5 days	4/11/18 8:00 AM	4/17/18 5:00 PM		Everyone
29	▦	Creating activity diagrams	5 days	4/11/18 8:00 AM	4/17/18 5:00 PM		Everyone
30	▦	Milestone #3	0 days	4/11/18 8:00 AM	4/11/18 8:00 AM		
31	❗	**Design of the system**	**23 days**	**4/25/18 8:00 AM**	**5/25/18 5:00 PM**		**Everyone**
32	▦	Database design	7.5 days	4/25/18 8:00 AM	5/4/18 1:00 PM		Ali Torutalp;Harun Eren
33	▦	Server side design	7.5 days	5/2/18 8:00 AM	5/11/18 1:00 PM		Zeki Tel;ükrü Can Gült...
34	▦	Mobile architecture design	15 days	5/2/18 8:00 AM	5/22/18 5:00 PM		Harun Eren
35	▦	Web architecture design	15 days	5/5/18 8:00 AM	5/25/18 5:00 PM		Ergün Erdomu
36	▦	Milestone #4	0 days	5/5/18 8:00 AM	5/7/18 5:00 PM		
37		Revising the system design	1 day?	5/28/18 8:00 AM	5/28/18 5:00 PM	31	
38		**Implementation**	**28 days?**	**10/3/18 8:00 AM**	**11/9/18 5:00 PM**		
39	▦	**Authentication pages**	**12 days?**	**10/3/18 8:00 AM**	**10/18/18 5:00 PM**		
40		**Login page**	**7 days?**	**10/3/18 8:00 AM**	**10/11/18 5:00 PM**		
41		Server implementation	7 days?	10/3/18 8:00 AM	10/11/18 5:00 PM		
42		Webapp implementation	7 days?	10/3/18 8:00 AM	10/11/18 5:00 PM		
43		Android implementation	7 days?	10/3/18 8:00 AM	10/11/18 5:00 PM		
44	▦		**7 days?**	**10/10/18 8:00 AM**	**10/18/18 5:00 PM**		
45		Server implementation	7 days?	10/10/18 8:00 AM	10/18/18 5:00 PM		
46		Webapp implementation	7 days?	10/10/18 8:00 AM	10/18/18 5:00 PM		
47		Android implementation	7 days?	10/10/18 8:00 AM	10/18/18 5:00 PM		
48	▦	**Profile page**	**7 days?**	**10/17/18 8:00 AM**	**10/25/18 5:00 PM**		

Cmpe352 - page1



		Name	Duration	Start	Finish	Predecessors	Resource Names
49		Server implementation	7 days?	10/17/18 8:00 AM	10/25/18 5:00 PM		
50		**Freelancer public page**	**7 days?**	**10/17/18 8:00 AM**	**10/25/18 5:00 PM**		
51		Webapp implementation	7 days?	10/17/18 8:00 AM	10/25/18 5:00 PM		
52		Android implementation	7 days?	10/17/18 8:00 AM	10/25/18 5:00 PM		
53		**Client public page**	**7 days?**	**10/17/18 8:00 AM**	**10/25/18 5:00 PM**		
54		Webapp implementation	7 days?	10/17/18 8:00 AM	10/25/18 5:00 PM		
55		Android implementation	7 days?	10/17/18 8:00 AM	10/25/18 5:00 PM		
56	▦	**Job creation page**	**7 days?**	**10/24/18 8:00 AM**	**11/1/18 5:00 PM**		
57		Server implementation	7 days?	10/24/18 8:00 AM	11/1/18 5:00 PM		
58		Webapp implementation	7 days?	10/24/18 8:00 AM	11/1/18 5:00 PM		
59		Android implementation	7 days?	10/24/18 8:00 AM	11/1/18 5:00 PM		
60	▦	**Job detail page**	**7 days?**	**10/31/18 8:00 AM**	**11/8/18 5:00 PM**		
61		**Showing job details**	**7 days?**	**10/31/18 8:00 AM**	**11/8/18 5:00 PM**		
62		Server implementation	7 days?	10/31/18 8:00 AM	11/8/18 5:00 PM		
63		Webapp implementation	7 days?	10/31/18 8:00 AM	11/8/18 5:00 PM		
64		Android implementation	7 days?	10/31/18 8:00 AM	11/8/18 5:00 PM		
65		**Listing current bids**	**7 days?**	**10/31/18 8:00 AM**	**11/8/18 5:00 PM**		
66		Server implementation	7 days?	10/31/18 8:00 AM	11/8/18 5:00 PM		
67		Webapp implementation	7 days?	10/31/18 8:00 AM	11/8/18 5:00 PM		
68		Android implementation	7 days?	10/31/18 8:00 AM	11/8/18 5:00 PM		
69	▦	Revision of first milestone	7 days?	11/1/18 8:00 AM	11/9/18 5:00 PM		
70	▦	Adding end to end tests	7 days?	11/1/18 8:00 AM	11/9/18 5:00 PM		
71	▦	Milestone #2.1	0 days?	11/1/18 8:00 AM	11/1/18 8:00 AM		
72	▦	**Bid on a job feature**	**7 days?**	**11/8/18 8:00 AM**	**11/16/18 5:00 PM**		
73		Server implementation	7 days?	11/8/18 8:00 AM	11/16/18 5:00 PM		
74		**Handling notifications**	**7 days?**	**11/8/18 8:00 AM**	**11/16/18 5:00 PM**		
75		Server implementation	7 days?	11/8/18 8:00 AM	11/16/18 5:00 PM		
76		Webapp implementation	7 days?	11/8/18 8:00 AM	11/16/18 5:00 PM		
77		Android implementation	7 days?	11/8/18 8:00 AM	11/16/18 5:00 PM		
78	▦	**Search feature**	**7 days?**	**11/15/18 8:00 AM**	**11/23/18 5:00 PM**		
79		Server implementation	7 days?	11/15/18 8:00 AM	11/23/18 5:00 PM		
80		Webapp implementation	7 days?	11/15/18 8:00 AM	11/23/18 5:00 PM		
81		Android implementation	7 days?	11/15/18 8:00 AM	11/23/18 5:00 PM		
82	▦	**Job listing - freelancer feed**	**7 days?**	**11/22/18 8:00 AM**	**11/30/18 5:00 PM**		
83		**Creating a recommendation mechanism**	**7 days?**	**11/22/18 8:00 AM**	**11/30/18 5:00 PM**		
84		Server implementation	7 days?	11/22/18 8:00 AM	11/30/18 5:00 PM		
85		Webapp implementation	7 days?	11/22/18 8:00 AM	11/30/18 5:00 PM		
86		Android implementation	7 days?	11/22/18 8:00 AM	11/30/18 5:00 PM		
87		Server implementation	7 days?	11/22/18 8:00 AM	11/30/18 5:00 PM		
88		Webapp implementation	7 days?	11/22/18 8:00 AM	11/30/18 5:00 PM		
89		Android implementation	7 days?	11/22/18 8:00 AM	11/30/18 5:00 PM		
90	▦	**Messaging feature**	**7 days?**	**11/29/18 8:00 AM**	**12/7/18 5:00 PM**		
91		Server implementation	7 days?	11/29/18 8:00 AM	12/7/18 5:00 PM		
92		Webapp implementation	7 days?	11/29/18 8:00 AM	12/7/18 5:00 PM		
93		Android implementation	7 days?	11/29/18 8:00 AM	12/7/18 5:00 PM		
94		**Adding report message feature**	**7 days?**	**11/29/18 8:00 AM**	**12/7/18 5:00 PM**		
95		Server implementation	7 days?	11/29/18 8:00 AM	12/7/18 5:00 PM		
96		Webapp implementation	7 days?	11/29/18 8:00 AM	12/7/18 5:00 PM		

Cmpe352 - page2



	ⓘ	Name	Duration	Start	Finish	Predecessors	Resource Names
97		Android implementation	7 days?	11/29/18 8:00 AM	12/7/18 5:00 PM		
98	▦	Revision of milestone 2	3 days?	11/29/18 8:00 AM	12/3/18 5:00 PM		
99	▦	Adding end to end tests	3 days?	11/29/18 8:00 AM	12/3/18 5:00 PM		
100	▦	Milestone #2.2	0 days?	11/29/18 8:00 AM	11/29/18 8:00 AM		
101	▦	**Client, freelancer accepting-declining feature**	**7 days?**	**12/5/18 8:00 AM**	**12/13/18 5:00 PM**		
102		Server implementation	7 days?	12/5/18 8:00 AM	12/13/18 5:00 PM		
103		**Handling notifications**	**7 days?**	**12/5/18 8:00 AM**	**12/13/18 5:00 PM**		
104		Server implementation	7 days?	12/5/18 8:00 AM	12/13/18 5:00 PM		
105		**Creating necessary views**	**7 days?**	**12/5/18 8:00 AM**	**12/13/18 5:00 PM**		
106		Webapp implementation	7 days?	12/5/18 8:00 AM	12/13/18 5:00 PM		
107		Android implementation	7 days?	12/5/18 8:00 AM	12/13/18 5:00 PM		
108	▦	**Freelancer delivering project feature**	**7 days?**	**12/12/18 8:00 AM**	**12/20/18 5:00 PM**		
109	▦	Server implementation	7 days?	12/12/18 8:00 AM	12/20/18 5:00 PM		
110		Webapp implementation	7 days?	12/12/18 8:00 AM	12/20/18 5:00 PM		
111		Android implementation	7 days?	12/12/18 8:00 AM	12/20/18 5:00 PM		
112	▦	**Freelancer drop off feature**	**7 days?**	**12/19/18 8:00 AM**	**12/27/18 5:00 PM**		
113		Server implementation	7 days?	12/19/18 8:00 AM	12/27/18 5:00 PM		
114		Webapp implementation	7 days?	12/19/18 8:00 AM	12/27/18 5:00 PM		
115		Android implementation	7 days?	12/19/18 8:00 AM	12/27/18 5:00 PM		
116	▦	Adding all necessary tests	3 days?	12/19/18 8:00 AM	12/21/18 5:00 PM		
117	▦	Revision of final milestone	3 days?	5/11/18 8:00 AM	5/15/18 5:00 PM		

Cmpe352 - page3

7 Code Structure

7.1 Branching

Each of our features were developed in their own branch, to prevent any conflicts. They were all contained in a general branch called ”feature”, followed by a sub-branch named after what they intend to do. Bug-fixes were kept under another branch by the name of ”bugfix”, following the same structure as ”feature”. This was done separately for all 3 workgroups (back-end, front-end, and Android), to prevent any feature name mixups or code conflicts.

7.2 Pull Requests

We utilized Github's pull request reviewing system very strictly. None of the code was directly pushed into the main branch unless it was an extremely minor fix, and even then, it was done under the supervision of someone from another subgroup, making sure there won't be any conflicts.

8 Evaluation of the Tools Used

We have used a multitude of different tools for our project, mostly with great success.

- **SourceTree** : The main software we have used to create, edit and delete our branches while also quickly being able to push, pull and commit code as needed. It has a somewhat steep learning curve, but it has proven to be very helpful in our project.
- **Node.js Express** : The framework used for back-end development. Our experience with it has been pleasant overall, being very accessible with plenty of documentation for each library we used. Express' ability to deploy a working app very quickly is a boon, as well.
- **Sequelize** : The framework that allows us to access our database, and send queries easily using its built-in functions, instead of requiring to type out the query by hand. Aside from the fact that its documentation website seems to be down more often than not, it's been very useful.
- **Android** : We have used native Java to implement the Android part of the project. Java is simple to implement and has many easily accessible sources on various websites.
- **Now** : We've deployed each of our pull requests with Now and it helped us test whether the changes we have made were acceptable without the need to download, apply the patch and build the code base all over again for each branch.
- **CircleCI** : We've used this as the CI/CD tool. Its configuration is pretty easy and it works at acceptable speeds. So, we can deploy our changes almost instantly.
- **Prettier** : Prettier is a tool used for conforming code to a single standard, greatly increasing readability in group projects like ours. As minor as it may seem, it's been quite a bit of help.

9 User Manual

Users can learn how to use and interact with interface with this. When you first enter, the website it will redirect you to login page.

9.1 Login

If you are already a registered user, type your email and password then click login button, then you will be redirected to our dashboard. If you are not a registered user, you can click ”Not a user? Register” link to go register page.

9.2 Register

In the register page you should set fill the fields and choose user type and click Register Now button. Congratulations and welcome to WORKHUB.

9.3 Creating a Job

To creating a job, first of all you must be a client. So make sure, you logged in as a client user. After that, in the main page click create job button and fill the title and description(you can add images if you want) of your page, price of your job and expected time for doing this job. If you have a deadline for your job, check the has date checkbox and select due date. Also, you can select categories for your project to make job appear before relevant freelancers.

9.4 Search a Job

When you are at main page, you can see filter card, a search bar and all(suggested for freelancers) jobs list. You can search a job with semantic search with using search bar or filter the jobs with using filter card. In the filter card you can select which categories you are interested in and/or price and estimated duration intervals. With clicking the title of the job you can go to job details.

9.5 Bidding a Job

First thing to bid a job, you must logged in as a freelancer. Be sure of that. After that, in the job detail of a job you can click the create bid button to bid that job. With create bid button, you should fill bid price and bid description fields. Also you can add links to bid description.

9.6 Accepting a Job

If you are a client user, you can accept a bid in the details of that job. To do this there is a accept button right next to the bid.

9.7 List of past and active jobs.

When you click the profile page button at main page, if you are a freelancer, you can see your accepted jobs and edit preferences. If you click one of your jobs, you can go to details of that. If you are a client user, again in your profile page you can check past and active list of jobs.

9.8 Requesting Update of a Job

A client user can make request of update in one of accepted jobs. To to this just go to details of that job and request write what is your request.(also you can use images in this request or empty request).

9.9 Adding milestone and Completion of a Job

Freelancer can add a milestone to a job in the job details if that job is accepted. In the job detail page, freelancer can add milestone(text, photos or screenshots if necessary) or complete the job. After that, client can complete the payment to the freelancer.

10 System Manual

This document contains instructions to run frontend, android and backend projects. As well as importing the data dump into your machine. First things, first:

10.1 Backend

To run the backend
- clone the repository with ‘git clone git@github.com:bounswe/bounswe2018group2.git‘
- cd into backend/workhub ‘cd backend/workhub‘
- run ‘npm install‘ to install dependencies
- copy ‘.env.example‘ into ‘.env.local‘ and fill it with necessary values

MYSQL_HOST is the host name of the mysql server you are using example: ‘localhost‘
MYSQL_USERNAME is the username of the mysql server you are using
MYSQL_PASSWORD is the password of the username of the mysql server you are using
MYSQL_DATABASE is the your database name
AWS_KEY_ID is AWS key id
AWS_SECRET_KEY is AWS secret key

After you successfully added ‘.env.local‘:
- run ‘npm run migrate‘ to migrate the db

After a successful migration, you can start the app with ‘npm run start‘.

To test whether the app is started correctly, you can visit ‘http://localhost:3000‘.

10.2 Frontend

To run the frontend; firstly you need to start backend server else you don’t see much.
- clone the repository with ‘git clone git@github.com:bounswe/bounswe2018group2.git‘
- cd into frontend ‘cd frontend‘
- run ‘yarn‘ to install dependencies
- run ‘yarn start‘ to start development server.

10.3 Android

Running android requires android studio.
- clone the repository with ‘git clone git@github.com:bounswe/bounswe2018group2.git‘
- import android folder into an Android Studio workspace.
- press run.